

Rendering



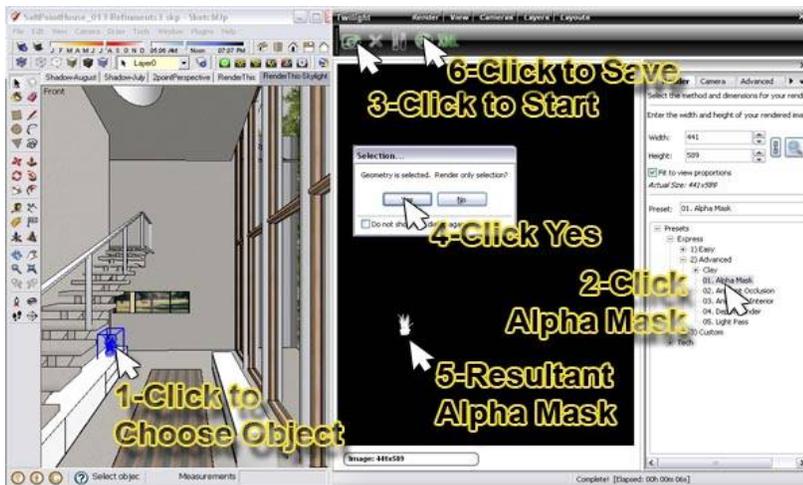
Advanced Settings:

Clay Render : This is used for checking the lighting without worrying about the materials.



The Clay Render is a way of saying “check the lighting without materials/textures”. It is useful when you have a model either untextured, or partially textured and are looking for a quick preliminary rendering. This setting is more advanced than many other render engines and their clay render settings because it automatically replaces all materials in the scene with a clay material without changing the bump mapping, and returns them to their original state when finished. It is also a “Smart” preset that leaves Light Emitting Surfaces and Thin Glass (Architectural Glass) as they are, to allow for easily running clay renderings for interior images. If materials have a bump map applied, the bump will still render without the color or texture.

Alpha Mask : This is used for isolating geometry in post-process image editing.



1. Select an object.
2. Choose “Alpha Mask” as your render method. (Camera Tab: Be sure exposure and gamma = 1.0)
3. Start the rendering.
4. When asked to render only selected objects choose “yes”.
5. A black and white image will be created of the object.
6. Save the rendered mask image.

This black and white “mask” is for use with photo editing programs in post-processing. By placing the generated mask in the Mask Slot for a layer in your image editing program, the item rendered will be isolated. Most common uses for this are for isolating furniture for post-processing objects behind the furniture such as people. Also it is commonly used in architecture for post-processing in a high-resolution (hi-res) sky image.

Ambient Occlusion: This is a quick way of rendering “ambient” lighting.

It works best if the sun and lighting are turned off. It quickly calculates/approximates the adjacent shadows from nearby objects. This is commonly known as how one object's lighting may “occlude” another's lighting.

Animation Interior

One possible render preset optimized for interior renderings. The “Animation” presets have something 'special' in them that will avoid sparkles, etc. They will, depending on the scene, take longer to render than this one. This setting will not look good with scenes using blurry metals or subsurface scattering materials.

Rendering



Depth Render



Renders a greyscale image that assigns different values of grey for different distances from the camera. Useful for post-production in a photo editing program when manually recreating a Depth Of Field effect, or complex masking, fog effects, or other post-production tonemapping, coloring, tinting, or highlighting techniques.

See also the [Render Pass Reference Chart in the Tech Render Settings](#) section.

Light Pass

Renders an image showing only the light sources in the view. This will include light emitting surfaces, and the sky seen thru a window.

Animation Render Settings

If animating only camera, you can lock the light cache by choosing "Reuse Lighting Information" checkbox in the Animation Tab of the Render Dialog. This is a way of saying that the "precalculation" of general illumination will not need to be calculated more than once for the animation. This not only saves render time, but also causes the lighting in the render to have no 'flickering' from varying lighting calculations.

However, if you are rendering object animations it is not possible to lock the light cache. **So the animation settings were created** with special attributes that allow for steady lighting throughout the animation without render times increasing greatly.

These settings are also proving useful in other applications as well, such as with quick exterior renderings.

Rendering



Tech Settings:



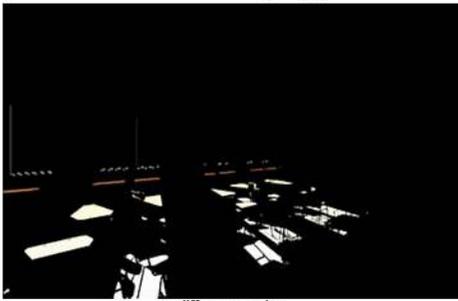
ambientocclusionpass.jpg



ClayRenderHigh+.jpg

The Tech settings contain more Render Setting Presets organized by render method. These are the legacy render settings for the convenience of Kerkythea users coming to use Twilight.

Here are some examples of Render Passes available in the Tech Render Settings Folder for use in Post Production.



diffusepass.jpg



diffusetexturepass.jpg

Diffuse Texture Pass is useful for many things including use as a quick selection mask for all parts of an image with a certain texture in post production image editing or test rendering animations. Depth Render can also be used for test rendering as well as making fog or lens blur in post production.



maskrender.jpg



lightpass.jpg

 **You may create your own settings** by opening a copy of any setting inside of a text editor like "Notepad" and changing the values you wish to modify then save it with a logical name into the **Custom** folder. You will need to close and re-open the Render Dialog in order to see/make the new setting available for use. You may also use Kerkythea 2008 Echo to create a render preset and then save this into your Twilight Render Settings folder structure. Please refer to Kerkythea's documentation to learn more about creating render settings using Kerkythea.

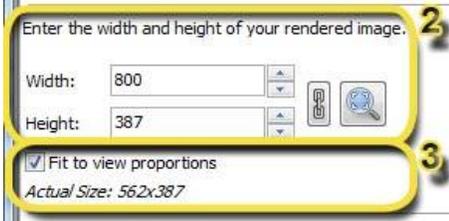


depthrenderpass.jpg



specularpass.jpg

Rendering



2 Render Size

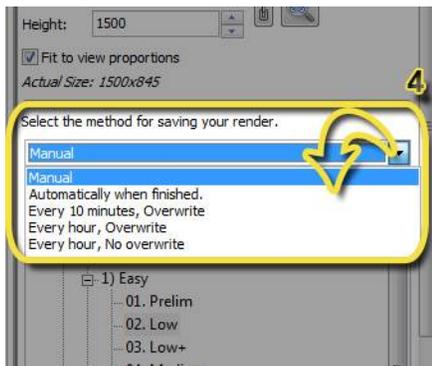
This is the resolution of the rendering in pixels. Click the chain link to toggle the proportion lock.

Clicking the magnifying glass will reset the resolution to match the size and proportion of the SketchUp viewport.

3 Fit to View Proportions

With this box checked, no matter what resolution you choose for the “Render Size”, Twilight will render the image using the proportions shown on the screen, and show you the resultant “actual size” resolution in pixels of the rendering below.

If this box is checked when using the [Position Scene View Tool](#) the view frame will fill the screen.



4 Saving Render Method (Incremental Save)

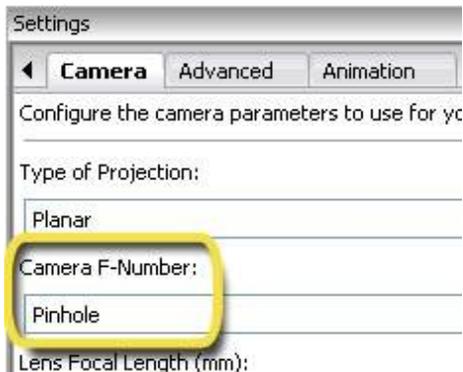
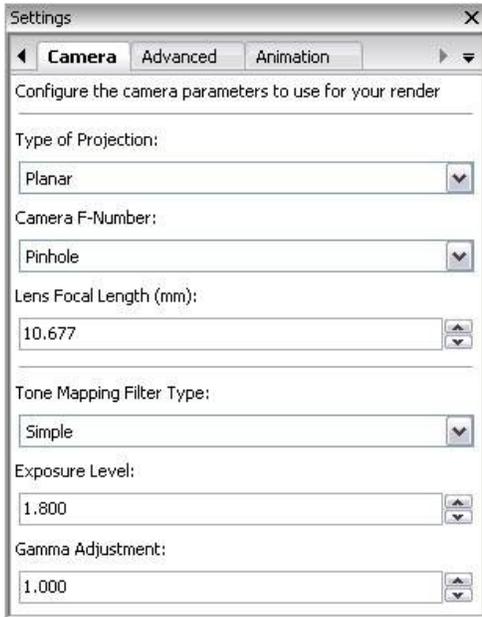
This option allows you to save a rendering automatically and incrementally in a format and to a place of your choice. When choosing any render saving method except for “Manual”, the image will be saved *while it is in progress of being rendered*. It will also be saved automatically at any time that the rendering is stopped.

After making a selection from the menu, then clicking the Start Render button, you will be prompted for a rendered image **location and name**. Type in the name under which you desire the image to be saved, and add an extension for the image type to be saved. (.hdr, .png) Be sure to select carefully the type of image to be saved. Without an extension, the image will be saved as a high quality .jpg format.

Incremental saves work with all render methods. Keep in mind if incremental saves are used with non-progressive render methods (Easy 1-7) the image will not necessarily be completed when it is saved. For instance, if a computer failure or power failure happens during a rendering and it has been saved in progress using the Incremental Save feature, the image will likely have no anti-aliasing.

“Automatically when finished” option simply allows you to define a name and place to save the final render, and when it is complete it will be saved.

“No overwrite” means that it will add a number to the name of the rendering for each incremental save.



Camera Tab

1 Projection:

Planar = Match SketchUp's Camera (Default)

Cylindrical = Render a Cylindrical Panoramic view. For use in virtual tours, or as cylindrical background images.

Spherical = Render a [Panoramic Spherical Image](#), an image with spherical projection. For use in virtual tours for example.



When saved in .hdr format Cylindrical and Spherical image types can be used to light other scenes in Twilight.

Parallel = Render the scene without taking perspective vanishing point convergence into account. Great for rendering an elevation, isometric, or section view. (SketchUp's Section Cuts are not rendered automatically in Twilight. However, plugin ruby scripts like ["Zorro2" by Whaat](#) are available which can be used to modify a model quickly for rendering a section perspective.

2 F-Number:

Lighting and Cameras in Twilight are best thought of just as in Photography. Depth Of Field (DOF) (blurring of objects as a function of distance from the camera) in Twilight is a function of the F-number and the camera's focal point. *It is also a function of the View Angle set in SU using the magnifying glass and holding down the Shift key. The **higher** the F-number, the **clearer** the image, that is, the DOF effect will be **less** noticeable. Wider Angle fields of view (>50 degrees) with shorter focal lengths give greater depth of field. Use higher F-number for larger objects and larger distances. The F-Number must be used in conjunction with the Twilight [Position Scene View Tool](#).*

Hold down the **Ctrl** key and click a point on an object in your scene where you want the camera to be in sharp focus to set the Camera's Focal Point.

Change the F-stop on the camera here as shown default to "Pinhole". This number is a fraction ($2.8 = 1/2.8$). In the "real world" each "step" on a camera equals twice as much light entering the aperture. In Twilight, each step in general will simply decrease the DOF effect. If $2.8 =$ very blurry, $32 =$ clear.

When rendered, you will now see Depth of Field, depending on the scene. Things in front of or behind your focus object should be a bit blurry, depending on their relative distance to the camera and the F-number chosen.



Be sure to "Update" your SketchUp camera "Scene" right away AFTER choosing a Camera Focal Point. This will save your DOF view for later use. Choosing a previously created scene after setting the camera's target will change the focus of the camera.



3 Filter:

Filter = type of Tonemapping.

Tonemapping is simply the modification of an image to control its highlights and dark areas to achieve an image "look". *Tonemapping is as crucial for getting a nicely rendered image as the exposure setting is to a real camera.*

Tonemapping in Twilight is achieved in the Camera Tab. Choose the Type of Tonemapping Filter, then set the parameters such as the Exposure or Gamma.

! ***It is recommended to adjust the Exposure first***, and change the Gamma *only when absolutely necessary.*

You may think of Tonemapping like adjusting a camera's exposure on-the-fly. You can tonemap the image manually by increasing or decreasing the exposure of the image at any time *during the render process.*

! ***Tonemapping may be adjusted at any time*** during or after the render process. *As long as the rendered image remains in the window.*

Rendering



Update Method:



! **For more tips on controlling processed content, see the section entitled “Model Processing Phase.”**

! **Rendering Selected is an additional way you can choose the content to render from the Scene.** Choose an object to render and start the rendering. Twilight will ask to only render the selected object. If you choose “yes”, you must be sure to select a light to render with the object as the lights selected are taken into account.

Advanced Tab

1 Content Updates:

There are several ways to have the scene updated:

“**All**” makes Twilight process everything in the scene for every frame or image that will be rendered.

“**Camera & Lights**” or “**Camera Only**” tells Twilight that *you have not* changed anything in the scene except a light or camera. This causes the processing phase of *test* rendering progress to go much more quickly for doing a series of test renderings on large scenes since it will only be updating the lights and cameras. “**None**” will re-render with last-exported content, as if there have been no changes to the scene at all.

! **“Camera & Lights Only mode should be used cautiously because it is easy to ‘forget’ this option has been set.** If something changes in the geometry or materials of the model, the user will wonder why they have not been incorporated into the rendering. **If your model is not updating materials or geometry when you render, be sure to check that this setting is set to “All” and re-render.** This settings remains across sessions, so remember to set back to “All” when closing the SketchUp file.

2 Grouping Method:

There are two methods of grouping the content of a scene. One fast, and one slow. They are both of equal quality.

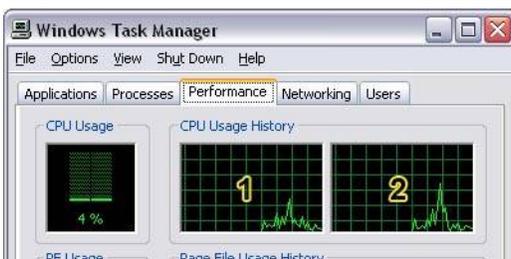
Definitions/Instances processes any component definitions in the model as an instance for Twilight to render. This not only increases the speed and efficiency of processing, but also the speed and efficiency of rendering. **Per Material** ignores components in the scene. This method could be very slow for larger scenes. It will also increase render times for larger scenes, or cause your machine to run out of RAM.

! **It is not likely that you will need to change this method.** Try this method if having trouble exporting a scene to XML or to help in more easily editing materials in Kerkythea.

3 Threads:

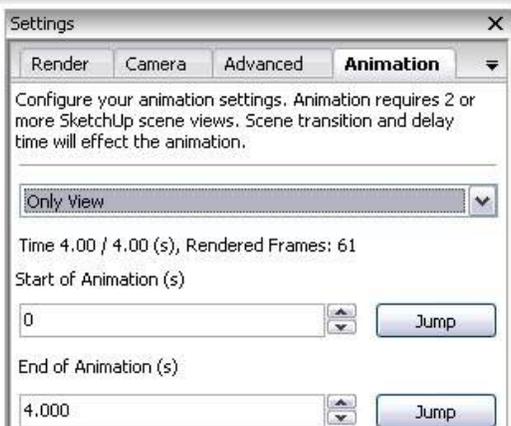
Threads = Number of Threads provided by your processor(s) to employ in rendering the image. [Multithreading](#) means that the computer is utilizing more than one Thread to do a task. Twilight will by default render with the maximum number of threads found on the machine. **Twilight’s render process is always in Low Priority Mode so as not to disrupt other processes on the machine.** Eventhough it is using all threads, this allows you to continue working in SketchUp and other programs while rendering with little performance degradation, depending on the machine and render method. Please avoid changing this setting unless you know what you are doing.

Grouping Method:



! **To find out how many threads your computer has:** Open Task Manager in Windows (right-click your desktop) and look at the “Performance Tab”. This example shows a machine with 2 threads.

Rendering



Animation Tab

1 Animation Pull-down Menu:

Choosing "Only View" will "turn on" animation rendering and cause Twilight to render the fly-thru animation as it has been set up to do in your scene's tabs utilizing SketchUp's native scene animation feature.

Any scene which has been excluded from the animation by unchecking the "Include in Animation" check box in the SketchUp Scene Manager Dialog Box will likewise be excluded from the rendered animation in Twilight.

*See Also: [Proper Animation for SketchUp](#)

*See Also [Batch Rendering](#)

*See Also [Codec Info](#)

-  **Set Scene Delay to Zero (0) before rendering your animation.** *If not, SketchUp's animation control will tell Twilight to render the same frame over and over for the duration of the Scene Delay in order to make the animation video appear to have the delay time specified. To add delay later, use your video animation production software to create scene delays.*
-  **Since all lighting in the scene is taken into account by Twilight whether it is contributing light to the currently rendered frame or not,** it is wise to turn off lights that do not contribute in a significant way to that particular scene. This becomes vital in reducing rendering times for animations. If rendering a scene that does not require sun or sky be sure to disable the Sun and set the sky color to "Background".
-  **Twilight will calculate all direct and indirect lighting for all lights on all geometry processed in the scene, whether it is seen by the camera or not.** For example, one may want to set animation scenes to turn off hi-polygon geometry such as furniture in certain spaces if these spaces will not actually be seen or need to be rendered during a portion of the animation.
-  **Animating the turning on and off of lighting is achieved by leveraging Scene Tabs to control layers or hidden geometry.** By putting lights on layers whose visibility is turned on and off via the SketchUp Scene Manager they will be turned on and off during animation. In the animation pull-down, simply choose "Has Animated lights/Sun. If rendering with animated objects be sure to choose appropriate pull-down option.