VIMTREK

WHERE SENSE MEETS SIZZLE

A SmartBIM Company

VIMTREK 1.1 User Guide

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DISCLAMER: In the producing of a VIM Model Scene VIMtrek extracts 3D geometry, materials and property information from a Revit model project. Due to restrictions with the Revit API VIMtrek cannot use all the native Revit element definitions. Also VIMtrek's objects and lighting properties are optimized for high performance in a Realtime-Rendered environment. This being the case VIMtrek substitutes texture material, plant and RCP images from its library for the corresponding types in Revit. VIMtrek also attempts to match photometric data for lighting elements. As such VIMtrek simulates the Revit model and all associated properties but it is not an exact copy and therefore you may observe visual differences in lighting, plants and materials.

VIM: Visual Information Model (VIM)

VIMTREK's interactive modeling VIM software allows you to experience the building's totally immersive environment and will be a game changer in the Model-Visualization, Design-Coordination, Design- Build process.

VIMtrek's Visual Information Modeling solutions include **VIMtrek Producer**, **VIMtrek Viewer** and Web-Browser hosted VIM Model Scene viewing.

The features and tools of **VIMtrek Producer** and **VIMtrek Viewer** are covered in this **VIMtrek 1.1 User Guide** complete with overviews, descriptions, and examples.

In the event you discover a feature, process or tool that does not work as intended or you discover a innovative way of using one of the features in **VIMtrek Producer** or **Viewer** we'd like to hear about it. Please go to VIMtrek Support and enter your suggestion. http://help.vimtrek.com/forums/20233897-suggestion-box

We greatly appreciate any comments, suggestions or questions you may have about your experience with the **VIMtrek** programs.

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. . . . . where Building **Information Modeling** meets Design **Visualization** . . . .

. . . . . where **Sense** meets **Sizzle** . . . .

Visual Information Modeling

Introduction

Welcome to the **VIMtrek 1.1 User Guide,** a guide designed to get you introduced to the features, tools and processes for getting the most out of your experience with **VIMtrek Producer**, **VIMtrek Viewer**, **VIMtrek** web-based viewing and **VIMtrek Studio**.

VIMtrek programs are designed to expand the value of your Autodesk® Revit building models by taking a data rich Building Information Model (BIM) into a dynamic, realtime rendered Visual Information Model (VIM) – BIM to VIM.

Consider generating an exterior scene rendering of your Revit BIM model in a traditional rendering program. A medium quality rendering could take hours for the render process to run and once completed all you have is a static (single image) image. As the design changes you have to run the time consuming rendering process again to have an image that matches the modified design.

With the power of the **VIMtrek** suite of programs you can produce a VIM Model Scene in literally a ***fraction*** of the time of the traditional static (single image) rendering method. Also, through the use of advance gaming technology the VIM Model Scene produced by **VIMtrek** can be navigated through freely by any of the stakeholders involved with the project.

Imagine this, in a fraction of the traditional rendering time with **VIMtrek** you can produce from your Revit project model a fully visualized information model scene that you can freely roam through using basic gaming controls – mouse and keyboard - and when an object is selected the building information (Revit, Building Product Manufacturer, ecoScorecard) associated to the selected model object will ***display in the VIMtrek Viewer***! We refer to the journey (or trek) of bringing the building information into the visualization of the design as **Visual Information Modeling** – thus – **VIMtrek**.

Features, tools and processes are covered in detail in the **VIMtrek 1.1 User Guide**. In addition to the simple to follow instructions screen shots and examples are given at every opportunity to clearly communicate the power and processes of the **VIMtrek** programs.

VIMtrek Overview

VIMtrek's goal is to provide the design team as well as any stakeholders involved in the development of a Revit based project the means to quickly review the progress of the development of the BIM model at any time during the life cycle of the project.

VIMtrek has provided not only the means to review the project's BIM model visually and independent of Revit but has also provided the capability to review the BIM object's ***information*** as well.

VIMtrek – Visualization of model objects as well as their associated building information.

VIMtrek has accomplished the goal of producing a visual environment for conducting a design review as well as giving access to the building object's information. This has been achieved through advance gaming technology. The VIMtrek technology provides the Architect, Engineer, General Contractor, Facilities Manager and Building Owner the means to quickly and easily generate a design review file in **VIMtrek Viewer** or any of the major Web Browsers. These **VIMtrek Viewer** files run completely independent of Revit and includes tools for adding markers for annotations (VIMnotes) and recording walk-throughs through the model scene. Both these features support model checking and the collaborative design review process.

The display performance and high graphic quality in VIM Model Scene is enhanced by the substitution of certain Revit objects that have been optimized for this VIM Model Scene environment. The two categories of Revit objects substituted during the producing of a VIM Model Scene are Revit Plants and Revit Lighting Fixtures.

The VIMtrek Plants substituted for the Revit Plants have been optimized to display an incredible level of detail and the generation of realtime shadows without affecting the ability to smoothly navigate through the VIM Model Scene. See **VIMtrek Plants** for more details.

VIMtrek Plants in a VIM Model Scene

VIMtrek also substitutes a simulated version of the Revit Lighting Fixtures into the VIM Model Scene. Like the Plant substitutions this also done to optimize the navigation through the Realtime Rendered VIM Model Scene environment. The VIMtrek lighting objects have the same physical properties of the Revit Lighting Fixtures but their lighting properties are not based on the associated IES file Photometric data. The resulting Realtime Render style is somewhat different than what you get in a photo-realistic static image rendering. See **VIMtrek Lighting** for more details.

VIMtrek Programs

When the **VIMtrek's** suite of programs are installed you get the **VIMtrek Tools** panel added to your Revit Add-Ins tab. The VIMtrek Tools panel includes **Export to VIM** and **VIMtrek Producer**. Icons are automatically added to your Desktop for **VIMtrek Producer** and **VIMtrek Viewer**.

VIMtrek's Export to VIM program generates a visualized model scene simulation of a Revit model project. Once exported to a vim file the VIM Model Scene can be opened in **VIMtrek Producer** where the model scene's environment can be tweaked to enhance the visualization of the building model and its surroundings. The VIM Model Scene is separate from the Revit model project so the integrity of the Revit project is protected. Once the VIM Model Scene has been adjusted to meet visualization needs it can be opened in **VIMtrek Viewer.**

VIMtrek Viewer allows anyone involved in the design process to open, dynamically 'walk' through the VIM Model Scene, select objects to review their property information and if needed, **VIM Markers** and associated **VIMnotes** (annotations) can be placed to mark areas where the BIM model or the design needs to be checked and modified. The navigation or roaming through the VIM Model Scene can also be recorded and saved as a standard .avi file. VIM Model Scenes can also be exported from **VIMtrek Producer** for viewing in a major web-browser. This gives a firm virtually unlimited project collaboration review capabilities of not only the visual representation of a design, but building information as well.

This guide will cover the fundamental features, tools and processes of **Export to VIM, VIMtrek Producer** (Revit Add-Ins Tools)**, VIMtrek Viewer**, **VIMtrek** Web-browser Viewing and **VIMtrek Studio**.

Installation

Installation Overview

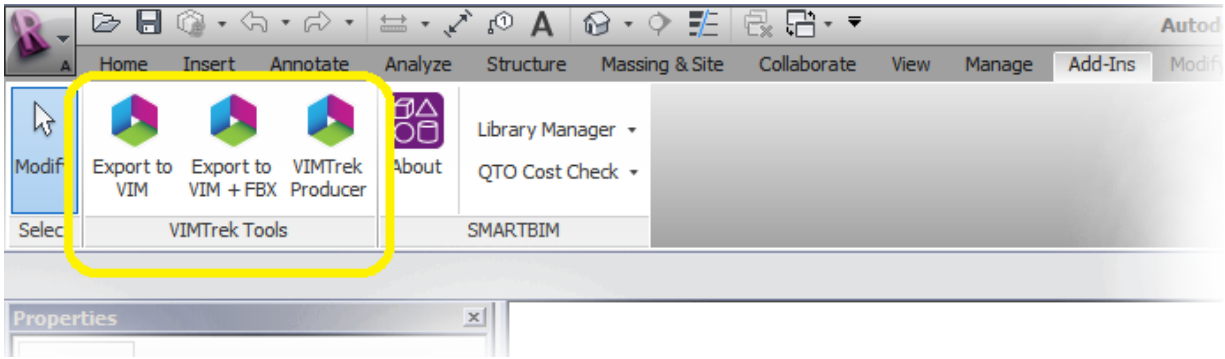
VIMtrek installation is performed by simply running the product's executable file downloaded from VIMtrek Studio. It is recommended you accept the default settings during the installation.

VIMtrek's Tools Panel is automatically added to your installed Revit 2012 Add-Ins tab during VIMtrek's installation process. Desktop shortcuts for **VIMtrek Producer** and **VIMtrek Viewer** are placed on your Desktop and the VIMtrek Uninstaller is installed in your Window's Programs menu. In Windows 7 the uninstaller is found at Start > All Programs > VIMtrek > Uninstall VIMtrek.

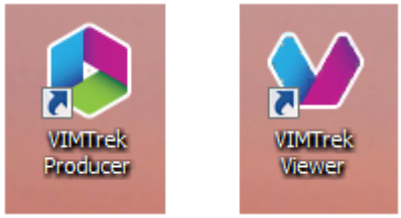
The **VIMtrek Tools** panel in the Add-Ins tab contains **Export to VIM, Export to VIM+FBX** and **VIMtrek Producer.** the automatic placing of

Once the installation of VIMtrek is completed you can run Revit to see the new **VIMtrek Tools** icons in the Add-In section of Revit interface as well as the VIMtrek shortcut icons on your Desktop.

NOTE: Close Autodesk Revit and other versions of VIMtrek before running the installation.



Revit Add-Ins tab VIMtrek Tools



VIMtrek Desktop Icons

Administrator level rights for the PC Operating System are required for the installation of **VIMtrek**.

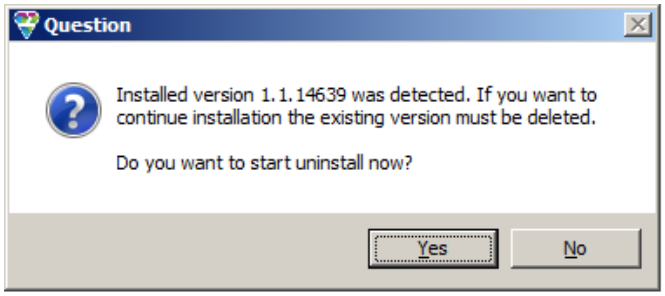
See **System Requirements** for the details on the computer system requirements for installing and running **VIMtrek**.

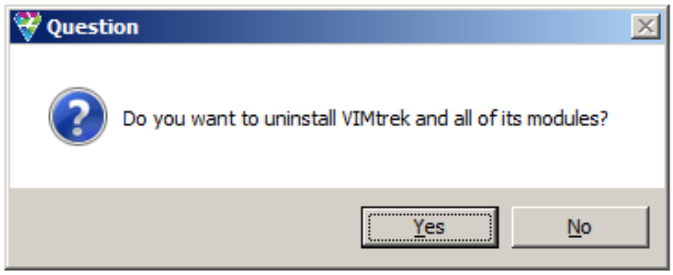
> **NOTE**: Some third-party network and local Firewall services may block the connection of the VIMtrek installer to the VIMtrek Studio Permissioning Server. Temporarily disabling the Firewall service or setting the installation file of VIMtrek as a Safe Application in the Firewall settings may be required. Please refer to your Firewall specifications or your IT Administrator for specific details.

Installation Steps:

1. Navigate to VIMtrek 1.1 Windows-installer executable file downloaded from VIMtrek Studio and run the application.
    - Double left-click on the file or right-click and select Run from the displayed menu.

If a previous version of **VIMtrek** has been installed you will be prompted to let the **VIMtrek** installer uninstall it. Select yes for this option to continue with the installation of the new version of VIMtrek. If you have not had a previous version installed go to step 6.

2. 

3. 

4. The **Setup** dialog will display the progress of the uninstallation of the previous version of **VIMtrek**.
5. The **Info** dialog will indicate the uninstallation is completed.
6. In the **Setup – VIMtrek** dialog pick the **Next >** button.
7. In the **License Agreement** dialog review the End User License Agreement and if in agreement select the 'I accept the agreement' option and then pick the **Next >** button.
8. In the **Installation Directory** dialog accept the default installation location and pick the **Next >** button.
9. In the **User Credentials** dialog enter your Username, Password and License Code and pick the **Next >** button (supply in email from VIMtrek Studio).
10. In the **Ready to Install** dialog pick the **Next >** button.
11. The **Installing** dialog will display a progress bar indicating the progress of the installation.
12. The **Completing the VIMtrek Setup Wizard** dialog will display automatically once the installation is complete. Pick **Finish** to complete the installation.

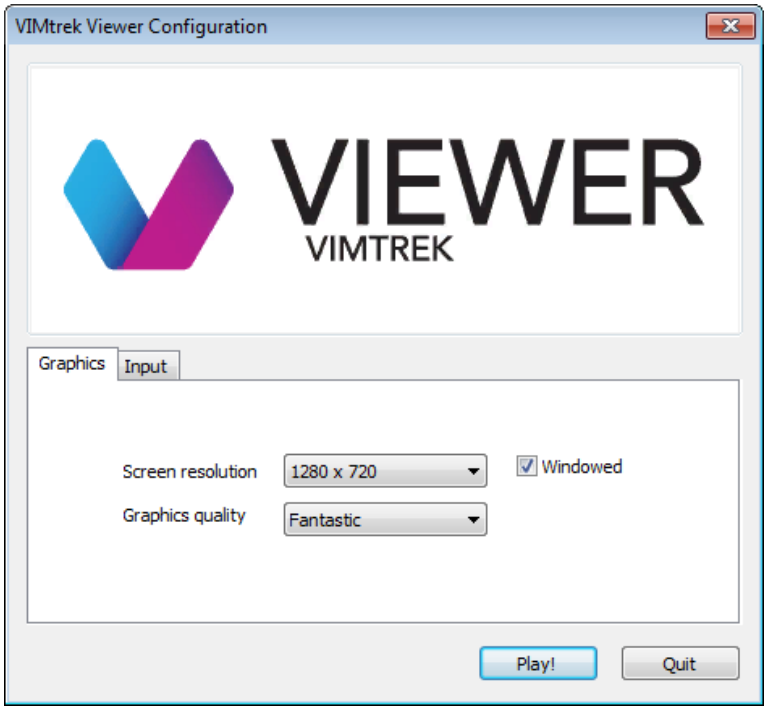
Testing the Installation

VIMtrek Producer

- From the Desktop launch **VIMtrek Producer** from the icon (See above). The program should launch without opening a vim file.
- Close the program.

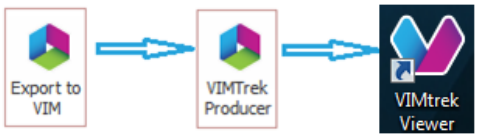
VIMtrek Viewer

- From the Desktop launch **VIMtrek Viewer** from the icon (See above). The **VIMtrek Viewer** Configuration dialog will open giving you options for setting the Viewer's Window Resolution and Input setting. Accept the defaults and pick the **Play!** button to open the Viewer. A default VIM Model Scene will open in the Viewer.



- Using the combination of a mouse and the navigation keyboard keys **W A S D** or the 4 directional keys test navigating around of the VIM Model Scene. Close the program.

VIMtrek Workflow Overview



The general workflow for making your Revit project model available for dynamic viewing in **VIMtrek Viewer** (PC or MAC) or a web browser is open the Revit project, set the appropriate View current in Revit, go to the Add-Ins tab and select the VIMtrek Tool **Export to VIM**. After the export operation is completed launch **VIMtrek Producer.** By default the VIM Model Scene (.vim file) just created will load.

In **VIMtrek Producer** make any adjustments to the VIM Model Scene environment and save the vim file. From **VIMtrek Producer** export the VIM Model Scene for viewing on a PC, MAC **(VIMtrek Viewer)** or in a major web browser.

Depending on which platform you export your VIM Model Scene to, navigate to the generated **VIMtrek Viewer** O/S platform file (.exe for PC and .app for MAC) and open it. If you exported it to be viewed in a web browser you will need to open the html file created with the series of files generated in a designated folder.

The specifics of using these tools are cover in **VIMtrek Features and Tools**.

VIMtrek Plants

In addition to generating a Visual Information Model of a Revit project in a fraction of the time of standard rendering programs, saving the VIM Model Scene in **VIMtrek Producer** optimizes model geometry and automatically substitutes graphically enhanced versions of the Revit Plants in the scene. The substitution feature supports Revit Plant Family Types of various heights. See below.

Revit plants – Realistic Display Style

Revit Plants – Revit Mental Ray Rendering

VIMtrek VIM Plant Substitution – optimized for Realtime Rendered environment

VIMtrek Lighting

VIMtrek's Exporter generates a VIM Model Scene which includes sun lighting, global illumination, Realtime Shadows and the ability to map the effects of Revit light sources.

The VIM Model Scene generated by **Export to VIM** or the **Export to VIM + FBX** produces a lighting environment that simulates the lighting properties of the Revit project model environment. In principal the properties of the Revit Lighting Fixtures are migrated into the VIM Model Scene and are simulated dynamically or "live" during your navigation through the scene. The power of this simulation technology greatly contributes to ability of VIMtrek to render a Revit project model for dynamic walk-through in a fraction of the time it takes other programs to create just a static single rendered image.

The VIMtrek versions of the Revit Lighting Fixtures are generated from Revit light source properties such as Light Illuminance, Luminous Intensity, Initial Color Intensity, Spot Filed Angle and others. At this time VIMtrek does not read Revit's Lighting Fixture IES file to determine its photometric properties therefore parameter based lighting analysis is not currently supported (see below).

VIMtrek Model Scene Lighting fixture Properties

Photometric information from the associated Lighting Fixture IES file is not available in VIMtrek Producer therefore Lighting Analysis is not currently supported in Producer.

VIMtrek Producer does offer a series of lighting tools that allow you to modify the light affects in the VIM Model Scene.

These controls and settings allow you:

- specify the relative position of the Sun light source
- select a specific Skybox image that influences the global illumination of the scene
- the ability to turn specific light fixtures(identified by their Revit Lighting Fixture name) on or off

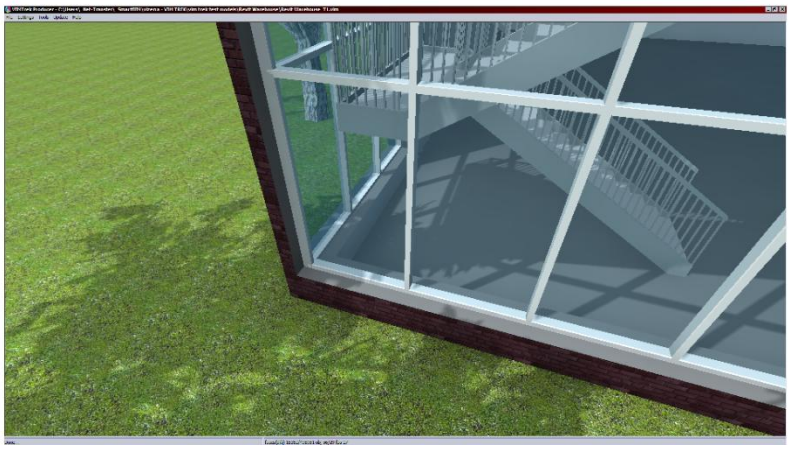
- generate Light Maps for developing a lighting style for the VIM Model Scene
- resolutions controls for multiple light settings used to improve the overall quality of the scene's lighting and shadows.

VIMtrek's lighting tools and setting are cover later in this manual under Tools – Sun Settings, Lights and Light Maps.

Producer's primary lighting sources Direct Sun Lighting (DSL), Ambient Cube, and Local Lights (simulated Revit Lighting Fixtures) processed with Producer's Global Illumination engine have been optimized to produce a highly visual and "live" immersive experience of the VIM Model Scene generated from a Revit project.

Sun Light Source

The Sun Settings features control the VIM Model Scene's Sun light source. The Sun light source generates both indirect lighting as well as Direct Sun Light (DSL). Dynamic and Static Objects generate Realtime Shadows from the DSL light source and Direct Sun Lighting is excluded in Ambient Maps

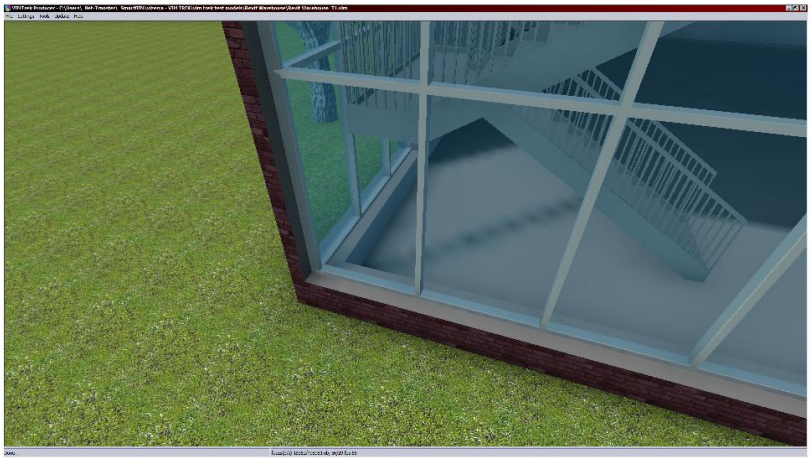


Ambient Map

Ambient Cube Light Source

Ambient Cube Properties:

- Lights uniformly from 6 sides – Top, Bottom, Left, Right , Front, Back.
- Is the Light Source for Dynamic Objects once a Light Map has been built for the scene.
- Does not cast shadows from Dynamic Objects once a Light Map has been built for the scene – see below.



Full Map

- The illumination effect of Ambient Cube is calculated in the same place as the calculation of Light Map Types.
- Is part of the VIM Models Scene applied Global Illumination.

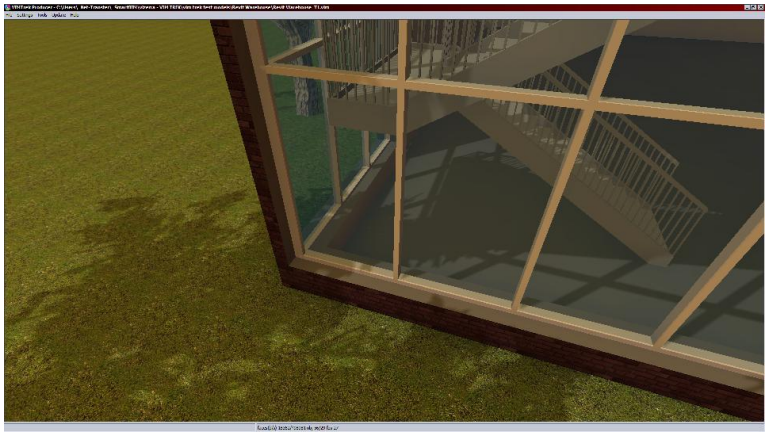
Local Lights Light Source(s)

Basically **Local Lights** light source refers to the VIM Model Scene lights simulated from their corresponding Revit Lighting Fixtures. The VIMtrek versions include Revit Lighting Fixtures Light Source properties such as Light Illuminance, Luminous Intensity, Initial Color Intensity, Spot Filed Angle and others.

For Local Lights Producer always generates a Full Map. Realtime Shadows from local lights (thousands of light beams) cannot be calculated in real-time due to current system limitations.

Global Illumination

- Ambient Cube lighting is part of Global Illumination, for each dynamic object it contains the light from 6 main sides.
- Global Illumination includes the affects to the Skybox setting with the scene's calculated Light Map – see below.



Ambient Map with Sun Setting Skybox set to Color – orange (Compare to Ambient Map image above).

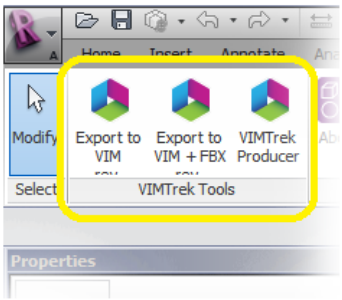
VIM Objects and Lighting

- Revit elements exported to VIM are divided into two classes: static objects and dynamic objects.
- Static Objects include Revit System Component Families such as Ceilings, Floors, Pads, Roofs, and Toposurface. The Stairs System Family is processed as a Dynamic Object.
- Dynamic Objects include: Revit Standard Component Families such as Casework, Doors, Entourage, Electrical, Furniture and Furniture Systems, Generic Models, Lighting Fixtures, Mechanical Equipment, Planting, Plumbing Fixtures, Railings, Stairs (exception), Specialty Equipment, Structural, and Windows.
- All VIMtrek Objects generate RealTime Shadows in **VIMtrek Producer** with the initial Sun Settings prior to a Light Map Type being added (calculated) for the VIM Model Scene.
- There are two types of Light Maps – Ambient Map type and Full Map type. Each Light Map Type has a different lighting effect (shadow generation) on the two classes of Object Types in VIM Model Scenes.
- Each Light Map Type can be generated (calculated with or without) Local Lights (see **Bake Local Lights** topic**)**. Local Lights are the simulated versions of the Revit Light Fixtures.
- Once a Light Map Type has be generated for a VIM Model Scene the Ambient Cube light source lights Dynamic Objects and the lighting effect of the Light Map Type illuminates the Static Objects.
- Ambient Map Type
    - Only Static Object types generate shadows (with or without **Baked Local Lights**)
    - **Bake Local Lights** when checked includes indirect lighting from the Sun light source as well as the full light from the Local Lights.
- Full Map Type
    - Only Static Objects generate shadows (with or without **Baked Local Lights**)
    - **Bake Local Lights** when checked uses only the full light from the Local Lights, indirect lighting from the Sun light source is not included.
- Only Static Objects are included in the Light Map calculation.

VIMtrek Tools

VIMtrek's Revit Add-In Tools Panel

The tools **Export to VIM, Export to VIM + FBX** and **VIM Trek Producer** are displayed in the VIMtrek Tools panel under the Revit ADD-Ins tab.



VIMtrek Tool Panel

NOTE: The VIMtrek Tools will not be active without a Revit project file being opened. Revit Views 3D Camera Views and Schedule Views will also prevent the VIMtrek tools from being active.

VIMtrek Exporter

Export to VIM

Export to VIM is the first icon on the left (see above). By picking it you start the process of exporting your Revit project model from the current Revit View to a .vim file. The .vim generated by the **Export to VIM** tool contains the VIM Model Scene. The .vim file is then opened in **VIMtrek Producer.**

Export to VIM + FBX can be used for exporting Revit model elements with complex material map orientations and aligning ceiling grids with lighting fixtures to vim. This option is only available for exporting the Revit project model from 3D parallel projection views – 3D camera views are not supported.

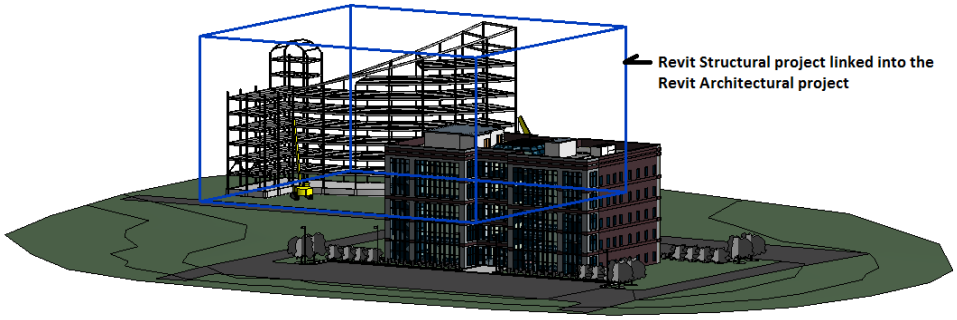
The FBX file produced along with the vim file during the **Export to VIM + FBX** process aids in managing the orientation and alignment of materials and ceiling grids in the VIM Model Scene. The file type created by the **Export to VIM + FBX** tool are .vim and .fbx [Autodesk®]. The fbx file is given the same file name as the vim file created at the same time. The fbx file cannot be opened directly in **VIMtrek Producer.** When you launch **VIMtrek Producer** just after using **Export to VIM + FBX** the .vim file will load as it is parsed against the .fbx file. Material and grid alignments are validated and adjusted during this loading process. To open a .vim file associated to a .fbx file in VIMtrek Producer use File > Open VIM + FBX and select the fbx file.

When you launch **VIMtrek Producer** from the Revit Add-Ins after creating the vim file with **Export to VIM** or **Export to VIM + FBX**, **VIMtrek Producer** will by default open the vim file just created.

Although vim files can be opened in **VIMtrek Viewer** without having been opened in **VIMtrek Producer** it ***is not recommended***. Opening the VIM model scene in **VIMtrek Producer** by default not only optimizes the model geometry but it also substitutes VIMtrek Plants that corresponds to each Revit plant in the project. If you open the vim file before it has been opened and saved in **VIMtrek Producer** the plants will be missing.

New Feature

VIMtrek Exporter now recognizes Revit links within the host Revit project. Both **Export to vim** and **Export to vim + fbx** exporting tools will export the Revit building elements in the host project file as well as the building elements in the linked Revit project files.



Linked Revit Structural project model in a Revit Architectural model

VIMtrek .vim file containing the linked Revit Structural model building objects

New Feature

Detail Level Setting Export: The visibility effects of the Revit View's Detail Level setting is now recognized by the VIMtrek Exporter. One example of how this works would be when the Revit View's Detail level is set to Course and a category of Revit elements are not visible due to the Detail Level setting, then they would not export to the vim file. In short, any element visibility turned off by lower Detail Level settings will not be exported from the Revit View to VIM. This is similar to using the Revit View's Temporary Hide to control which objects are exported to vim based on their visibility.

New Feature

Section Box Setting Export: The model scene exported to vim from a Revit 3D View with a Section Box enabled and cropping the scene on will now closely match the Revit model scene.

NOTE: If you export the model scene from a Revit 3D View where the Section Box crops the toposurface VIMtrek Producer's Terrain Creator will not be able to generate additional terrain in the VIM model scene. If the Revit View's Section Box is turned off and the View is re-exported the Terrain Creator can then be used.

Export to VIM Procedure

Exporting a Revit Building Information Model to a VIMtrek Visual Information Model is the same process in all Revit versions and supported releases.

- Open the Revit project.
- Set the appropriate View window current in Revit.

NOTE: The Revit View window set current in the Revit project can affect VIMtrek Tools and the Revit model elements exported to the vim model. If a 3D Camera View or a Schedule View is current then the VIMtrek Tools are not active. Other View Types in Revit will control which Revit model elements exported to the vim model. See Revit Model Elements Exported to VIM.

WARNING! If you Export to VIM while any object(s) are selected in the current Revit View, only those selected objects will be exported t the vim file.

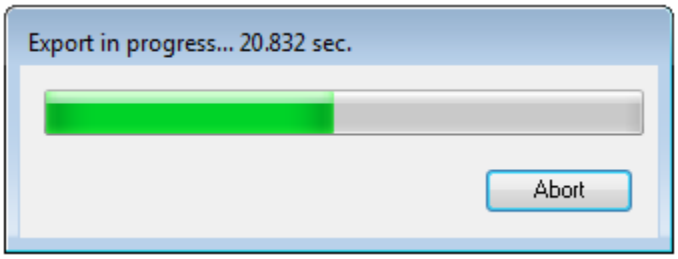
Process: Export to VIM, Export to VIM + FBX

- Go to the **Add-Ins** tab and in the VIMtrek Tool panel select the **Export to VIM** or the **Export to VIM + FBX** tool.

- In the **Save As** dialog navigate to the location where you want the vim model file (and fbx file) created and enter a name for the vim model file (.vim file type). Pick the **Save** button.

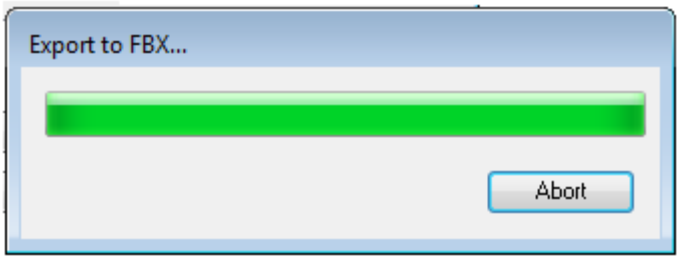
  NOTE: The fbx file created during the same process will by default have the same file name.

- The Progress Bas opens and dynamically displays the time of the exporting process.

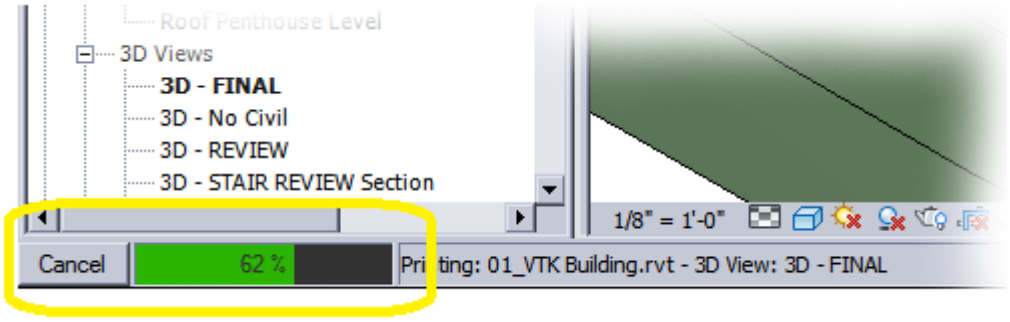


- The Progress Bar closes automatically when the export process is finished.

When using the **Export to VIM + FBX** option once the Export in progress completes the generation of the fbx file from Revit begins.



The status of this portion of the operation can be monitored in Revit's Status Bar.



See **VIMtrek Producer** for details about opening vim files generated with fbx files.

TIP!

Best Practices for Exporting a Revit project with multiple Revit Links.

- All circular Revit links should be removed in the Revit Link Manager.
- All unresolved links should be resolved or removed.
- All DWG links should be unloaded.
- Nested links should be kept to a minimum.
- The Host file and all Revit link files must be the saved in the current Revit version.
- Turn the visibility off of all not essential plants in the Revit View the project is being exported to vim (or +fbx) from.
- Turn the visibility off of all none essential lighting fixtures in the Revit View the project is being exported to vim (or +fbx) from.
- The Revit project file should have Purge Unused ran prior running the Export to vim (or +fbx).
- The Revit project should have Compact selected during Save ran prior to running the Export to vim (or +fbx).

Revit Views and Model Elements Exported to VIM

The View window set current in the Revit project can affect the VIMtrek Tools and can be used to control which Revit model elements are exported to the VIM model. See the chart below to see how Revit Views affect the VIMtrek Tools and exporting process.

NOTE: Revit View Templates and Filter settings are not currently recognized by **VIMtrek** Exporter.

Revit View Type	Export to VIM
3D Camera View	The VIMtrek Tools are not active.
Schedule View	The VIMtrek Tools are not active.
Floor Plans	Model elements within the extents of the view range will be exported to vim
Ceiling Plans	Model elements within the extents of the view range will be exported to vim
3D Views – axonometric	Model elements within the extents of the view range will be exported to vim
3D Views – axon w/Section Box	Model elements within the extents of the Section Box will be exported to vim
Elevations - Building	Model elements within the extents of the view range will be exported to vim
Elevations - Interior	Model elements within the extents of the view range will be exported to vim
Sections – Building	Model elements within the extents of the view range will be exported to vim
Sections – Wall	Model elements within the extents of the view range will be exported to vim
Detail	No model elements are exported to vim
Rendering	No model elements are exported to vim
Drafting	No model elements are exported to vim
Area Plan	Model elements within the extents of the view range will be exported to vim
Legends	No model elements are exported to vim
Schedule	The VIMtrek Tools are not active.
Sheet	No model elements are exported to vim
Walkthrough	The VIMtrek Tools are not active.
Family Editor	Cannot be Exported to VIM

Revit Views and VIMtrek Export options

Export to VIM + FBX is only available in axonometric (parallel projection/non-camera) type 3D Views.

In addition to using the current View in Revit to control which model elements are exported to VIM you can use the element selection methods in Revit to create specific selection sets. Once the selection set is made you can us Export to VIM to export just the selected Revit elements instead of the entire scene.

When using a Section Box to isolate an area within a 3D View some Revit System Families may extend beyond the boundaries of the Section Box when Exported to a VIM Model Scene.

Exporting to VIM and View Visibility Settings

Visibility settings in Revit can be used to control which elements in the Revit View are exported to the VIM Model Scene. Revit Families in the view with their visibility setting off will not be exported to vim. The visibility can be turned off using the Temporary Visibility Control, Visibility Graphic settings and Visibility Graphic View Overrides. Also worksets not loaded will not be exported to vim.

WARNING! Although you can open a vim file exported from Revit using Export to VIM in **VIMtrek Viewer** before it has been opened and saved in **VIMtrek Producer** certain Revit families will not be in the vim file. In addition to optimizing the VIM Model Scene geometry from Revit VIMtrek Producer also substitutes enhanced versions of the Revit plants in the scene.

VIMtrek Producer

VIMtrek Producer is the VIMtrek program used for optimizing and modifying VIM Model Scene environmental settings which can then to be exported for viewing on PC, MAC and Web platforms. **VIMtrek Producer** has a series of Pulldown Menus used for selecting settings, features and tools which can be used to modify Producer's display settings and the VIM Model Scene's topography and lighting settings.

VIMtrek Producer Overview

The primary function of **VIMtrek Producer** is to provide the necessary tools to optimize the VIM Model Scene for shared design review in **VIMtrek Viewer**. To achieve this **VIMtrek Producer** automatically optimizes the model geometry in the scene as well as substitutes enhanced VIM Plants for each Revit Plant in the scene. Beyond the automatic optimization feature **VIMtrek Producer** also provides settings and tools for enhancing or "producing" the VIM Model Scene for viewing in **VIMtrek Viewer** or a major web browser. Settings are provided that can be used to maximize the display performance of **VIMtrek Producer** while "producing" the VIMtrek Viewer file.

To maximize the performance of the display in **VIMtrek Producer** while "producing" the VIM Model Scene environmental settings **VIMtrek offers** a series of View Option and Navigation settings. For example you can turn off Ambient Occlusion or Realtime Shadows to improve the display performance while navigating around the VIM Model Scene. You can also tweak the speed of you navigation controls with specific navigation settings such as Observer Speed and Rotation Speed. To get your orientation in

the VIM Model Scene you can pick Go To Zero, Go To Center or Go To Center – Zoom buttons in the Navigation dialog.

Tools provided for enhancing the environment of the VIM Model Scene for viewing in **VIMtrek Viewer** include Sun Settings, Object visibility, Light (source) visibility and the generation of Light Maps. Sun Settings include options such as latitude, (sun to model scene) rotation, date and time.

After the **Export to VIM** operation is finished **VIMtrek Producer** is launched and the VIM Model Scene is loaded**.** If a vim file other than the one previously exported is needed use the **File** pulldown menu **Open** tool to browse to the required vim file.

If **Export to VIM + FBX** was used to produce the VIM Model Scene use File pulldown menu, Open VIM + FBX and select the vim file. The vim file will be loaded while being parsed against the fbx file to insure correct material mapping and alignment.

In **VIMtrek Producer** make any required changes to the VIMtrek model scene, save the file, then export the vim file to your preferred viewing platform.

See VIMtrek Producer Pulldown Menus below for more detail information.

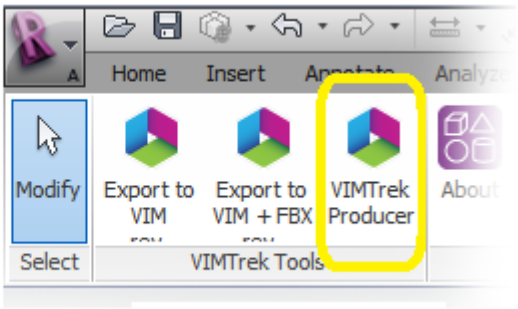
See VIMtrek Producer Settings, Navigation and Tools for the tools and processes you can use to modify the VIM model's environment.

See VIMtrek Model Viewing Platforms for your options on sharing and viewing your VIMtrek model.

Starting VIMtrek Producer

VIMtrek Producer can be launched from your Desktop icon or from the **VIMtrek Tools** panel under the Revit ADD-Ins tab**.**

Deskto icon



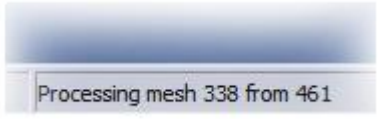
Revit Add-Ins tab

VIMtrek Producer will be started and the last saved VIM file will be loaded.

VIMtrek Producer Status Bar

As the VIM file is being loaded into Producer you can see the vim file name and path to the vim file displayed in the Status Bar at the bottom of the Producer window.

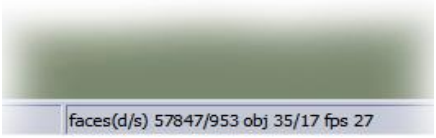
Next to the File Loading display bar specific information about the loading of the VIM Model Scene is displayed.



Displayed at the right end of the Status Bar is a Progress Bar that dynamically displays the loading progress of the vim file.

Once the vim file – VIM Model Scene – has finished loading the Processing Bar displays:

- Polygonal (mesh) face count for VIM Dynamic objects and VIM Static objects (d/s)
- VIM Object count (Dynamic number/Static number)
- Frames Per Second (fps) performance indicator – the higher the number the smoother the navigation through the scene.



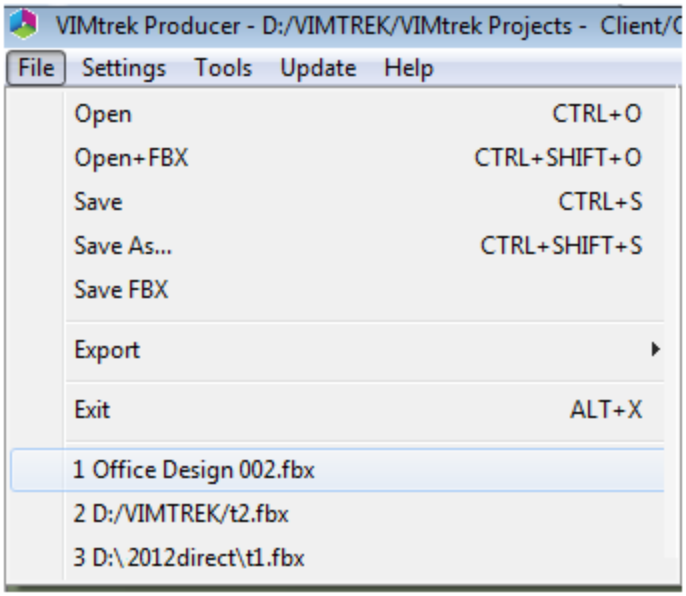
VIMtrek Producer Default View Orientation

When the VIM Model Scene is first opened in **VIMtrek Producer** the default view is generally the same view orientation as the Revit View the scene was exported from.

VIMtrek Producer Settings, Navigation and Tools

All actions, processes, and tools available in **VIMtrek Producer** are accessed from the series of Pulldown Menus.

VIMtrek Producer Pulldown Menus



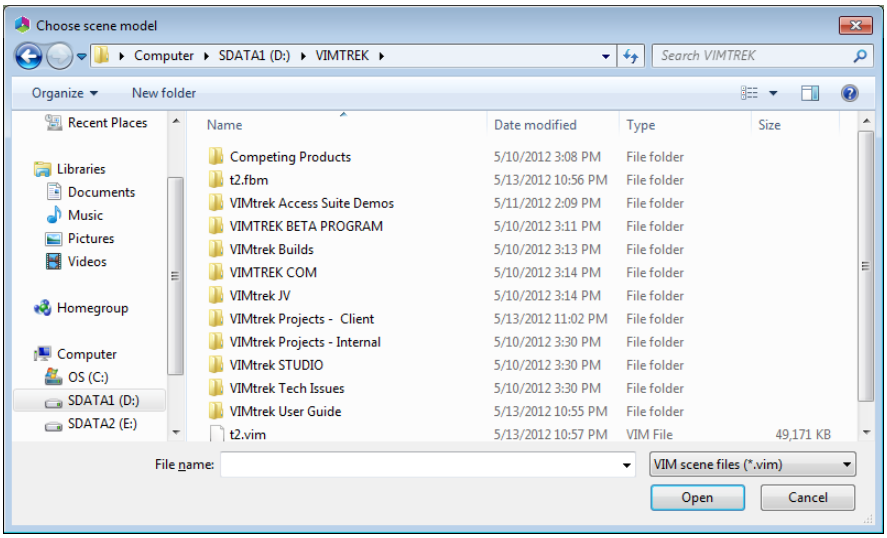
File Pulldown Menu

The ***File*** pulldown section contains the following items: ***Open, Open + FBX, Save, Save As…, Save FBX, Export*** and ***Exit***. The keyboard shortcuts for these commands are also displayed.

New Feature

The **File** menu displays a Recent File History list.

Open (CTRL+O)

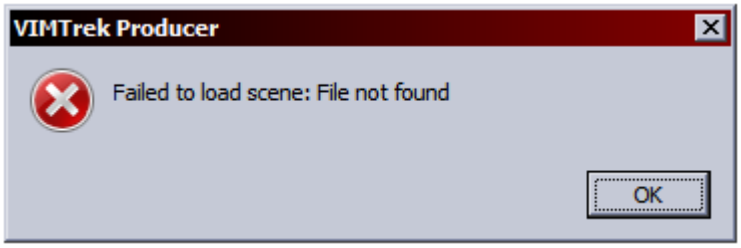


Picking ***Open*** launches the Choose Scene Model dialog. Use this dialog to navigate to the VIM Model Scene .vim file, select and open it. You can select the VIM file just exported from Revit or any VIM file created by Producer during a previous session.

Open+FBX (CTRL+SHIFT+O)

Picking ***Open+FBX*** launches the Choose Scene Model dialog with the file type set .fbx. Use this dialog to navigate to the .fbx file exported with the VIM Model Scene .vim file, select and open it. You can select the .fbx file just exported from Revit or any fbx file created by Producer during a previous session.

WARNING: If the original .vim file that was created during the Export to VIM + FBX is moved or deleted or renamed Open+FBX will fail rto load the VIM Model Scene into Producer (see below).



Save (CTRL+S)

Pick the ***Save*** option to save the current VIMtrek Producer .vim file with the existing light, position and Sun settings.

Save As (CTRL+SHIFT+S)

Pick the ***Save As*** option to save the current VIMtrek Producer VIM file with the light, position and Sun settings as a new .vim file with the current light, position and Sun settings.

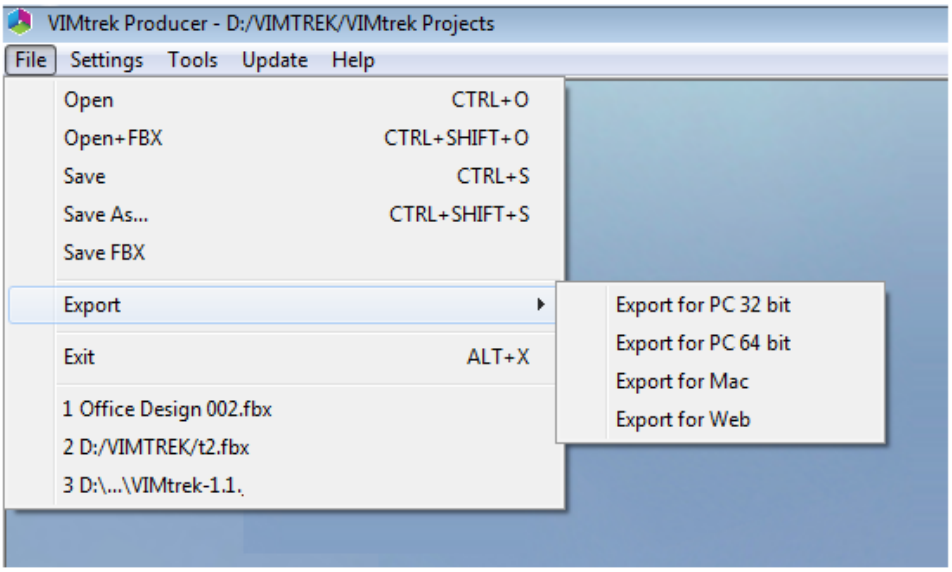
New Feature

Save FBX

Pick the ***Save FBX*** option to save the current VIMtrek Producer VIM file as an dependent FBX file. This special **Save** feature converts recognized Mental Ray materials from the Revit project into the standard

Autodesk FBX format and saves it with the scene objects into a new FBX file. This independent FBX file has the materials embedded where they will be accessible from other programs which work with FBX files such as Autodesk's 3D Studio MAX.

NOTE: Autodesk FBX format embeds traditional material data such as Diffuse Color, Specular Amount, Transparency and so on.



Export

The ***Export*** section lets you choose the platform you want to use for viewing the "produced" VIM Model Scene.

New Feature

VIMtrek Producer allows you export to PC (Windows), MAC and Web. For viewing on PC or MAC the *Export* tool generates an executable file (.exe for PC and .app for MAC) that contains the VIMtrek Viewer program with the VIM Model Scene. For viewing the VIM Model Scene in a web browser a series of files are created in a user defined folder. The scene is launched in the web browser from an html file. See VIMtrek Model Viewing Platforms for more details.

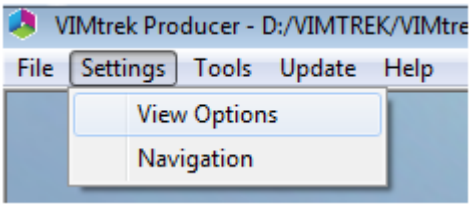
The **Export for PC** now has two options**: Export to PC for 32 bit** is optimized for Windows 32 bit systems and **Export to PC for 64 bit** is optimized for Windows 64 bit systems.

Exit (ALT+X)

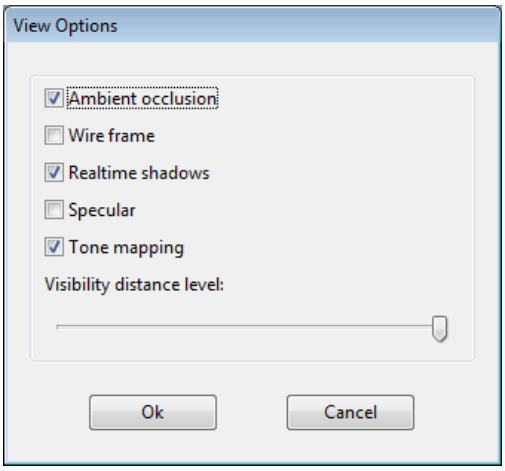
Exit function allows you to quit **VIMtrek Producer**. If you haven't saved your changes, you will be prompted to save them.

Settings Pulldown Menu

The ***Settings*** pulldown contains two features, ***View Options*** and ***Navigation***.

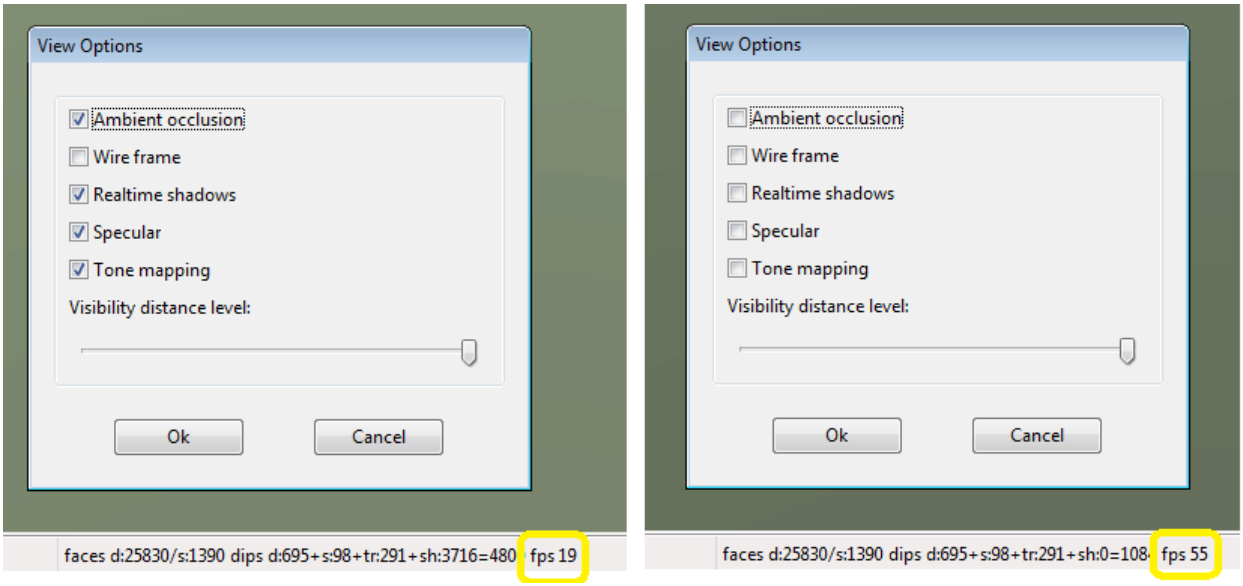


View Options



In the **View Options** dialog (see above) the display options available contain check box settings and a slider control. These display settings can be used to adjust the VIM Model Scene's displayed appearance in **VIMtrek Producer .** These rendered scene enhancements are used primarily to improve display performance while navigating through a complex VIM Model Scene. These setting do not affect the quality of scene when it is exported for viewing in **VIMtrek Viewer**.

In addition to visual changes to the display of the VIM Model Scene in Producer the affect on the performance of the View Options settings can be monitored on the Producer's Status Bar. The center section of the Status Bar displays the model scene's Display Processing information which includes monitoring the Frames Per Second (fps) rating. The higher the number the smoother or better performing the display will be while navigating through the scene (see below).



In the example above with the four display View options unchecked the scene can be Realtime-Rendered at 55frames per second. The resulting display quality may be slightly diminished but the navigation through the scene will be smoother.

NOTE: the settings checked when you close your session of Producer will be the default settings when you reopen Producer.

Ambient occlusion

In general terms **Ambient occlusion** is a shading method used in 3D computer graphics which helps add realism to model scenes by taking into account the attenuation of light due to the proximity of hidden and adjacent surfaces. **Ambient occlusion** attempts to approximate the way light radiates in real life, especially off what are normally considered non-reflective surfaces. Enabling the **Ambient occlusion** feature makes the light shading of the VIM Model Scene display in Producer with a more realistic style. The **Ambient Occlusion** setting in Producer does not migrate to the VIMtrek Viewer export. Ambient Occlusion is active by default in VIMtrek Viewer. Turning Ambient Occlusion off in Producer can improve the display performance in complex VIM Model Scenes.

See the **VIMtrek Producer** scene examples below.

Scene with Ambient Occlusion, Realtime Shadows, Specular, and Tone Mapping View options on.

Scene with only Ambient Occlusion unchecked

(It's most apparent around the elevator door and where the walls meet)

The **Realtime Shadow** feature enables shadows to be rendered in the scene realtime as you navigate around the scene. **Realtime Shadows** are rendered based on the **Sun Settings** properties and the values set in **Light Map** settings.

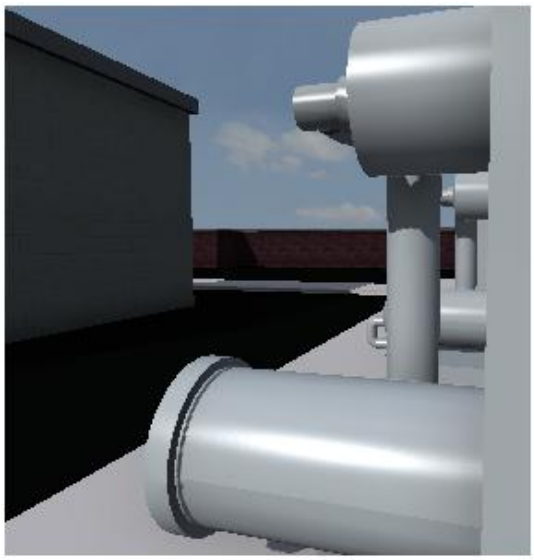
Scene with only Realtime Shadows unchecked

Sun Settings properties will affect **Realtime Shadow's** direction and "length" while the rendered quality of the shadows can be adjusted by the **Light Map** settings.

The **Realtime Shadow** setting in Producer does not migrate to VIMtrek Viewer. **Realtime Shadow** is active by default in VIMtrek Viewer. Turning **Realtime Shadow** off in Producer can improve the display performance in complex VIM Model Scenes.

Specular

The default setting for the Specular is on. This Producer View Option allows reflective light from a direct light source such as the Sun to be rendered in the Producer scene.



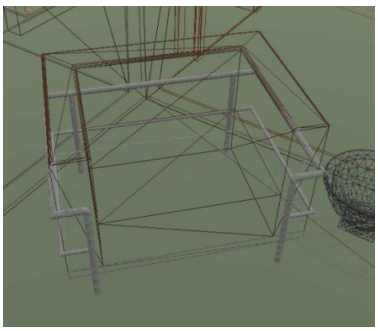
Specular On

Specular Off

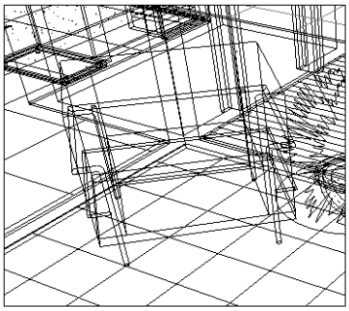
The images above show examples of the Specular setting on and off. Turning the **Specular** setting off in Producer can improve the display performance of large complex VIM Model Scenes in Producer and the setting does not migrate to **VIMtrek Viewer**. **Specular** is active by default in VIMtrek Viewer.

Wireframe

Enabling the **Wireframe** mode allows you to see the scene displayed as a lined "wire frame" object surfaces. The surfaces are not rendered as solid surfaces (filled polygons) with material properties. The model scene in the Wireframe mode displays the object's edges as lines and the modeled surfaces are displayed as polygonal facets. This display style is slightly different than Revit Wireframe style. See examples below.



VIMtrek Producer Wireframe

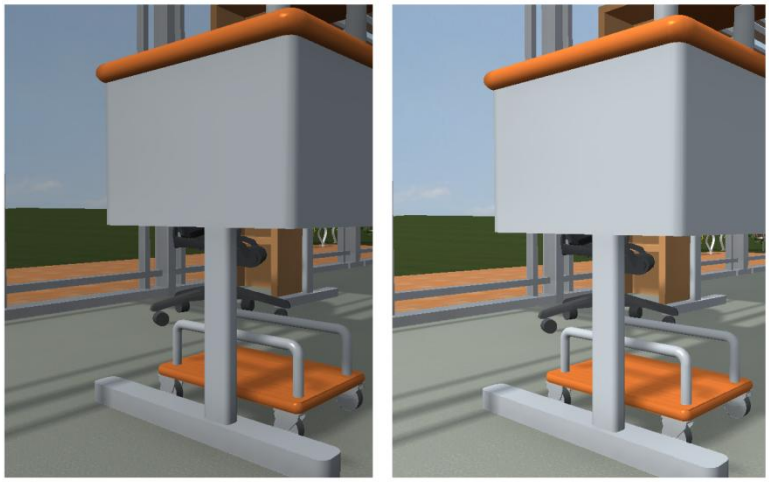


Revit Wireframe Display Style

Tone Mapping

In the context of scene rendering Tone mapping refers to the technique used to map colors and calculated light intensity from the highest dynamic range to the lowest dynamic range displayed in the scene. Within this "mapped" range the Tone Mapping settings can be used to adjust the overall lightness and contrast of the model scene (see below).

The **Tone Mapping** setting in Producer does not migrate to VIMtrek Viewer. **Tone Mapping** is active by default in VIMtrek Viewer. Turning **Tone Mapping** off in Producer can improve the display performance in complex VIM Model Scenes.



Tone Mapping On ***Tone Mapping Off***

Navigation

Navigation through the VIM Model Scene in **Producer** and **Viewer** is accomplished by using a combination of keyboard keys and the mouse. The mouse is used to control the direction you look around the VIM model scene. A set of keys on the keyboard controls the direction of movement relative to the direction you are looking.

Use the image below as a reference.

Reference image for Navigating through the Vim scene

Mouse Control – Viewing Direction

As an observer in the VIM model scene you will want to look around the scene or look in the direction you want to move. In **Producer** when you hold down either the left mouse button or the right mouse button and move the mouse the direction you are looking changes. If you move the mouse to the left your viewing direction looks to the left. If you move the mouse to the right your viewing direction looks to the right, and so on.

Keyboard Keys – Motion Through the VIM Scene

Keyboard Keys controls the motion or movement through the VIM scene. The direction of movement is always relative to the direction you are looking in the scene – which is controlled by the mouse.

The W/A/S/D keyboard keys controls your direction of movement through the scene. Use the image above as a reference.

W – holding the W key moves you in a forward direction relative to which way you are looking. In the scene view above depressing the W key would move you straight ahead towards the patio just outside the curtain wall.

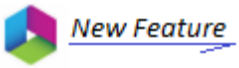
S – holding the **S** key moves you in a reverse (backwards) direction relative to your viewing direction.

A – holding the **A** key moves you to the left, perpendicular to your viewing direction.

D – holding the **D** key moves you to the right, perpendicular to your viewing direction.

These movement or motion keys can be used in combination so you can easily move in oblique directions relative to the direction you are looking. For example, relative to the view above if you held down the **W** and **A** key together you would move off towards the back of the building – the shaded side of the building just beyond the tree in the foreground.

The Direction keys on the keyboard can be used instead of the W-A-S-D keys. Their control of the direction of movement relative to the viewing direction corresponds to the keys' direction arrow.



Navigation Keys <Shift>, E and Q.

Holding the <Shift> key while navigating in **Producer** will increase the speed by a factor of 5 times. This matches the same function of the <Shift> key in **Viewer**.

Holding the **E** key while navigating in **Producer** will move you up relative to your viewing direction.

Holding the **Q** key while navigating in **Producer** will move you down relative to your viewing direction.

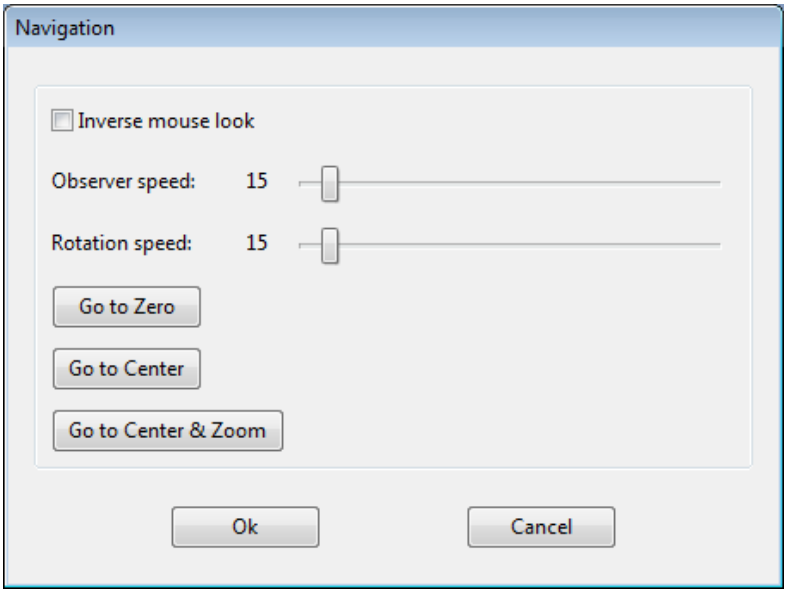
Navigation Settings

The settings in the Navigation dialog allows you to set the behavior of the view relative to the mouse, the sensitivity of the keyboard keys as they control movement in the model scene, the sensitivity of the mouse in controlling the viewing direction in the scene and current view displayed in the VIM scene.

Inverse mouse look: Checking this box changes the way your viewing direction changes relative to the movement of your mouse. The change primarily affects looking up or down. With **Inverse mouse look** checked when you move your mouse upwards your viewing direction looks downwards – the inverse direction relative to the movement of the mouse. When you move your mouse downwards your viewing direction looks upwards.

Observer speed: This slider controls the speed you move through the scene when one (or a combination) of the keyboard keys controlling movement is depressed. The lower the number (slider to the left) the slower the speed you move through the scene when a key is held down. The higher the number (slider to the right) the faster you move through the scene when a key is held down.

Rotation speed: This slider controls the sensitivity of the mouse's control on the viewing direction in the VIM scene. The lower the number (slider to the left) the less the view direction changes with the movement of the mouse. The higher the number (slider to the right) the greater the view direction in the Vim scene changes with the movement of the mouse.



Go to Zero: Zooms you to the Model Scene's base point while maintaining the current view direction. This point corresponds to the Revit project's base point.

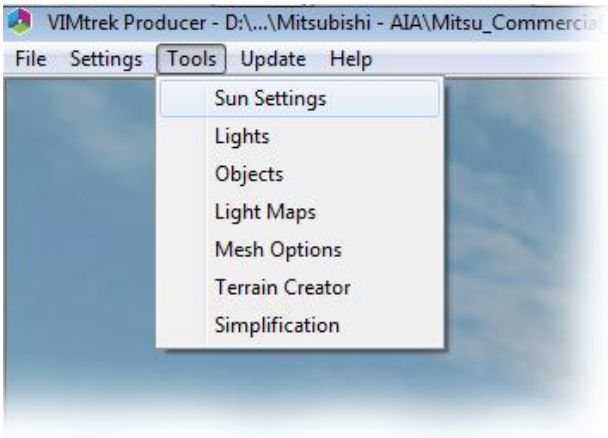
Go to Center: Zooms you to the center of the extents of the Model Scene while maintaining the current view direction.

New Feature

Go to Center & Zoom: Centers the model in your current view and zooms out to the extents of the model.

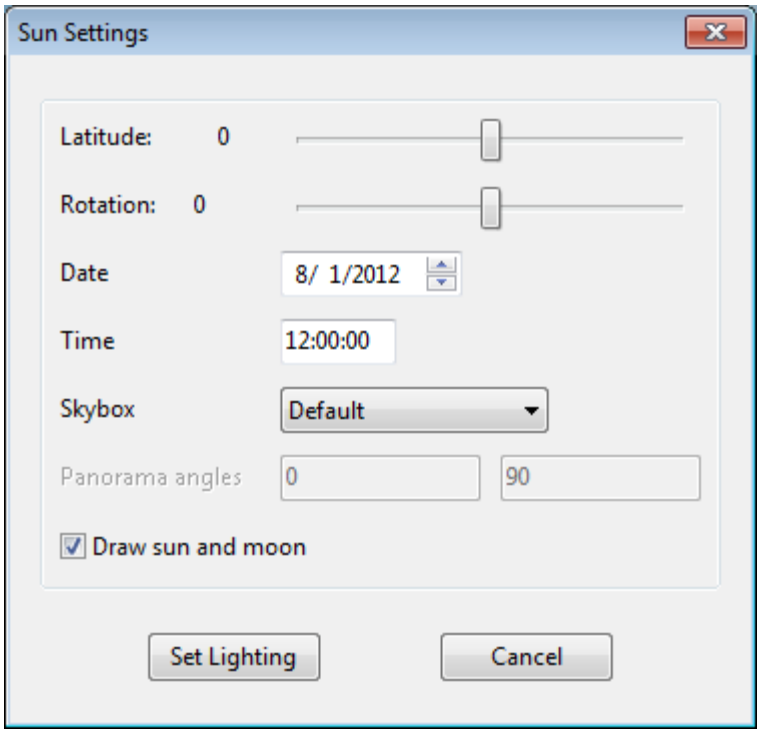
Tools

The Tools section contains the following items: Sun Settings, Lights, Objects, Light Maps, Mesh Options, Terrain Creator and Simplification.



Sun Settings

The features in **Sun Settings** allows you to set the location and orientation of the VIM Model Scene as well as specify a specific date and time for the event. There are 9 predefined sky styles that can be applied t the scene as well as specifying and applying a solid color. The sky styles – or Skyboxes – are included in the in the global illumination calculations when Light Maps are being generated. The Draw Sun and Moon setting generates a 'virtual sun' in the model scene's sky and will be positioned based on the Latitude, Rotation, Date and Time setting.



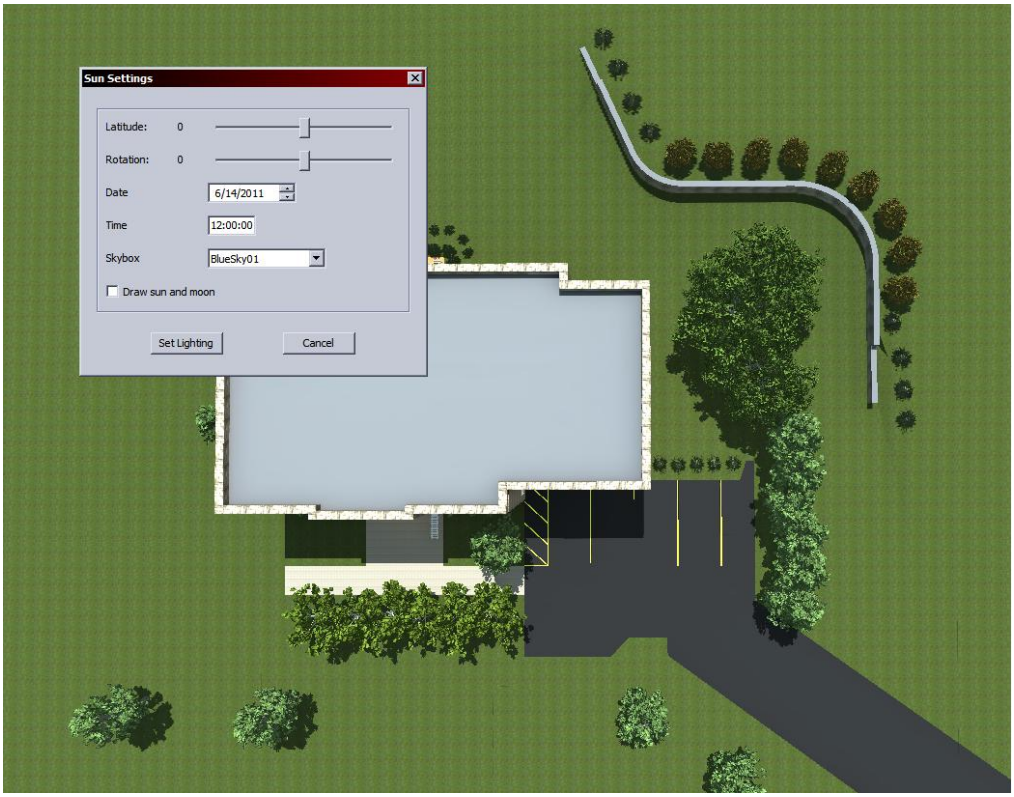
The **Sun Settings** dialog allows you to set the VIM Model Scene's Latitude, its Rotation (the projects relative orientation to compass "North"), and the Date and Time of the event.

NOTE: By default when a Revit project with its Project Location set is Exported to VIM VIMtrek Producer will ready that information and apply it to the Latitude and Rotation settings.

Latitude represents the latitude of the VIM Model Scene on Earth. The Slider allows you to adjust the angle along the latitude radius of the earth. Zero degrees places the scene on the equator. Positive degrees moves the scene north from the equator and negative degrees moves the scene south of the equator.

Rotation adjusts the VIM Model Scene's relative orientation to 'scene North'. The scene's relative orientation can be rotated 180 degrees clockwise (positive angle) or 180 degrees counter-clockwise. The resulting affect of rotating the orientation of the scene is to establish the correct position of the Sun relative to the scene physical location. In Producer changing the Rotation angle actually rotates the skybox in the opposite direction of the angle change resulting in the same effect.

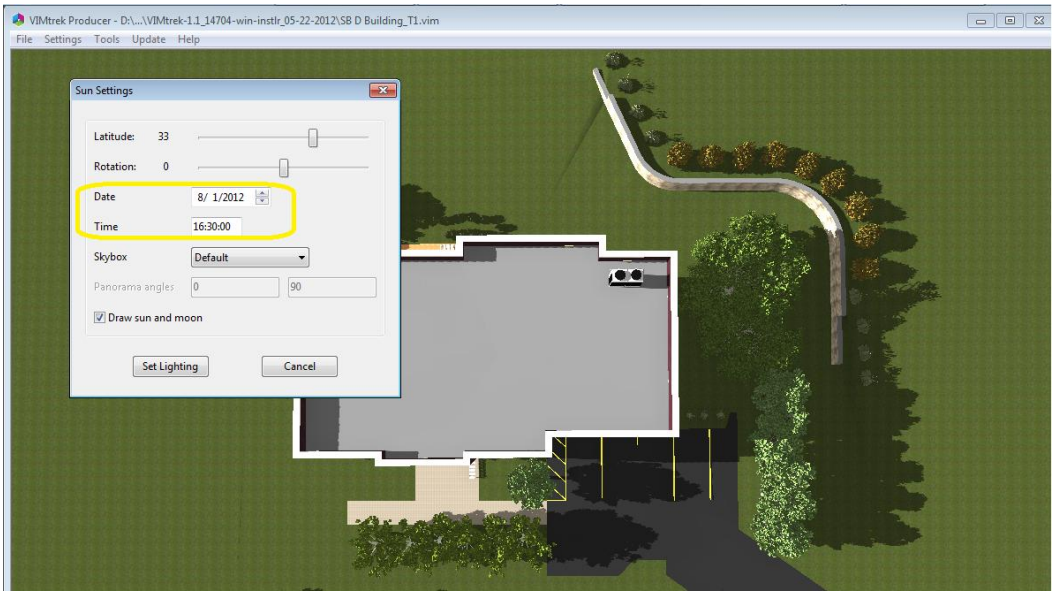
Frequently a modeled building defaults the orientation of the building to the model scene's North. **Sun Setting's** Rotation setting allows that correct that in the VIM Model Scene. The **Rotation** settings made in **VIMtrek Producer's Sun Settings** will export to the **VIMtrek Viewer** VIM Model Scene. See ***Sun Settings Reference – Rotation*** below.



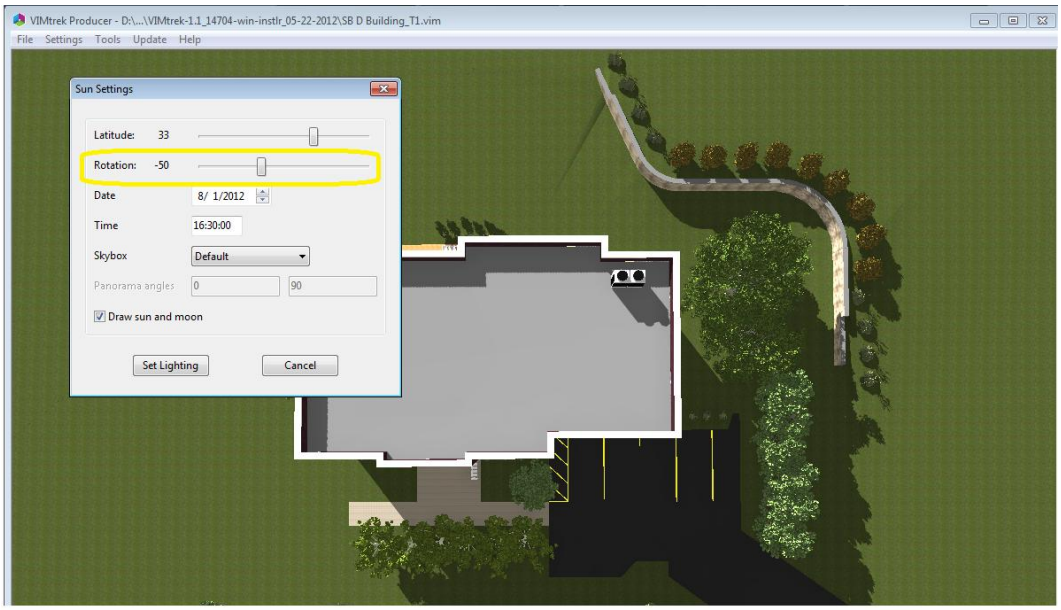
Sun Settings Reference - Default

Date and **Time** settings are the properties which determine the position of the Sun in the VIM Model Scene sky. **Date** affects the angle of the VIM Model Scene's 'Earth Axis" to the Sun. **Time** sets the VIM Model Scene's angle the Sun relative to its rotation around the 'Earth Axis'.

Date and **Time** settings made in **VIMtrek Producer** migrate to the **VIMtrek Viewer** VIM Model Scene.

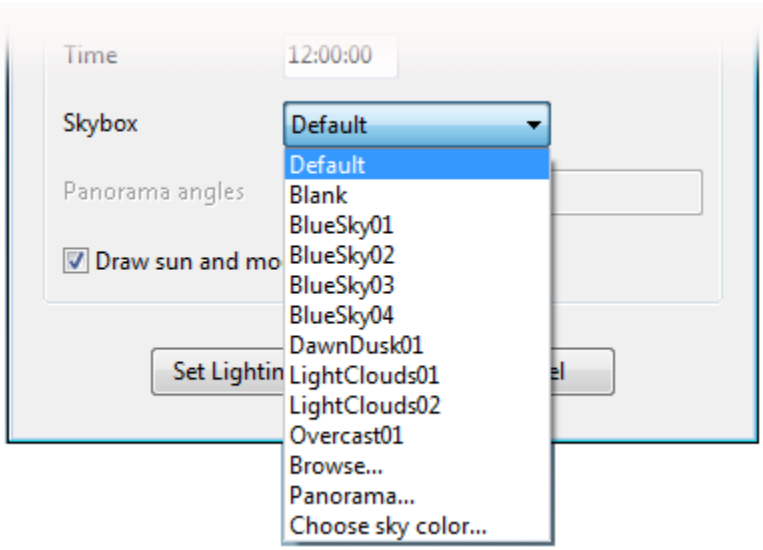


Sun Settings Reference – Date and Time



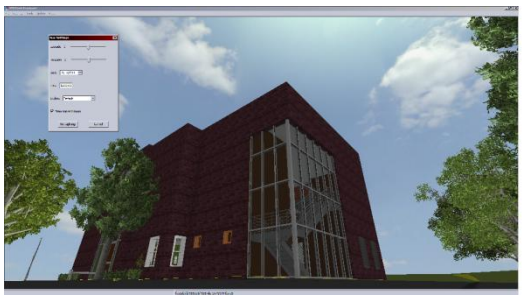
Sun Settings Reference – Rotation

Sky Box changes the Sky image mapped to the model scene's Sky Box.

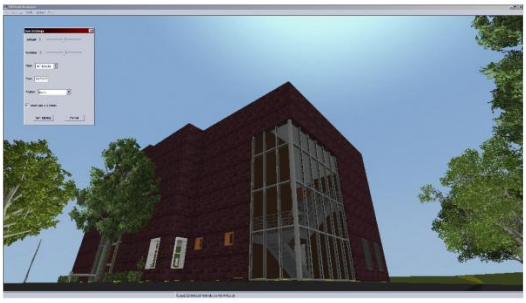


The Skybox setting has an options drop-down list that includes several predefined Skybox maps as well as the option to Browse and load a custom map or to choose a sky color.

Skybox Predefined Maps



Default

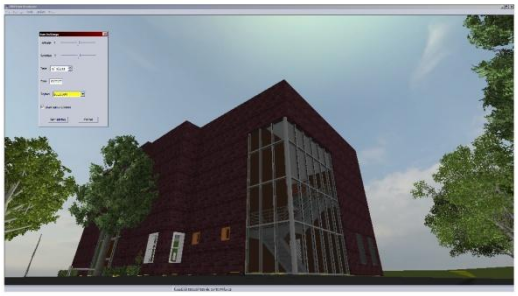


Blank

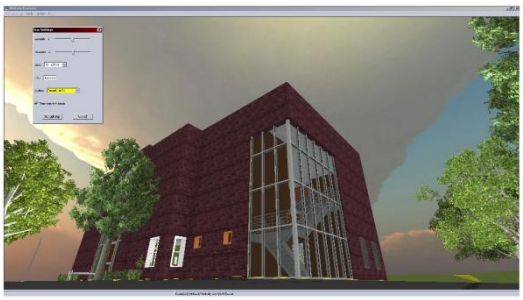
BlueSky01

BlueSky02

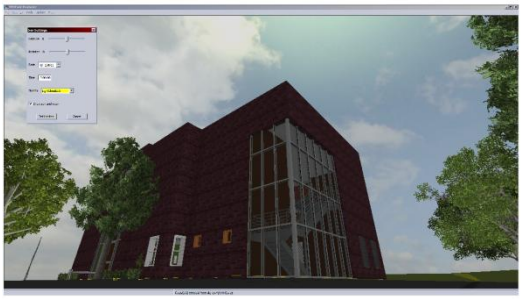
BlueSky03



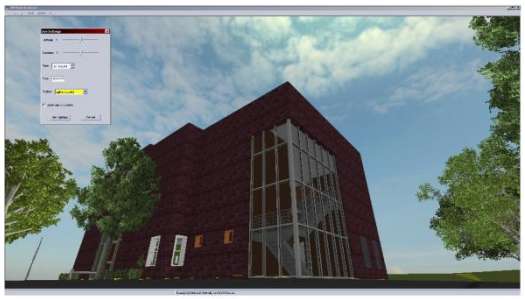
BlueSky04



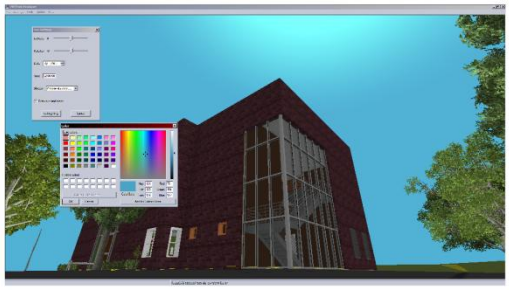
DawnDuck01



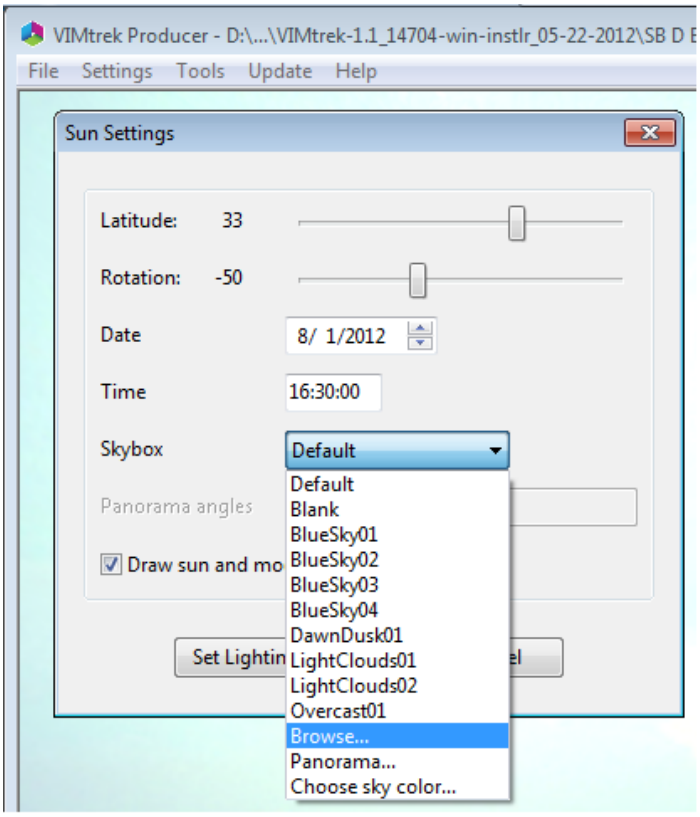
LightClouds01

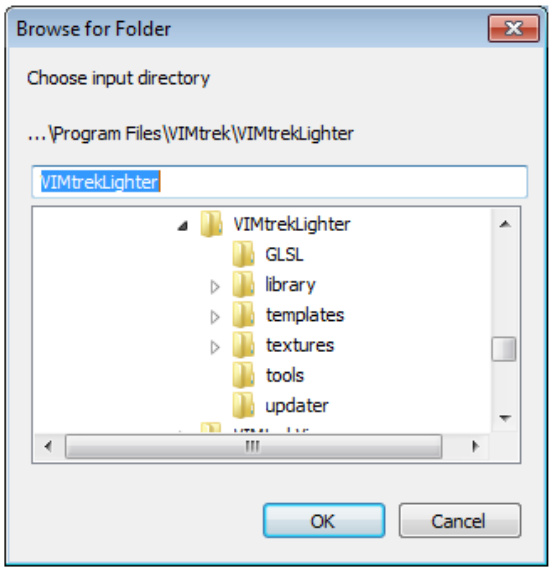


LightClouds02



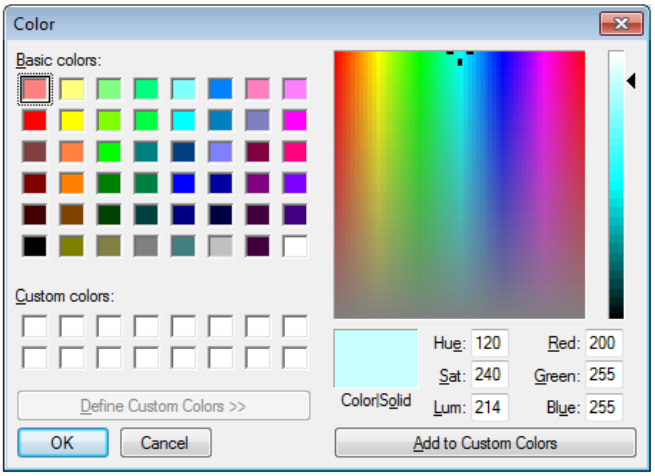
Color





Browsing for a custom Skybox image.

Custom Skybox images developed for the Unity3D gaming environment can be used in VIMtrek Producer. Once the Skybox image has been created or download you can use the Browse option to navigate to the image and have it applied to Producer's Skybox.

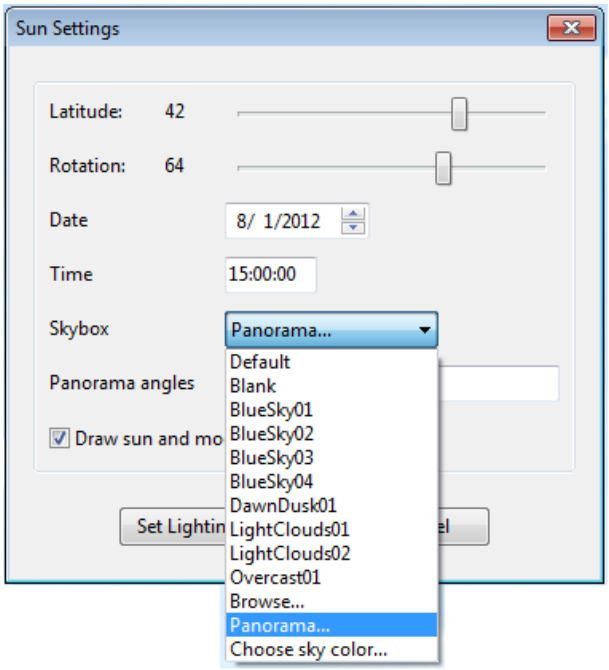


Selecting the Sky color for the Skybox

New Feature

Skybox Panorama Feature

You can load a panoramic picture "around" your vim model scene. It must be a full 360 degree panoramic image. After selecting the panorama image you can adjust the vertical resolution using the combination of the Upper and Lower Panoramic angle settings.



Process for Applying a Panorama image

- Go to the Sun Settings dialog, select Panorama in the Skybox

- In the Choose Panorama Image dialog select the panorama image for the Skybox
- In the Sun Settings dialog pick the Set Lighting button to apply the image
- Return to the Sun Setting dialog and based on the default mapping of the panorama image make adjustments using the Panorama Angles
- Select Set Lighting to update the panorama image's vertical orientation

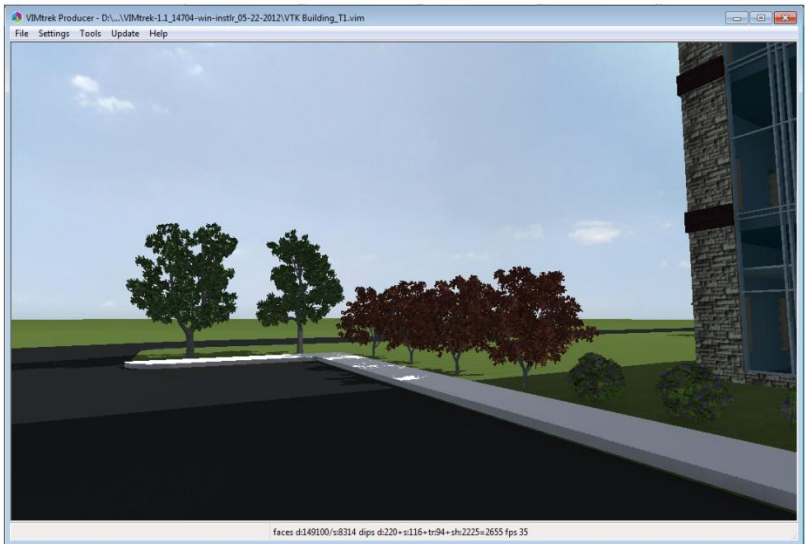
The combination of the Panoramic angles can be used to adjust the overall horizontal position of the panoramic image and each angle can be used to adjust the upper and lower polar angle of the image.

The first Panorama angle adjusts the lower angle of the image. A negative angle 'stretches' the lower portion of the image downward and a positive angle 'compresses' it upwards.

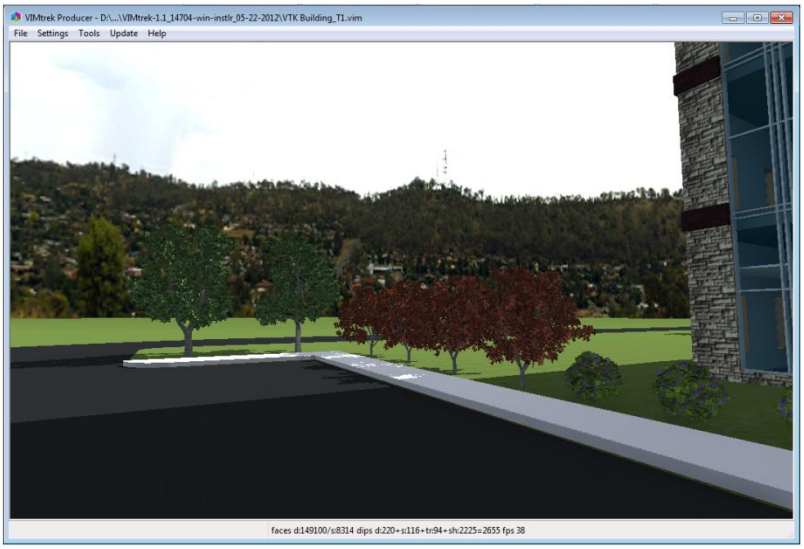
The second Panorama angle adjusts the upper angle. A negative angle 'compresses' the upper portion of the image downward and a positive angle 'stretches' it upwards.

The resulting affect can be either a compression of the relative portion of the image or an expansion (stretching) of the relative portion of the image. Experimenting with different angles is recommended to achieve the desired effect.

NOTE: After saving the VIM Model Scene the panorama converts to a Skybox image and the Panoramic settings will no longer apply.



VIM Model Scene without Panorama Skybox image

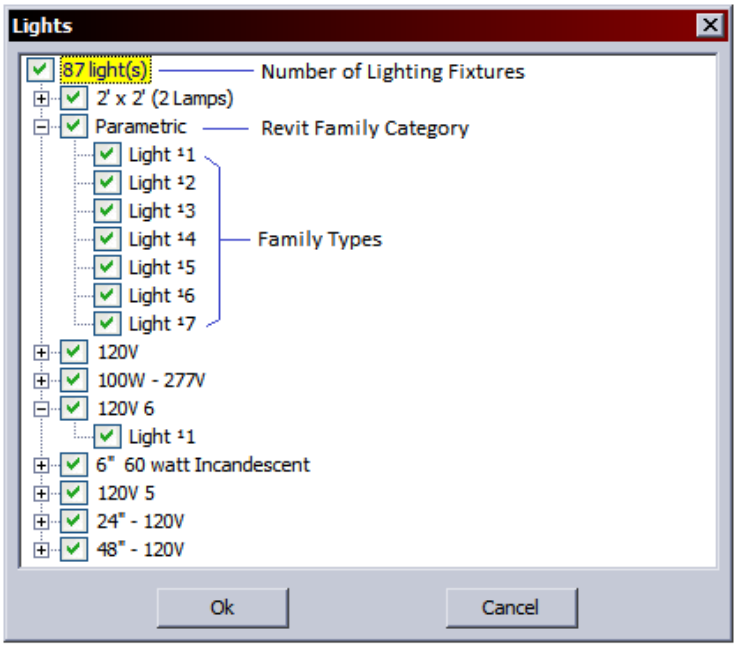


VIM Model Scene with Panorama Skybox image

Set Lighting

The **Set Lighting** button starts the calculation process and applies the Sun Setting properties to the VIM Model Scene. All the settings in the Sun Setting feature are migrated to the **VIMtrek Viewer** VIM Model Scene.

Lights (Local Lights)

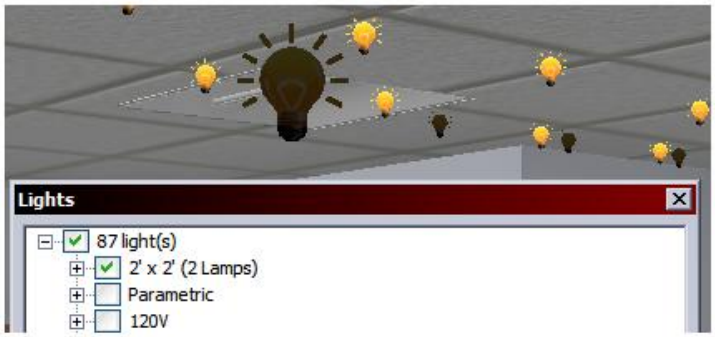


When the Lights tool is selected the Lights window opens displaying a list of all the Revit Lighting Fixtures simulated in the VIM Model Scene environment. The total number of Lighting Fixtures in the scene is listed at the top of the Lighting Tree List (see above – 87 lights).

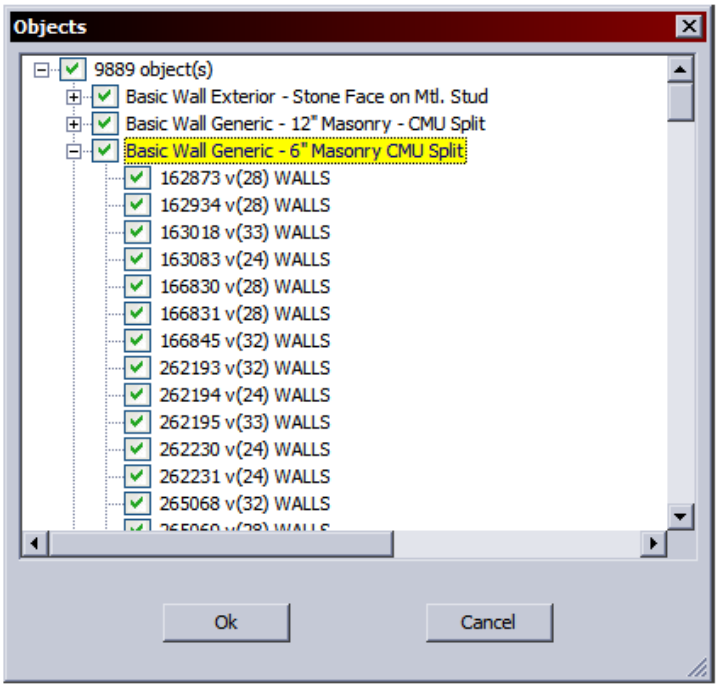
The Light List Tree is organized by the Revit Lighting Fixture Family Category and then by Types within that Family.

The check box next to each light type can be used to turn each light on (checked) or off (unchecked).

While the Lights List window is opened the virtual light source for each light is displayed in the scene. The on/off state of each light is indicated by the color of the light source 'bulb" (see below).



Objects



The Objects list can be used to turn off the visibility of or delete objects in the VIM model scene. The objects are the VIM version of Revit's building elements exported to vim. The visibility settings set here are maintained when the VIM model scene is exported for viewing in VIMtrek Viewer.

CAUTION: ALL THE OBJECTS UNCHECKED WILL BE DELETED FROM THE MODEL SCENE IF PRODUCER IS CLOSED WHILE THEY ARE UNCHECKED. SAVING THE VIM MODEL SCENE WITH OBJECTS UNCHECKED WILL NOT DELETE THOSE OBJECTS; THEIR VISIBILITY CAN BE TURNED BACK ON BEFORE THE MODEL SCENE IN PRODUCER IS CLOSED.

The time it takes for the Objects list to open is determined by the number of objects in the model scene.

When the Objects tool is selected the Objects window opens displaying a list of all the model objects in the VIM Model Scene environment. The total number of objects in the scene is listed at the top of the Object list (see above – 9889 objects). The number of objects in the scene will determine how long it takes the Objects window to open.

Once the Objects window is open you can use the check boxes next to the objects to turn off their visibility. Objects can be turned off by their Object Category or by their individual listing. The 6 digit number in their individual listing corresponds to their Revit Element ID number.

NOTE: The visibility of lighting fixtures being turned off only turns off the display of the geometry (physical) lighting fixture. The light source is still present in the VIM model scene and will be included when a Light Map Calculation is run. See Light Maps for additional information.

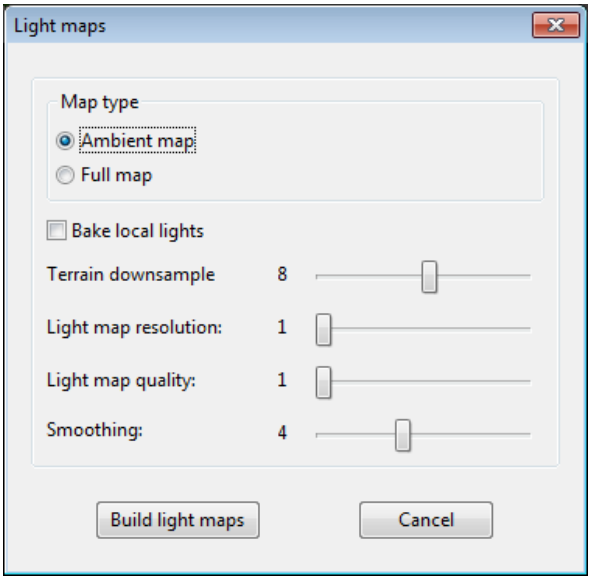
Light Maps

Light Maps Overview

Light Maps Types calculated will be either an Ambient Map type or a Full Map type. The Map Type selected will have significant and specific lighting effects on the objects in the VIM Model Scene. The resulting effect will be different in as it is applied to Dynamic Object types and Static Object types. Only Static Objects are included in a Light Map calculation. Light Maps, Ambient Cube illumination and Global Illumination are calculated simultaneously. Once a Light Map Type has been calculated in a scene it cannot be deleted from the scene.

RealTime shadows are generated from ONE source, it is DSL 'Sun' in the VIM Model Scene. This rendering process generates very accurate shadows from both static and dynamic objects.

The **Light Maps** dialog window allows you to make light maps for the scene.



Map Type

Ambient Map: Ambient Map – includes in the Light Map calculation all (full) light sources without the effects of direct lighting (including the Sun light source), this setting does migrate to Viewer via the calculated light map.

- The Ambient Map type does not include the Direct Sun Light (DSL) effect from the VIM Model's Scene's Sun Light Source.
- When generating a Ambient Map Light Map Type RealTime shadows are not generated from the DSL.
- Ambient Cube plays the role of Ambient Map for Dynamic Objects but does not generate RealTime shadows from those objects.

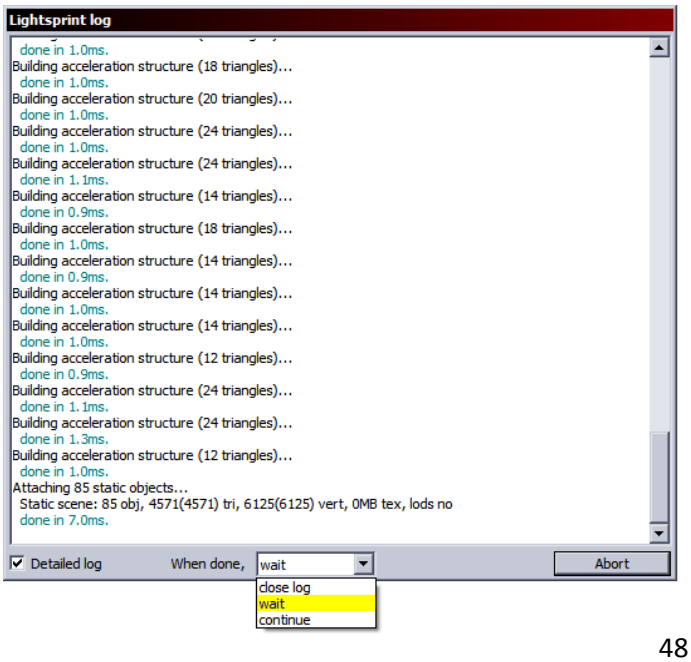
Full Map: Includes in the Light Map calculation all (full) light sources with the effects of direct lighting (including the Sun light source), this setting does migrate to Viewer via the calculated light map.

- The Full Map type includes the Direct Sun Light (DSL) lighting-shadow effect. The Ambient Map types do not include the Direct Sun Light (DSL) lighting-shadow effect – compare the two previous images under Direct Sun Light Source and Ambient Cube Light Source.
- The Full Map lighting effect on static objects is the same as the Ambient Map effect plus it includes the DSL RealTime shadow effect.

Bake Local Lights: When this option is checked all lighting fixtures checked on in the Lights List will be included in the Light Map calculation.

Terrain Downsample: this feature sets the relative resolution of terrain light map in comparison with the objects default light map resolution. The higher the slider value the better the quality of the rendered terrain surface. The impact of the higher setting however is an increase in the calculation time for the scene's light map.

Light map resolution: this is the resolution of the light map for objects in the scene. The time of processing the light map calculation is resolution squared. This means if you increase resolution 2 times the time for calculation will increase 4 times. In general terms the higher the light map resolution the longer it takes the scene to render and the larger the resulting file size.



Light map quality: This sets the quantity of rays emitted from a luxel (luxel is a light map texture pixel) of the light map. The higher the number of light beams or technically the

number of rays per luxel the higher the quality of the light map affect. This is stochastic process and time of light map calculation rises linearly based on the quantity or rays.

Smoothing: This property sets the smoothing of the light map. It decreases the stochastic mistakes in the light map calculation but decreases the sharpness of light map as well.

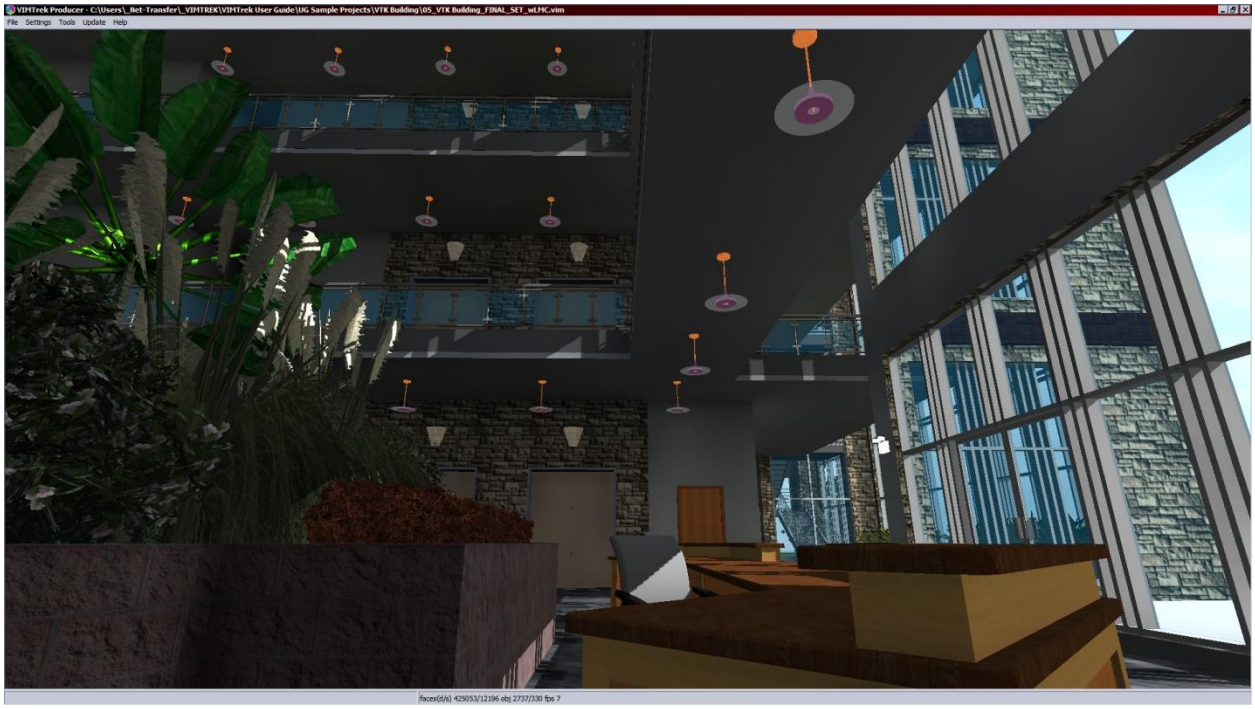
Build light maps: Picking this button starts the process of the light map calculation. The **Lightsprint log** dialog opens displaying information about the light map generation process. If you don't want to read the detailed information you can uncheck the ***Detailed log*** display option. In this case only the main information will appear in the frame and because the processing time may be lengthy it may seem that nothing is happening and the program has stopped.

As the process is running you can choose from three "**When done**," options: close log, wait and continue.

NOTE: This process can take from several seconds to several hours depending on the scene size and calculation settings. Please be patient because the calculation of light maps is not very fast process in any system. If needed you can stop the process by clicking the ***Abort*** button. Once the process is finished the Abort button becomes the ***Close*** button.

See below for lighting effect examples.

Default scene lighting without Light Map.



Light Map Type Ambient without any lighting fixture included (Bake local lights not checked)

Light Map Type Ambient with all lighting fixtures included (Lights are checked on in Light List and Bake local lights checked)

Light Map Type Full with all lighting fixtures included (Lights are checked on in Light List and Bake local lights checked)

Light Map Type Ambient with all lighting fixtures included and Sun Settings Time set to 11:00pm (Lights are checked on in Light List and Bake local lights checked)

TIP!

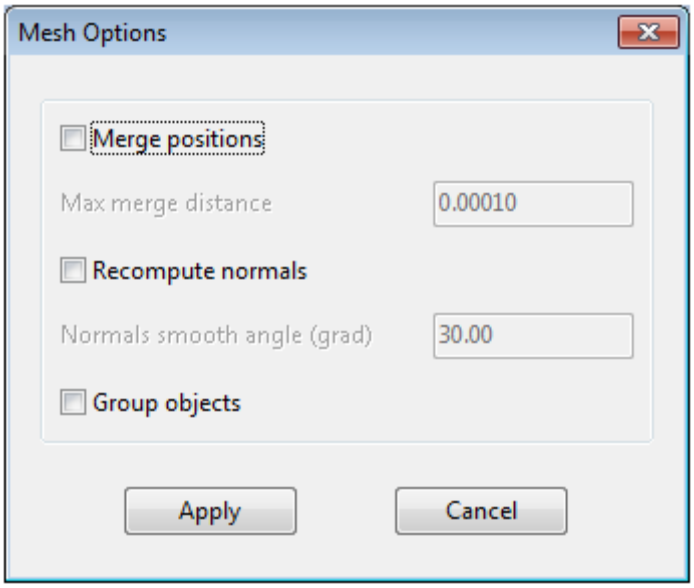
To greatly decrease the processing time for the Light Map calculation you can use a combination of the Mesh Options with the Simplification tool. The end result is a reduction in the complexity of the objects in the VIM Model Scene which will decrease the amount of time required to run the Light Map calculation. See Mesh Options and Simplification.

Group Objects - increases the speed of running a Light Map calculation (sometimes by 4 or 5 times depending on scene) but increase the file size of the vim.

To obtain a smaller file use Simplification with medium value (it indicates the percentage of saved geometry). However, the Simplification tool doesn't reduce file size dramatically if complex textures are contributing to the main volume of file size.

Mesh Options

Mesh Options tools allow you to modify the way the objects in the VIM model scene are grouped or recognized within the VIM model scene. Grouping or merging individual objects into a series of groups can significantly improve display performance of large model scenes and reduce the calculating time for Light Maps.



Merge positions: If checked this function merges the vertices positions of adjacent objects that are closer than the distance set in the *Max merge distance* box. This allows adjacent separate objects to be recognized as single objects which can greatly improve the performance of displaying the model and decrease the time for running a Light Map calculation for interior lighting.

Recompute normals: If checked the normals are recomputed for object faces and merged (read as a single face) if the angle between each surface is less than the *Normal smooth angle* value set in the box.

New Feature

Group Objects can be used to greatly improve the loading and display performance of the VIMtrek Viewer file exported from Producer.

This option merges many similar/equal objects into one object. The results decrease the loading time into Viewer and improves the fps (frames per second) performance of the model scene in Viewer. Technically this decreases the amount of Draw Calls to the graphics card's GPU. This is very useful for modern graphics cards and allows the increase of the FPS (up to 20 times in some cases) for the scenes containing a high object count.

NOTE: After this applying this operation you cannot select a single object within the grouped object set, only the group. The logic used by Producer to determine the combining of similar objects into a group does not follow the logic of building elements (system families) in Revit. For example, the objects (mullions and panels) that make up 6 independent Curtain Wall Systems in Revit may be grouped into only 2 objects in Producer without regards to their locations in the Revit model's wall structure. That is separate curtain walls may combine into one object or the two halves of a curtain wall system may be grouped to different groups.

Apply: When picked the process of calculating and applying the Mesh Options properties is ran and applied to the VIM Model Scene.

Terrain Creator

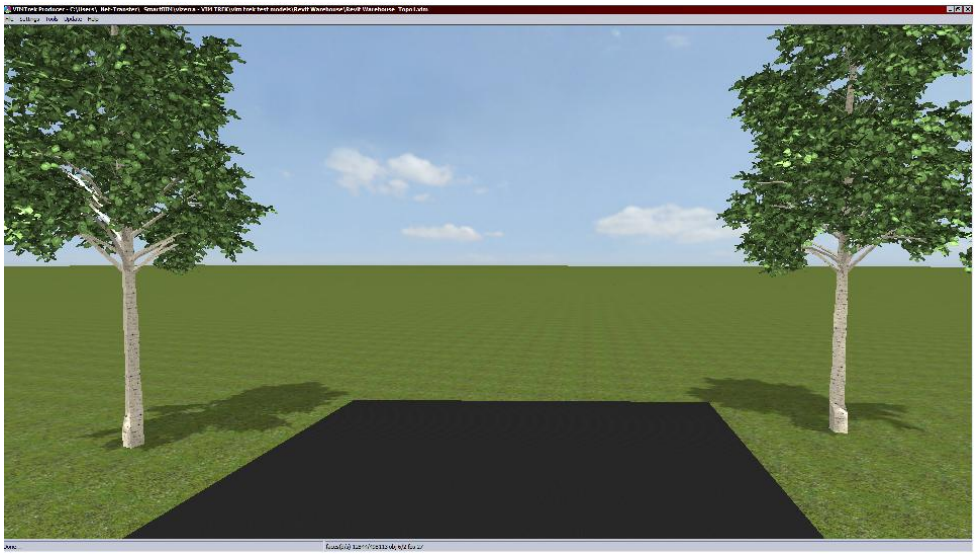
Terrain Creator Overview

Based upon the properties of the Revit toposurface in the Revit project Terrain Creator can generate a VIM terrain object that extends to the VIM Model Scene's horizon. The generated terrain will take on the material property of the Revit toposurface. The Terrain object is generated just below the Revit toposurface (Under existing topography).

NOTE: If the 3D View is Exported to VIMtrek with a Section Box active that crops the Revit Toposurface the Terrain Creator will not be able to generate an extension of the terrain. It is necessary for Terrain Creator to have a true surface boundary edge around the perimeter of the toposurface in order for it to be extended.

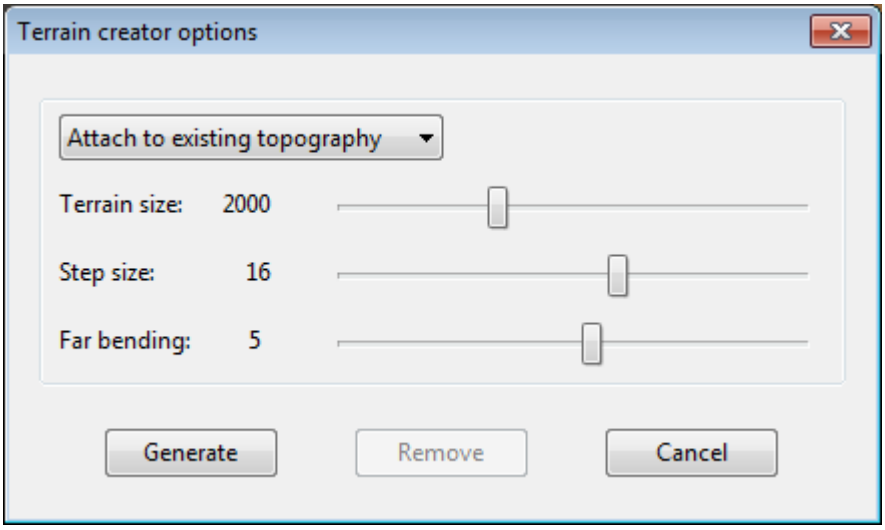
Multiple toposurfaces with complex edges may result in anomalies in the generated terrain.

VIM Model Scene with only the Revit toposurface.



VIM Model Scene with the Terrain created.

Terrain Creator Options



Terrain Creator drop-down list:

> **Attach to existing topography –** This option has Producer creating a terrain surface adjacent to the toposurface from Revit. When viewed from above the toposurface area the seam between the Revit toposurface and VIM's terrain are virtually undetectable. If you navigate down to inches above the surface display artifacts may appear. This is the only option currently available.

Terrain size: Adjust the relative size of the generated terrain beyond the toposurface. Values range from 1000 to 4000. The higher the value the longer it takes the terrain to be created.

Step size: The Terrain generated to the horizon by default has the Revit toposurface material mapped to it. This material is mapped to the square mesh cells that makes up the Terrain. The Step Size controls the size of the space between two cells.

WARNING – ADJUSTMENTS TO THIS SETTING CAN TAKE A GREAT DEAL OF PROCESSING TIME.

Far Bending: This setting is used to make the terrain a little bit spherical. The results are the far corners and edges of the terrain at the horizon are bent in order to smooth their appearance at the horizon.

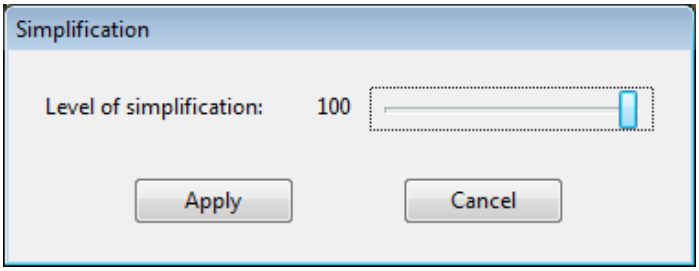
Generate: Starts the process of creating the terrain.

Remove: Removes the previously added Terrain object. The current Terrain object must be removed before the next Terrain object (with new settings) can be created.

Cancel: Closes the dialog without creating a Terrain object.

Simplification

The *Simplification* dialog window allows you to reduce an amount of geometry in the scene and increase the overall display performance.



Level of simplification: The level can be adjusted from a resolution of 15 to 100. The lower the setting the lower the accuracy of geometry of certain objects in the VIM Model Scene. See the examples below.

Level of Simplification at 15.

Level of Simplification at 100.

Apply Applies the quality setting set with the Slider**.**

Update

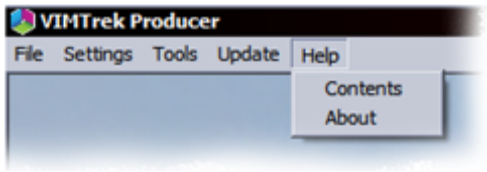
Update item is currently disable. VIMtrek Updates will be distributed from VIMtrek Studio.

Help

Contents

This item is currently disabled**. Please follow the link below to access VIMtrek Support.**

http://vimtrek.zendesk.com/forums



About

This identifies the current installed version of VIMtrek

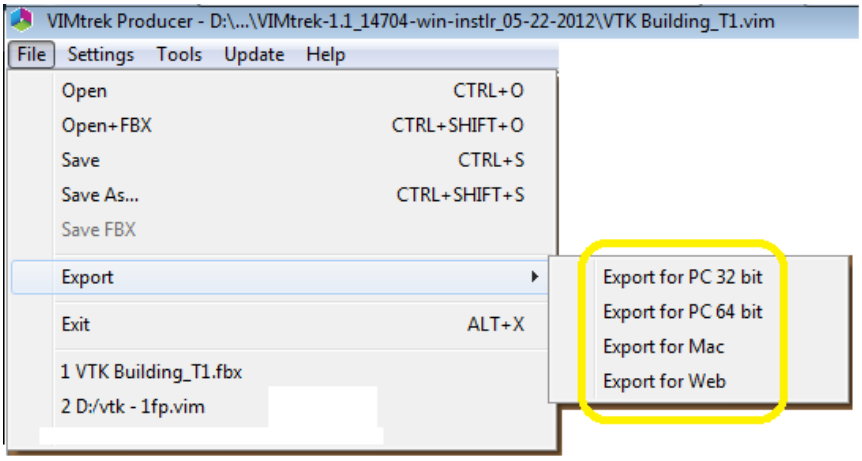
VIMtrek Model Viewing Platforms

VIMtrek Producer can export the VIM Model Scene for viewing in **VIMtrek Viewer** on a PC or a MAC platform. The VIM Model Scene can also be exported from **VIMtrek Producer** to be viewed in a (platform independent) Web Browser.

Viewing the VIM Model on a PC or a MAC is done with **VIMtrek Viewer** while viewing it in a Web platform is done in a Web Browser. Viewing the VIM Model in a Web Browser is independent of the computer's Operating System. Currently the VIM Model html file can be viewed in Internet Explorer, Mozilla's Firefox and Google Chrome.

VIMtrek Producer Export

For viewing on PC or MAC *Export* generates an application file (.exe for PC and .app for MAC) that contains the VIM Model Scene with the **VIMtrek Viewer** embedded.



New Feature

Process for Exporting for PC (32 bit or 64 bit)

- Go to **File** > **Export** > **Export for PC 32 bit (or 64 bit)**.
- In the **Export for PC…** dialog navigate to the folder where the VIMtrek Viewer file (.exe type) will be created.
- Enter a file name for the executable (Viewer) file and pick Save.
- Navigate to the file and run it to open the VIM Model scene in **VIMtrek Viewer.**

Process for Exporting for MAC

- Go to **File** > **Export** > **Export for MAC**.
- In the **Export for MAC…** dialog navigate to the folder where the VIMtrek Viewer file (.app type) will be created.
- Enter a file name for the executable (Viewer) file and pick Save.
- Transfer this application file to a MAC computer and run it to open the VIM Model scene in **VIMtrek Viewer.**

Exporting for Viewing in a Web Browser

For viewing the VIM Model Scene in a web browser a series of files are created in a user defined folder. The files will be created in the folder are:

scene.vim
Viewer.image
WebPlayer.html
WebPlayer.unity3d

The scene can be launched in a web browser of your choosing from the html file.

Process for Exporting for Web

- Go to **File** > **Export** > **Export for Web**.
- In the **Browse For Folder** dialog navigate to the folder where the folder that will contain the VIMtrek web Viewer files will be created.
- With the folder select in the upper portion of the dialog pick the **Make New Folder** button.
- The New Folder name will automatically be selected so go ahead and enter a folder name for the web Viewer files folder.
- Pick OK to complete the process.

Viewing the VIM Model Scene in a Web Browser

- Navigate to the folder created containing the web browsing files.
- Right-click on the Webplayer.html file to display the menu (Figure 24)
- In the menu go to Open with > select the web browser version you want to view the VIM Model Scene within.

Remote Server Hosting of VIM Model Scene

To access the scene from the Web you have to upload the files generated with the Export to WEB option (scene.vim, WebPlayer.html, WebPlayer.unity3d) to the Remote Web Server.

The URL for scene viewing is <url web server>/WebPlayer.html?fileToOpenUrl =<url web server>/scene.vim

For example, if you upload the scene to this server -http://myserver.com/unity- then the URL will look like this:

http://myserver.com/unity/WebPlayer.html?fileToOpenUrl=http://myserver.com/unity/scene.vim

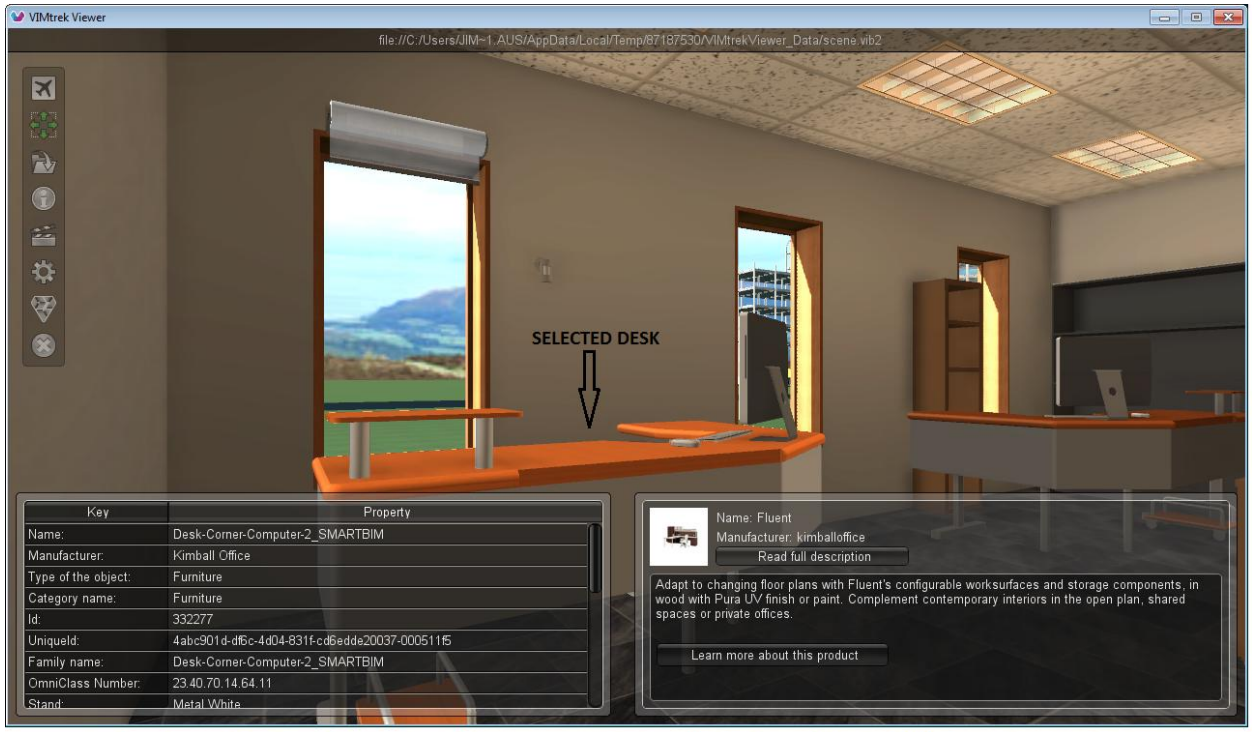
VIMtrek Viewer

VIMtrek Viewer Overview

VIMtrek Viewer is the program where the Visualization meets the Information of the Model. The environmental settings applied in **VIMtrek Producer** to the VIM Model Scene are displayed in **VIMtrek Viewer**. In addition to the visualized environment **VIMtrek Viewer** gives you access to the Properties information migrated from the Revit project model. Extended information from SmartBIM Catalog objects such as building product manufacture data and environmental certifications from e**coScorecard** may also be viewed.

There are two operating modes in **VIMtrek Viewer** – Navigation Mode and Selection Mode. In the Navigation mode you are free to roam the model scene by navigating through it using basic gaming controls – keyboard and mouse. In the Selection mode you are free to view the Property information, product manufacturer information (SmartBIM Catalog) or ecoScorecard information (SmartBIM Catalog) of any selected object in the scene.

You can switch between Navigation and Selection modes by simply clicking the right mouse button or the hitting <**V>** key.



Basic Information: Revit Property data

Extended Information: Building Product Manufacturer and ecoScorecard data

Navigating in Viewer

When viewing in the Navigation Mode you navigate around the VIM Model Scene by using a combination of the Input Controls – the mouse and the keyboard.

Mouse Input Control for Navigation

The mouse Input Control is used to control the direction you are viewing the scene. In Viewer when you are operating in the Navigation Mode you do not have to depress any mouse button to control the direction you are viewing the mode scene.

Keyboard Key Input Control

Keyboard Keys controls the motion or movement through the VIM Model Scene. The direction of movement is always relative to the direction you are looking in the scene – which is controlled by the mouse or a series of keyboard keys.

Movement Keyboard Controls

W – holding the **W** key moves you in a forward direction relative to which way you are looking

S – holding the **S** key moves you in a reverse (backwards) direction relative to your viewing direction

A – holding the **A** key moves you to the left, perpendicular to your viewing direction

D – holding the **D** key moves you to the right, perpendicular to your viewing direction

These movement or motion keys can be used in combination so you can easily move in oblique directions relative to the direction you are looking.

The Direction keys on the keyboard can be used instead of the **W-A-S-D** keys. Their control of the direction of movement relative to the viewing direction corresponds to the keys' direction arrow.

Navigation Keys <Shift>, E and Q.

Holding the <Shift> key while navigating in **Viewer** will increase the speed by a factor of 5 times.

Holding the **E** key while navigating in **Viewer** will move you up relative to your viewing direction.

Holding the **Q** key while navigating in **Viewer** will move you down relative to your viewing direction.

The Space Bar can be used to 'jump' in the model scene when the Gravity model is activated.

View Keyboard Controls

In Viewer you have the option to use a series of keyboard keys to control the viewing direction in the model scene.

T – holding the **T** key changes your viewing direction upward

G – holding the **G** key changes your viewing direction downward

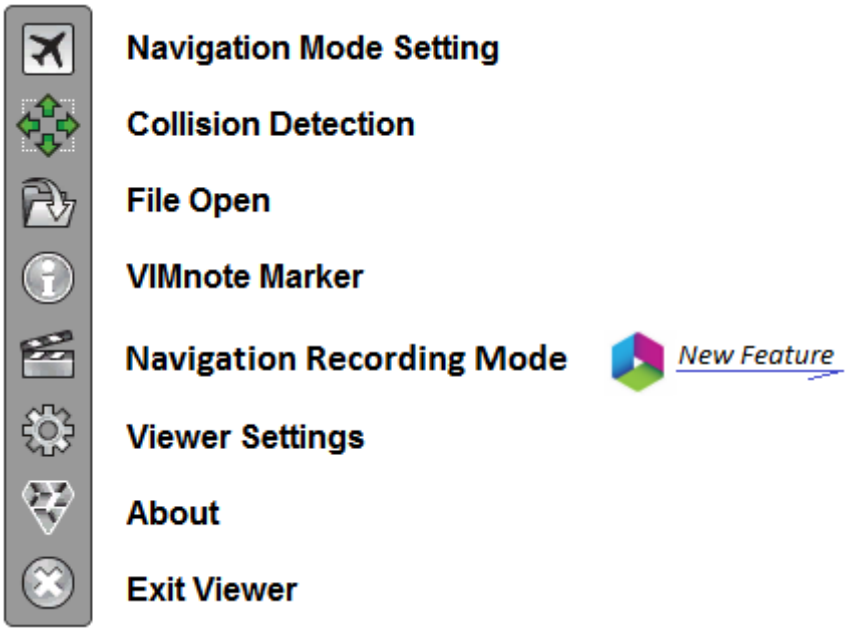
F – holding the **F** key changes your viewing direction towards the left

H – holding the **H** key changes your viewing direction to the right

VIMtrek Viewer Toolbar

While viewing the model scene in **VIMtrek Viewer** you have tools for specifying VIM Model Scene Viewer Settings, Opening vim files, adding VIMnote Markers or adjusting settings for Input (navigation)Control and Graphics. These settings can be accessed from the **VIMtrek Viewer Toolbar** (See below).

NOTE: You must be in the Selection Mode to pick on the Toolbar tools.



Navigation Mode Settings

VIMtrek Viewer's Navigation Mode Settings include Fly/Gravity mode, Collision mode and Input Control (navigation) settings. These settings can be set or accessed from the **VIMtrek Viewer Toolbar**.

Fly/Gravity Mode

The default navigation mode setting when you first open a Viewer file is the Fly mode. In this mode – using your mouse and keyboard – you are free to navigate around the model scene in any direction – up, down, left, right, forwards, backwards or any combination thereof. When the Gravity Mode is active your navigation around the model scene is affected as if you are weighted down by gravity. This is best demonstrated as you navigate up or down a flight of stairs or step off a raised floor or slab. Also, your

navigation speed is slightly reduced when the Gravity Mode is active. While in the Gravity mode hitting the spacebar performs a jump function which can allow you to navigate over or onto raised parts of the model scene.

Gravity Mode ON

Fly Mode On

NOTE: When you first activate the Gravity mode your 'avatar' or viewer in the model scene will be pulled down by gravity until its feet lands on a surface. The surface can be any object in the model scene. Your 'avatar' is about 5'-10" tall so you need to make sure you are a little more than 6 feet above a surface before you turn gravity on. Also, when you activate gravity the Collision Detection mode is automatically activated.

Collision Detection Mode

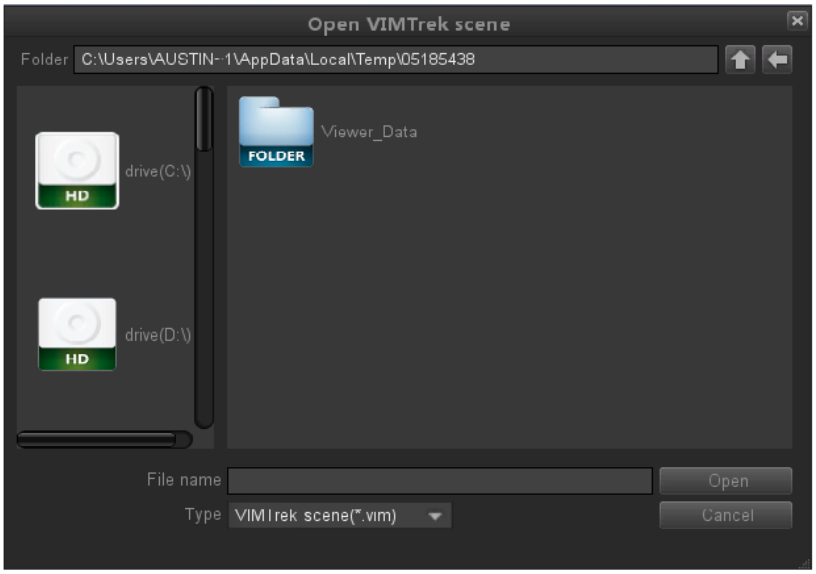
When the Collisions Mode is active you cannot navigate through walls, floors, roofs or ceilings. You can only navigate or pass through door and window openings. The doors and windows do not need to be open. You also may not be able to pass through openings less than approximately a square yard.

Collision Mode ON

Collision Mode OFF

VIM Model Scene Open

The Open tool opens the Open VIMtrek scene dialog. Here you can browse to a previously saved VIM Model Scene (.vim) file, select it and open it in Viewer.



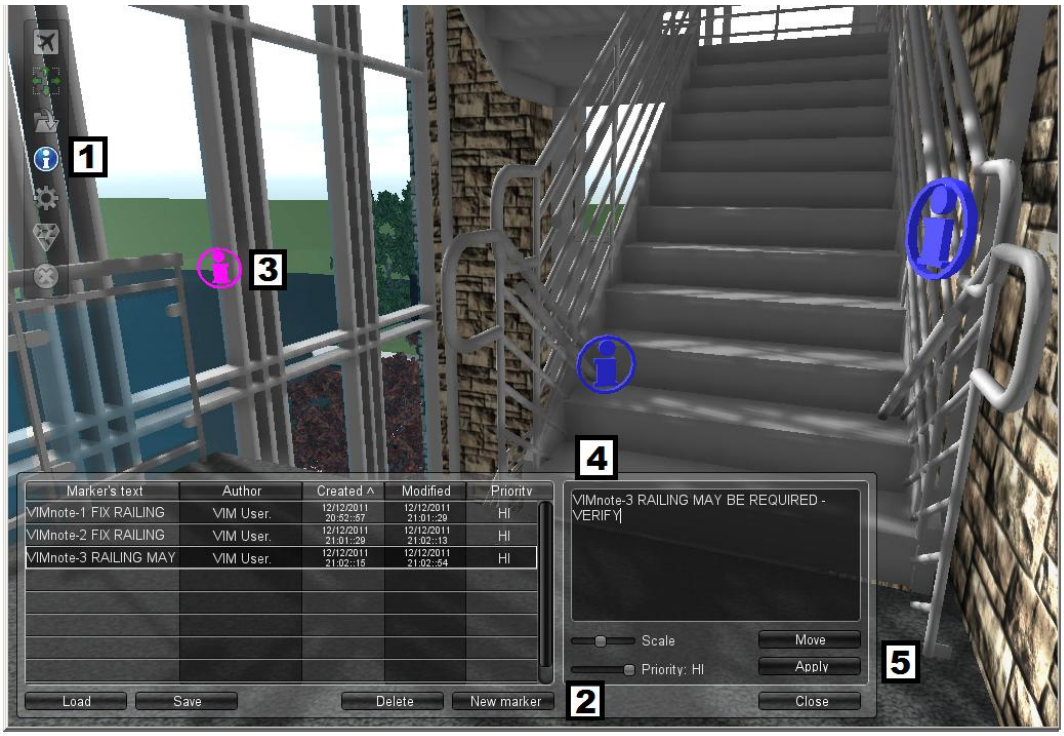
VIMnotes

The VIMnote Marker feature allows the viewer of the VIM Model Scene to place VIM Markers in the current view of the Model Scene and write VIMnote annotations or mark-ups relative to that view. The VIMnotes are added to the VIMnote Marker dialog in the order they are added to the Model Scene. Each VIMnote is listed with the Author, date and time created, date and time modified and its Priority setting. The Priority can be set to Low, Medium and High.

Once the VIMnote Markers have been added to the scene they can be saved to a .mrs file which can be distributed (emailed) to other viewers of the VIM Model Scene. They can then load the VIMnotes into their copy of the VIM Model Scene (or into the original scene)and review the Marker locations/views and VIMnotes.

Placing VIMnotes in VIM Model Scene (reference image below)

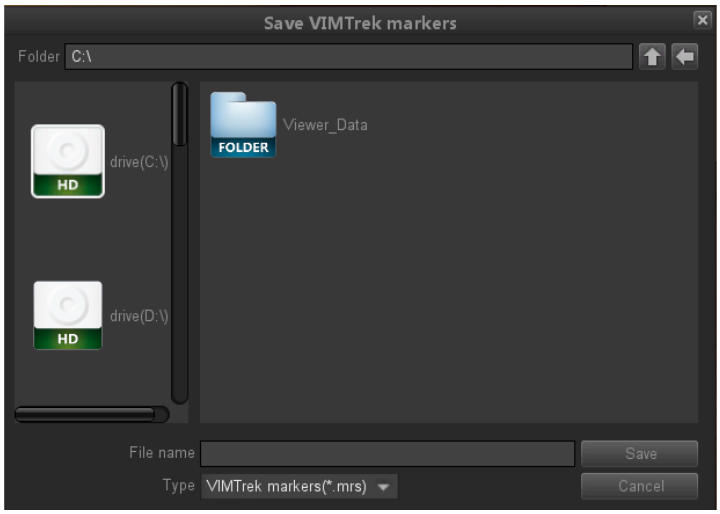
1. Pick the VIMnote Marker Tool
2. In the VIMnote Marker dialog pick the New Marker tool button.
3. Pick to place the Marker in the scene close to the area requiring the VIMnote annotation.
4. Click in the VIMnote Text area and write the VIMnote.
5. Pick the Apply button to add the VIMnote reference to the dialog.



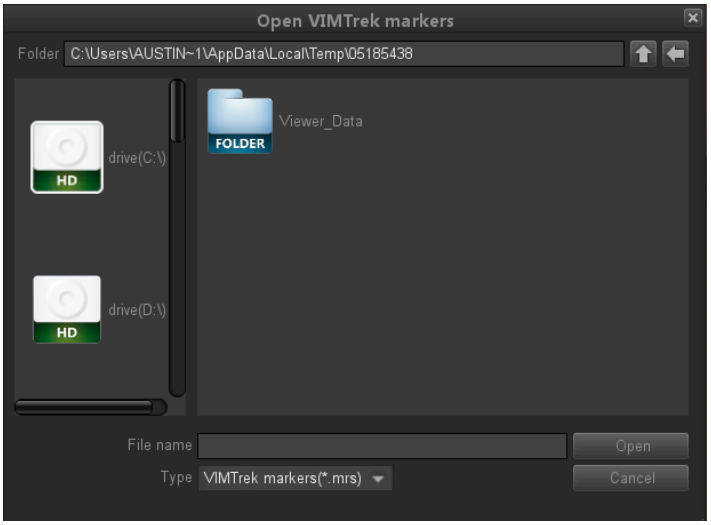
VIMnotes and VIM Markers

Additional VIMnote Markers can be added in the current View or you can close the dialog, navigate to another View in the VIM Model Scene and add additional VIMnote Markers.

Once the VIMnotes have been added to the scene pick the **Save** button. This saves the series of VIMnotes and Markers into a .mrs file. This saved .mrs file can then be distributed (emailed) to other viewers of the VIM Model Scene.



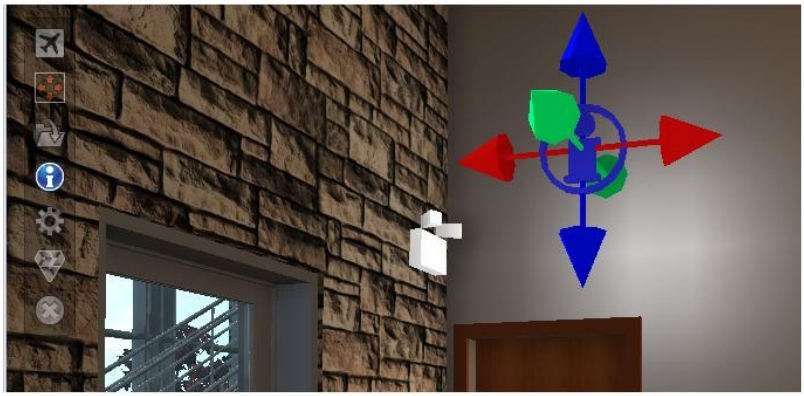
Upon receipt of the .mrs file the VIM Model Scene can be opened, the VIMnote Marker Tool selected to launch the dialog and the **Load** button used to load the VIMnote Marker file.



Moving the VIM Marker

If the position of a VIMnote Marker in the scene needs to be moved you can select the VIMnote Marker on the list in the dialog then pick the Move button.

After picking the Move button a Gizmo will appear on the Marker. You can dynamically drag the Marker to a new location by picking and dragging on the axis of the Gizmo. Depending on which axis you initially left-click on when you drag you cursor up and down the screen you will be moving the Marker either up or down (the blue axis), left or right (the red axis), or forwards or backwards (the green axis).



Marker Move Gizmo

The relative size of the selected Marker can be adjusted using the **Scale** slider.

A selected Marker (and associated VIMnote) can be deleted from the scene using the **Delete** button.

The VIMnote Marker dialog can be closed using the **Close** button.

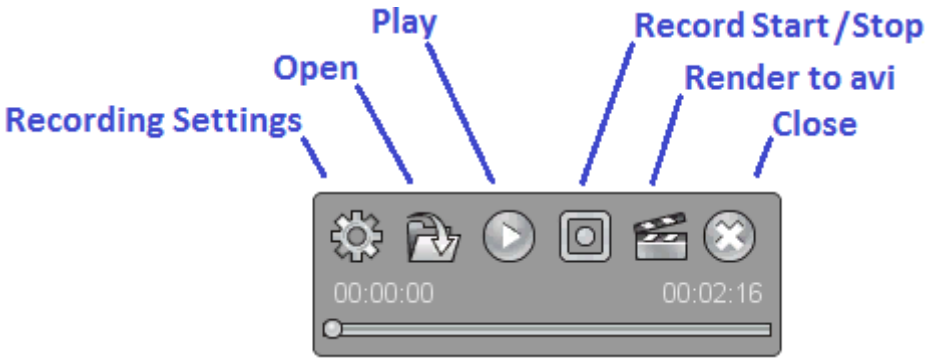
If you close the VIMtrek Viewer scene before saving the series of VIMnote Markers a warning message will display.

New Feature

Navigation Recording Mode

Navigating through a VIM Model Scene in **VIMtrek Viewer** can be recorded. The recording is saved by default to a .vtr file type which can be played back in Viewer. It can also be saved/recorded as an .avi file which can be played back in Windows Media Player, Apple's QuickTime Media Player and most any other industry standard MultiMedia Player that uses the mpeg4 codec.

When the Navigation Recording tool button is picked the Navigation Recording Toolbar is displayed at the bottom of the Viewer window.

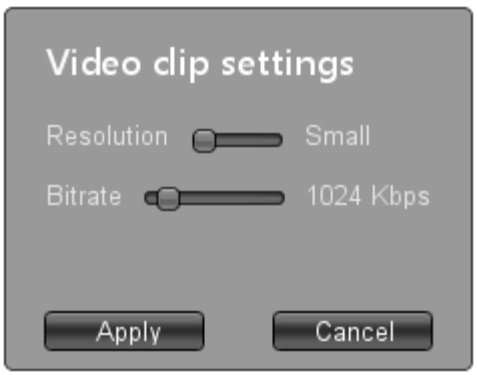


Navigation Recording Toolbar

The tools on the Navigation toolbar are Recording Settings, Open Viewer video file, Play Viewer video file, Record Start/Stop button, Render to avi file, and Close Recording toolbar.

Recording Settings

Recording Settings opens the Recording Settings dialog.



Video clip settings dialog

In the Video clip settings dialog you can set the recording screen resolution and bitrate for recording the navigation through the model scene as an avi file. The avi recording process renders the video at 25 frames/second using the mpeg4 codec.

The screen/playback resolution options are: Small (320 x 240), Medium (640 x 360), and Large (1280 x 720).

Video Bitrate: The bitrate of a video specifies the amount of information stored in the video. The information stored is measured in bits and is stored per unit of time during the recording process. The higher the bitrate is, the clearer the resulting video. This setting usually increases with the increase in screen/playback resolution.

The bitrate setting in Viewer ranges from 512 kbit/s (kilobits per second) to 5634 kbit/s.

Video bitrate references

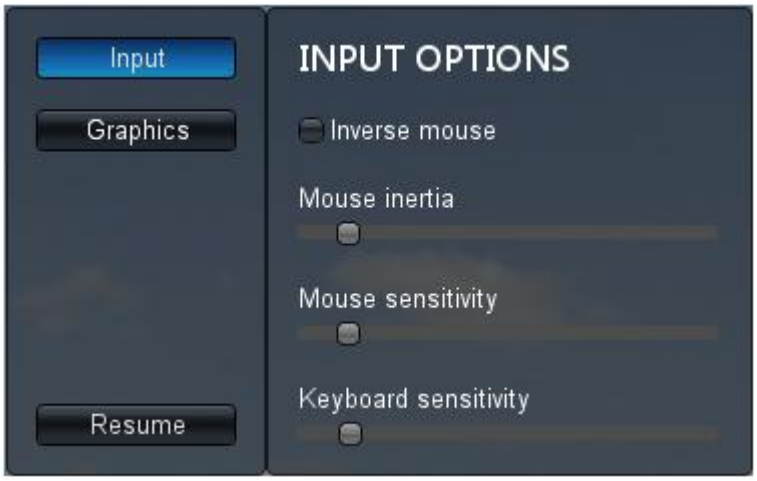
- 128–384 kbit/s – business-oriented videoconferencing quality
- 1500 kbit/s max – VCD (Compact Disc Digital Video) quality
- 3500 kbit/s typ — Standard-definition television
- 9.8 Mbit/s max – DVD (using MPEG2 compression)

Process for recording navigating through a VIM Model Scene

1. Pick the Navigation Recording Mode button on the VIMtrek Toolbar
2. Pick the Recording Settings button on the Navigation Recording Toolbar to open the Video clip settings dialog
3. In the Video clip settings dialog adjust the Resolution and Bitrate and pick the Apply button
4. While operating in the Navigation mode pick the Recording Start/Stop button to start the recording process
5. Change to the Navigation mode in Viewer and navigate around the scene
6. Change to the Selection Mode in Viewer and pick the Recording Start/Stop button to stop recording
7. In the Save VIMtrek Capture File dialog (opens automatically when the Recording Start/Stop button is picked) select a folder, name and save the vtr file.
   OPTIONAL
8. To generate an avi file of the recorded navigation pick the Render to avi file button
9. In the Save .AVI Video File dialog select a folder, name and save the .avi file
10. The playback of the just recorded navigation begin as the avi file is generated using the setting set in the Video Clip Settings dialog
11. Pick the Close button to close the Navigation Recording Toolbar

Viewer Settings

Viewer Navigation and Graphics Setting can be modified using the toggles and sliders in the Advance Settings dialog . In the Input Options settings Mouse Inertia, Mouse Sensitivity and Keyboard sensitivity can be adjusted using the sliders. Moving the sliders to the right increases the effect and moving the sliders to the left decreases the effect.



The settings under the Graphics Options allow you to set the Overall Quality Level between 6 levels, toggle off the SS Ambient Occlusion and Tone Mapping settings.

The **Resume** button returns you to the Model Scene after making your adjustments to the settings.

About VIMtrek Viewer

Exit VIMtrek

This tool closes VIMtrek Viewer. It can be used if Viewer opened with the Full Screen option (windows option unchecked).

New Feature

Viewer Snap Shot: F12 key now saves a Snap Shot of the current view in VIMtrek Viewer. The image is saved as a .png file type.

SYSTEM REQUIREMENTS

NOTE: While acknowledging Autodesk's minimum system requirements for running Revit we propose that the following specification is used as the minimum for VIMtrek Producer.

System Requirements for VIMtrek Producer and Viewer:

CPU : Intel Core i5 or AMD Phenom II X4 945
System RAM : 8 GB DDR31
GPU : Nvidia gtx 280 or AMD 5870, with latest video drivers supporting Shaders 3.0, OpenGL 2.1 with MRT (Multiple Render Targets),
Dedicated GRAM: 2GB
OS : Win Vista, Win 7, latest DirectX PC10600

Minimal system requirements for Web Browser Viewing:

CPU : Intel Core i5 or AMD Phenom II X4 945

System RAM : 2 GB DDR31

GPU : Nvidia gtx 280 or AMD 5870, with latest video drivers supporting Shaders 3.0, OpenGL 2.1 with MRT (Multiple Render Targets),

Dedicated GRAM: 1GB

Major Web Browser: Google Chrome, Mozilla Firefox, Windows Internet Explorer, Opera.

NOTE: Unity3D plug-in is required for VIMtrek Web Browser Viewing.

KNOWN ISSUES

- Sometimes when you go to another application or open a dialog box over the Producer window Producer may 'lose focus' – meaning the display within the Producer window either does not respond when you navigate in the model scene or the navigation of the scene is displayed in the area where the closed dialog box was. See image below.

  FIX: Go to Settings > Navigation and simply open the Navigation Settings dialog an pick OK. You don't have to actually change anything, the "focus" of Producer will be returned. Also selecting the Print Screen button or opening and closing another Producer dialog usually works.

  This issue most often occurs in the Windows Interface Scheme Basic or Windows Classic on 64-bit systems. We have not seen it in the Aero Scheme or on 32-bit systems.

Example of Producer "losing focus"

- Flickering or flashing of building objects such as floor, roof or wall systems may occur when there is interference between two or more coincidence systems.

FIX: Turning the visibility off of one of the interfering systems in Revit before exporting the model to vim will remove the flickering/flashing issue.

- VIMtrek may display certain visual anomalies due to certain graphic card configurations and/or outdated drivers.

  FIX: Update graphics driver to the most current display drivers.

- Revit textured materials may not rendered correctly in VIMtrek due to restrictions in reading custom material information from the Revit model database.
- Glass visualization in VIMtrek may appear too transparent and does not have reflective properties.
- The display of shadows has a limitation based on distance resulting in shadows will disappear as the user navigates away a great distance from the VIM model scene.
- Until a Light Map is applied model objects may appear to be separated and slightly above floors and slabs.
- Revit files of 200 MB an larger or Revit projects with a large amount of complex geometry may not export successfully to VIMtrek.

  Revit Model Integrity Check: If a Revit project fails to Export to vim+fbx then as a model check run Revit's native Export to FBX feature. It is likely if VIMtrek Exporter's fbx fails then the Revit fbx will fail also indicating there is an issue with the Revit model.

- Certain objects such as curtain walls are only able to be selected in VIMtrek as piece parts rather than a single element.
- The Viewer Properties dialog box does not always follow Revit naming conventions and order of listed properties.
- Reviewing VIMs over online meeting services (such as GoTo Meeting and WebEx) may cause the navigation to appear jerky rather than smooth.
- Navigation speeds differ between Fly Mode and Walk Mode.
- VIMtrek does not follow Microsoft file open and file save patterns for the following:
  - When a VIM is open in VIMtrek Producer and the user opens another VIM file VIMtrek Producer does not indicate that the first VIM file has been closed.
- The VIMtrek Mac Viewer does not have a "close" button.
- When in selection mode, the 3D illumination "cone" for lighting elements can block and therefore prevent the selection of items visible behind the illumination "cone".
- VIMtrek does not provide a log file when the program locks up or crashes.
- Producer does not open VIM file on XP 64bit
- Materials applied by Revit 'paint' method do not export to VIM
- Revit's Decal feature is not supported in VIMtrek.
- Different Movement Speeds with Fly Mode ON vs. OFF
- Point Light Lighting Fixtures with an Intensity of 40 and greater is consider extremely high and these fixtures will render a light map affect that is very bright in VIMtrek Producer.

  FIX: Review the Revit Lighting Fixture properties and adjust the intensity accordingly. Re-Export to vim and run a new Light Map.

- 3D DWG objects may not maintain their original position and orientation in the model scene due to missing constrains in the Revit model.
- Export to vim+fbx resulting in large file sizes. Example, let's assume there are two Revit project files with a similar file size. One has a rich data for renderings and materials; the other has a large number of families but less rendering information – materials and custom textures. Even though their Revit file size is very similar their resulting vim file size may vary greatly. The former case

which contains sophisticated rendering objects will generate a much larger vim file. On the other hand Revit files can be bigger because of loaded families, annotations and detailing which are not related to rendering and will not greatly affect the resulting vim file size.

- Revit Split Regions and Painted materials are not currently supported.
- Producer fails to load the just exported vim file: Cause – during the installation of a new Revit release the corresponding Revit Material Library was not installed.

  FIX: Install the corresponding Revit Material library and run a new Export to vim+fbx or Export to vim.