

# Octane Render Sketchup Exporter

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This version 1024 suits Octane version 1.024b and all other current versions to 1.025b, it should also work on earlier versions like 1.022,

## Installation:

Extract the files from the **Octane\_1024-09.zip** file into the **../Sketchup../Plugins/** folder, keeping the sub-folder structure for several of the files – see below.

*You must ‘extract’ the files, keeping any sub-folders – so **do not** uncompress everything directly or open the archive, select and then drag+drop the files [unless you are sure what you are doing] - as doing it that way you could end up with files in the wrong relative relationships. On a PC you should use the ‘extract’ option in your zip application; on a Mac a double-click might not keep them in their sub-folders, so you should use right-click ‘unarchiver’ or ‘stuffit\_expander’...*

If you not sure where your ‘Plugins’ folder is type [or copy+paste] this line into the *Window > Ruby Console*:

```
Sketchup.find_support_file("Plugins") + <enter>
```

Typically the PC path that is returned is:

**C:/Program Files/Google/Google SketchUp 7/Plugins**

Whilst typically the Mac path that is returned is:

**Macintosh HD/Library/Application Support/Google Sketchup 7/SketchUp/Plugins**

So there should be the following:

*In the folder ../Plugins/*

<b>Octane_loader.rb</b>	The file that loads the current script below.
<b>win32ole.so</b>	A file used by the PC version of the tool. [since this does nothing on a Mac and could be discarded, on a Mac].
<b>README.txt</b>	This file can be discarded - it only explains the initial installation.
<b>deBabelizer.rb</b>	The file that adds locale language possibilities to the tool’s dialogs etc – see below.
<b>FixReversedFaceMaterials.rb</b>	The file that makes a separate tool in the Plugins Menu called ‘Fix Reversed Face Materials’ – see below.

*And in the folder ../Plugins/Octane/*

<b>Octane_1024.rb</b>	The script that sets up the <b>Octane Render Sketchup Exporter</b> tool.
<b>OctaneDialog.html</b>	The file that is used to make the main web-dialog for that tool.
<b>OctaneDialogStrap.png</b>	The logo image used by the html file.
<b>OctaneDialogBack.png</b>	The background image used by the html file.
<b>OctaneToolbar16x16.png</b>	An image used for the <b>Octane Render</b> toolbar ‘small’ button.
<b>OctaneToolbar24x24.png</b>	An image used for the <b>Octane Render</b> toolbar ‘large’ button.
<b>OctaneHelp.pdf</b>	This Help file.

*And in the folder ../Plugins/Octane/OctaneFolderBrowser/*

<b>folder_browser.html</b>	A file used to make the special folder-browser dialog.
<b>folder_browser.js</b>	A file used with the special folder-browser dialog.
<b>folder_browser.css</b>	A file used with the special folder-browser dialog.
<b>folder.png</b>	The image used for the folder-icons in the special folder-browser dialog.
<b>folderup.png</b>	The image used for the folder-up-icon in the special folder-browser dialog.

*And in the folder ../Plugins/Octane/OctaneSlider/*

<b>slider.js</b>	A file that is used to make the main dialog’s sliders.
<b>slider_Bar.png</b>	The image used for the slider’s ‘bar’.
<b>slider_Btn.png</b>	The image used for the slider’s ‘button’.

And in the folder ../Plugins/Octane/OctaneLingvos/

<b>OctaneEN-US.lingvo</b>	A file used to translate the tool's dialogs etc. This is the default 'English' version, copy it, rename and add appropriate translations for another 'locale'.
<b>OctaneFR.lingvo</b>	A file used to translate the tool's dialogs etc to French locale.
<b>OctaneDE.lingvo</b>	A file used to translate the tool's dialogs etc to German locale.
<b>OctaneES.lingvo</b>	A file used to translate the tool's dialogs etc to Spanish locale.
<b>OctaneNL.lingvo</b>	A file used to translate the tool's dialogs etc to Dutch locale.
<b>OctaneIT.lingvo</b>	A file used to translate the tool's dialogs etc to Italian locale.

Other *lingvo* files may be added over time...

If a file is NOT installed the language defaults to '*English*'.

And in the folder ../Plugins/FixReversedFaceMaterials/

<b>FixReversedFaceMaterialsEN-US.lingvo</b>	A file used to translate that tool's dialogs etc. This is the default 'English' version, copy it, rename and add appropriate translations for another 'locale'.
<b>FixReversedFaceMaterialsFR.lingvo</b>	A file used to translate that tool's dialogs etc to French locale.
<b>FixReversedFaceMaterialsDE.lingvo</b>	A file used to translate that tool's dialogs etc to German locale.
<b>FixReversedFaceMaterialsES.lingvo</b>	A file used to translate that tool's dialogs etc to Spanish locale.
<b>FixReversedFaceMaterialsNL.lingvo</b>	A file used to translate that tool's dialogs etc to Dutch locale.
<b>FixReversedFaceMaterialsIT.lingvo</b>	A file used to translate that tool's dialogs etc to Italian locale.

Other *lingvo* files may be added over time...

If a file is NOT installed the language defaults to '*English*'.

## Usage:

After installation and the restart of Sketchup you should have an additional menu item to run the tool

### File > Octane Render...

There is also an **Octane Render** toolbar – by default it is not active – you can activate it from the matching *View > Toolbars* menu item [or Mac equivalent]. Clicking its button is the same as picking the main menu item.

There is also a 'right-click' context-menu - **Octane Render...** – it also works the same as the main menu item.

Alternatively you can also type **octane** into the Ruby Console...

## The Dialog:

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# octanerender™ Sketchup Exporter

## Project Configuration

Octane Render Binary:

Project Path:

Project Name:

Native Unit Size:

## Export Configuration

### Film

☒ Resolution Width:  Height:

### Camera

☐ Export Camera Active Camera:

☐ Lens Aperture Radius:

☐ Focal Depth (m):

☐ Motion Blur Interpolate:

### Daylight Environment

☐ Export Sun Direction Light Source:

### GPU Devices

☐ Specify GPU Devices ☐ 0 ☐ 1 ☐ 2 ☐ 3

## Export

### Frame

### Animation

Image Output:

Start Frame:   End Frame:  Step:

Pixel Samples:

[showing the default settings in English].

The first section is “**Project Configuration**”.

On the first run you will be pressed to choose an **Octane Render Binary** file – the application that the tool will use to process the render. It will be remembered with Sketchup for any future sessions.

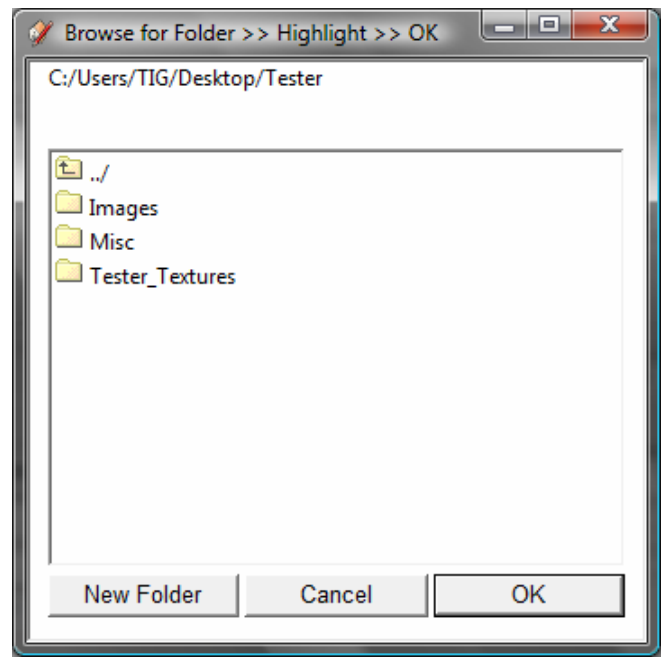
On a PC it should be the **octane.exe**, on a Mac it should be the **octane.app**.

Should the specified Octane binary file become unavailable between sessions you will be prompted to select an alternative.

After the initial set up you can change to another Octane application by clicking the *Browse* button.

The **Project Path** initially defaults to the current model's folder – you can change this by clicking the *Browse* button at any time. This special folder-browser will open [it should start in the current Project Folder]. Highlight the desired folder and press OK: the current folder path is displayed along the top of the dialog, to navigate up double-click the topmost 'folder-up' icon [../], to navigate down into any folder double-click on its icon. You can add a 'New Folder' into the current folder by clicking the button – the new folder will be made and then temporarily shown at the top of the list of folders so that you may find it easily, useful in longer lists.

**Note:** “Special/accented-characters” [*Unicode*] in the path are acceptable on a Mac, *but* not on a PC, where the *project-path* should **not** contain any “special/accented-characters” – i.e. it should contain **only A-Za-z0-9** and **\_** or **-**, **Note** that *<spaces>* **are** allowed in the folder-names **BUT NOT** in *project-names* – please see below.



The **Project Name** initially defaults to the model's name, with any spaces/special-characters replaced with an underscore: so *my\_model.skp* gives *my\_model* for the Octane *my\_model.ocs* file], you can type in another name if required; if the .ocs file doesn't exist then it will be made if you run the rendering parts of the tool. Alternatively, you can click on *Use Existing Project* button to find an existing .ocs file... then **both** the **Project Path** and the **Project Name** will be changed to suit that selection. Note that a previously made .ocs will be 'relinked' and will not update existing materials' textures etc – so with major changes it is best to start a new .ocs or rename the old one. **Note:** the *project-name* should **not** contain “special/accented-characters” or *<spaces>* – i.e. it should contain **only A-Za-z0-9** and **\_** or **-**. **Note** how *<spaces>* are **not** allowed in *project-names*, so use the **'\_'** character as an alternative separator if desired.

The dialog also shows the model's units settings – **Native Unit Size** – this is non-editable and is for information only [and to keep consistency with other exporters' UIs] - all dimensions used *within* the tool are automatically set to the units required by **Octane** – i.e. **'meters'**.

To the right of this is a **Help** button that opens this file [**OctaneHelp.pdf**] - if it is found in the *../Plugins/Octane/* folder.

These settings are remembered during the session and if you save the model when you close it, then they are remembered with the model.

The second section - “**Export Configuration**” - lets you choose what settings to use with the export [if any].

## Film

**Resolution** Initially disabled, if enabled you can change the following:  
**Width** The image width, defaults to the screen width.  
**Height** The image height, defaults to the screen height.  
**Percentage** The standards are *100%, 75%, 50%* and *25%* which are applied to the current width and height settings.  
The other drop-down option is *Reset* with reverts to the model's screen width and height.

## Camera

**Export Camera** Initially enabled, you can change the following settings:  
**Active Camera** This defaults to *from <Current View>*.  
Other in the drop-down options [if there are Scenes tabs available] are *from <Current Scene>* and then every available ‘Camera’ from the ‘Scenes’, listed in their current order [it includes all Scenes – even those that are excluded from an animation]. If you select one of these ‘scene’ options then the model will adjust automatically to that Scene tab – remember that this might also affect the ‘visible geometry’ as there can be different hidden and layer states with each Scene; and only ‘visible geometry’ is exported to the OBJ/MTL etc. Note that if this *Export Camera* option is enabled **and Render Animation** is invoked then this selected Camera will be ignored and each animation frame's Scene's Camera is used instead [see *below*].

**Lens Aperture Radius** Initially disabled, default=1, you can type in any value between 0 and 1 – e.g. 0.25, or use the slider to change the value. When typing a value the slider will update to the new value when you press enter or the text input box loses focus.

**Focal Depth (m)** Initially disabled, default=5, you can type in any value > 0, or use the slider for values up to 100, if a value > 100 is desired then type in that value – the slider will stop at the maximum extent (100). When typing a value the slider will update to the new value when you press enter or the text input box loses focus.

**Motion Blur** Initially disabled, default=*Next*, choose *Next/Previous* – to blur between scenes in animations.  
If the **Active Camera**=*from <Current View>* then **Motion Blur** is inoperable in the **Render Frame** mode as it has no ‘next/previous scene’.  
If there is no ‘next’ scene then the first scene is used, if there is no ‘previous’ scene then the last scene is used.  
Note that if this option is enabled **and Render Animation** is invoked then the camera for the Scene next or previous to the animation frame's Scene will be used in each frame, if it is available.

## Daylight Environment

**Export Sun Direction** Initially disabled, you can choose the following setting:  
**Light Source** This defaults to *Sun from <Current View>*.  
Other options in the drop-down are *Sun from <Current Scene>* and then any available ‘Sun’ from the ‘Scenes’, listed in their order.  
Note that if this option is enabled **and Render Animation** is invoked then in each animation frame that Scene's Sun will be used instead.

## GPU Devices

**Specify GPU Devices** Initially disabled, you can choose the following settings  
Default is 0 – choose from 0, 1, 2, 3 as the GPU[s] to use:  
*NOTE: these settings can currently cause Octane to hang on startup if enabled AND any number is checked 0-3 at all.\*\*\**  
*Temporary Solution: try it, and if it hangs then next time don't try to specify the GPU using these settings...*

The third section - “**Export**” - lets you choose the type of render - **either**

## Frame

### Export OBJ/MTL Only

Click this button to export the current model as OBJ/MTL to the path defined earlier [and if appropriate, any Textures are put into a sub-folder with the same name + *\_Textures* [which is made if it doesn't exist]. The OBJ file is set to **Octane's** required units 'meters', has triangulated faces etc... All Geometry, Groups, Components and Images [that are not 'hidden' or on non-visible layers] are exported, as separate triangulated faces, with their materials or textures. Note that UV-mapping of textures [position/scale/rotate/etc] within the SKP is supported, but if you have 'skewed' a texture then that cannot be transferred directly into the OBJ / MTL format with triangulated faces because four vertices would be needed – therefore a new 'cloned' textured-material will be made with its own unique image file having the built-in distortion to suit, its name is based on the main material's texture name plus an incrementing numerical suffix - e.g. *Wood* + *Wood.png* >> *Wood1* + *Wood1.png*

or

### Render Frame

Click this button to export the OBJ/MTL as described above, and then automatically open **Octane**.  
A new OCS is made if it doesn't exist.  
A minimized cmd window called *Render Cmd* opens to activate the OCS; it remains open whilst the OCS itself is open – on a PC this cmd window can be closed at any time, and it will finally close with the OCS anyway.  
**Octane** starts to render the OCS using the various export settings you have selected – the s/px is automatically set to the standard maximum [16000] which you are unlikely to want to exceed; note that you can pause or stop the rendering at any stage and/or change other settings in the OCS manually.

or

## Animation

### Image Output

This defaults to the **Project Path** that you have set above, with *img00001.png* added as the first image-name – you can enter an alternative name or path. Alternatively to change the folder you can click the *Browse* button, and a special folder-browser will open - see the Project Path example above. Highlight the desired folder and press OK: the current folder path is displayed along the top of the dialog, to navigate up double-click the topmost 'folder-up' icon [../], to navigate down into any folder double-click on its icon. You can add a 'New Folder' into the current folder by clicking the button – the new folder will be made and then temporarily shown at the top of the list of folders so that you may find it easily, useful in longer lists.  
Again the image-name configuration will default to *img00001.png* which you can then adjust as desired. You can type in any image-name here, after the folder separator (\ or /); but remember that it must have a 'numerical' ending so it can be incremented (like *anim9009.png*) and it must also have a **.png** suffix. The output images in the animation sequence will all be saved into this *Image Output* folder; their names will increment based on the image-name format you have given – e.g. *img00001.png*, *img00002.png*, *img00003.png* etc

### Start/End Frames

These are listed in pull-downs from all of the available Scenes [Cameras], but only those Scenes marked in the Sketchup 'Scene Manager' to be 'included in animation' – i.e. without enclosing (...) in their tab label... If there none or only one available Scene tab then these drop-downs and 'Step' are disabled, as are the 'Pixel Samples' options and the 'Render Animation' button.

### Start Frame

Defaults to the first Scene, it can be any of the available Scenes except the last one.

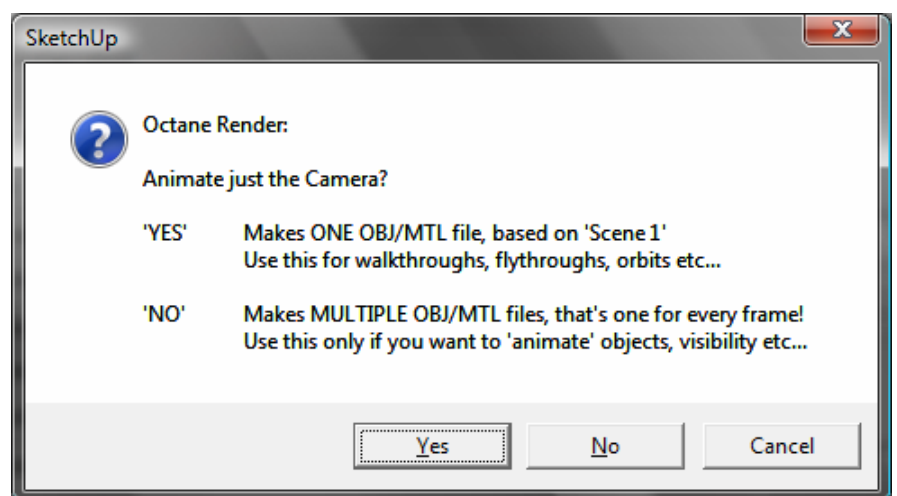
### End Frame

Defaults to the Scene after the Start Frame's Scene [typically the second Scene], it can be any Scene later than the Start Frame's Scene.

- Step** Defaults to '1', the available Steps are listed in a pull-down determined from the Start/End Frames selected.
- Pixel Samples** Defaults to *Medium (256 s/px)*, choose from various setting, or type in a Custom value in the box to the right – it must be at  $\geq 1$ ; *but 8 is small* – use these low settings for quick testing of animation frame-sets !
- Render Animation** Note that previously you must have rendered a single frame to set up the Project OCS's default OBJ file before using this option – otherwise you will get an error message and will need to abort the animation [see below].

Click this button to start the processing of the frame-set specified. Note that the selected Scenes' Cameras, Motion-Blur and Light-Source are used if the respective Export Configuration options are 'checked' - their Frame Render specific Scene/Light-Source settings are ignored for the animation – these are taken from each frame's scene-tab settings. Other 'checked' configurations will also be used, e.g. 'Focal Depth'.

There is then this dialog...



asking if you want to '**Animate just the Camera**'...

The default reply is **Yes** and this will make one OBJ/MTL file based on the settings of the first frame's Scene tab [using that tab's hidden/layer states etc]. The series of images that are then made animate the camera for a walkthrough, fly-round or orbit as the scenes will determine – the 'visible geometry' in every frame is fixed by the first frame's Scene tab's settings. This is the standard and quickest option as only one OBJ/MTL is made.

If you answer **No** you opt for animating the camera **and** the 'visible geometry' in each individual frame's Scene tab: because each tab can have different hidden/layer states [as with 3<sup>rd</sup> party *Animation* plugins] or have even 'observers' to move/modify objects between scenes [as with the 3<sup>rd</sup> party plugin *SketchyPhysics*] a separate OBJ/MTL file is then necessary for *every* frame. This can extend the processing time dramatically, so this option is **not** recommended **unless** you really want to 'animated objects' within the animation's image set. If this option *is* selected then the tool will make an OBJ/MTL file for every frame before starting to render them [these files are temporary and are deleted when the tool's main dialog is closed]. If you close this dialog or select **Cancel** nothing is processed and the main dialog reverts for your next choice...

As the animation sequence is processed the main button's title changes to say '*Rendering Animation, Please Wait...*', and it is then disabled [PC] during the OBJ/MTL creation and subsequent image rendering. When the image processing starts a minimized cmd window called *Animation Cmd* opens in the Taskbar/Dock area and that opens the OCS – once for each frame in the animation – it remains open whilst **Octane** is processing the whole animation sequence.

To abort the image rendering iteration part way through you can close this '*cmd*' window early [the Command-line prompt also reminds you of this]: when aborted the OCS will complete the current frame's render and then stop without processing any further frames in the set. On the completion of the set of images [or its early cancellation], the dialog's button becomes re-enabled and its title reverts to '*Render Animation*' and it can be used again...

## General Notes

All of the current settings are remembered during the session whenever the tool is restarted, and if you save the model, then the settings are remembered with the model and are reused when the model is reopened and the tool is activated. Certain 'volatile' settings [like Scene names] will be reused *if* they are still available [e.g. you haven't deleted that Scene in the meantime], otherwise they will 'default' again.

The temporary cmd/command files and the 'anim' OBJ and MTL files are automatically deleted whenever the tool is closed; however, the main OBJ and MTL files are *always* retained as they are needed by the Project's OCS at all times.

If you want to save a copy of the **cmd** file then remember that as long as the Octane Exporter dialog remains open the **octane.cmd** file is not auto-deleted - so you before closing that dialog you can open the Project's folder and make a copy of the **cmd** file or simply rename it. This can be useful to keep a copy as some newer commands are not yet in the 'mainstream' and are not therefore built-in to Exporters - e.g. if you want to export a very large rendered image you can split it into tileable pieces by editing the **cmd** file's text and adding the following arguments into the argument list, at the end just before the final ".

For a 2 x 2 tile, you would divide the **fov** / 2 and set the appropriate values to suit, running it 4 times with those values for each 'piece':

For the upper left tile

**--cam-lensshift-right to -0.5 --cam-lensshift-up to 0.5**

For the upper right tile

**--cam-lensshift-right to 0.5 --cam-lensshift-up to 0.5.**

For the lower left tile

**--cam-lensshift-right to -0.5 --cam-lensshift-up to -0.5**

For the lower right tile

**--cam-lensshift-right to 0.5 --cam-lensshift-up to -0.5**

For more info on this type of specialized manual adjustment to command files see the Main Octane PDF docs and the Octane Forums...



## Main Toolset Version:

[full]

1024.

- 01 20110314 *First issue.*
- 02 20110323 *Glitch with 'smoothed' surface export addressed.*
- 03 20110513 *Support for PC mapped-drive locations added.*
- 04 20110514 *Motion-blur errors trapped when no leading or trailing frames.*
- 05 20110608 *Minor corrections to yet unnoticed animation paths code error.  
To suit MAC's latest Safari all innerHTML's changes are now set as  
properties rather than as attributes.*
- 06 20111024 *Inputbox code improved.  
Glitch with some file/material/texture checking/[re]naming addressed.*
- 07 20120118 *To be deprecated PLATFORM >>> RUBY\_PLATFORM.  
Material images with no filetype now auto-revert to PNG.  
Tolerance for deciding if distorted textures relaxed.  
Speed improved.*
- 08 20120223 *Tolerance for deciding if 'distorted' textures relaxed further.  
Issues with flipped-instances inside flipped/rotated-instances not  
having faces correctly oriented or messed up UVmapping is addressed.  
The MTL defaults now generally match the Pro exporter;specularity=0.333,  
Ns=0, but ambient=diffuse\_color, alpha=d AND =Tr etc.*
- 09 20120310 *Glitch with Motion-blur during the animation export resolved.*

## Main Toolset - Known Issues:\*\*\*

The non-transfer of any new materials' transparency on a re-linked render/\_anim etc needs to be advised on further by RS. It seems preset in Octane and unrelated to the exporter's files themselves [obj/mtl] which do contain the new materials with all of their values correctly set. Clearly you don't want to overwrite any values of materials that were previously loaded, and which you might have subsequently changed in Octane itself: but on a re-link surely any *newly added* materials that Octane finds should be used with their initial setting taken from the mtl-file– and not 'defaulted' as seems to occur now?? RS need to comment...

Currently using the GPU settings can sometimes cause Octane to 'freeze' on startup if enabled AND any number is checked 0-3 at all, or you specify more GPUs than you have. Temporary Solution: try it, and if it hangs next time don't try to specify the GPU using these settings – perhaps some CUDA settings ? RS need to comment...

If you have an early version OS on your PC – e.g. XP - please upgrade your Internet-Explorer to at least v7 – v8 recommended – as earlier versions of IE can create java-script issues when run with Sketchup's API based web-dialogs... With the first 'full' release both PC and MAC versions should now work exactly the same.

Special-characters/accents [Unicode] in the Project\_Path now work on Mac but on PC they are trapped as they can cause problems with 'Octane' itself as the command-line can convert Unicode values to ANSI ???

A very few users have reported issues with using a v7 model in v8 – probably caused by the 'Octane' attribute\_dictionary becoming corrupted. If the main Exporter dialog fails to appear and there are Ruby Console error messages please close/reopen the model SKP and then copy/paste this line of code into the Ruby Console

```
ad=Sketchup.active_model.attribute_dictionary("Octane");ad.each{|k,v|ad.delete_key(k)}
```

Then retry opening the Exporter dialog...

**Feedback welcome...**

**TIG**

## Locale Versions:

The tool now uses **deBabelizer** to translate its text from the default language of *English* [EN-US] to suit the computer's 'locale', if a suitable 'lingvo' file is found. Some 'lingvo' files are supplied with the toolset [see the list in the installation section] and these are found in the `../OctaneLingvos/` sub-folder. These can be edited or new 'locale' files added to the folder as desired. Each lingvo file's name format contains its 'locale' code – so the default *English* version is *OctaneEN-US.lingvo* – whilst *OctaneFR.lingvo* is the *French* version.

To find your setup's current 'locale' type/copy+paste this into the *Ruby Console*

**Sketchup.get\_locale.upcase**

It should return something like **EN-US** or **FR**...

To make a new lingvo file you simply copy the default EN-US version and change its ending to suit – e.g. use *OctanePL.lingvo* for the *Polish* version. A lingvo file is easily editable with a plain-text editor [like *Notepad.exe*] – each line in the file contains a word or phrase and its translation – for example

**YES<==>YES**

The **<==>** marker separates the English word or phrase and its translation – of course in the EN-US version they are the same. For the *Polish* version you could change the right-hand part thus:

**YES<==>TAK**

When translating please keep the punctuation [there are **###** 'guides' within the lingvo file too]. If a translated phrase is much longer than the English original it might 'wrap' in its location and thereby cause unsightly scroll-bars to appear in the main dialog – you should rephrase or abbreviate your translation to suit.

Of course even if you have perhaps an *Italian* locale that has a suitable *IT* lingvo file you can force the tool to the default of *English* by changing the name of the *IT* lingvo file so it won't be found and used for the translations. Conversely if you have your computer setup with an *English* locale but would prefer an *Italian* language version of the tool then you can swap the names of the *EN-US* and *IT* lingvo files and the *Italian* one will be used instead...

If there is a '**Help**' PDF with a 'locale' tag it will be opened instead of the default *English* one - **OctaneHelp.pdf** – e.g. **OctaneHelpFR.pdf** would be the *French* version.

There are currently **NO** translated locale **Help** files, **BUT** if users would like to translate the **Help** file from *English* into their own locale language then if they contact me, I can PM them a **.doc** version of the *English Help* file - they can edit then use that as the basis of their translation. When it's returned I can then add a suitably named PDF version to the next updated zip, or it could be posted separately for users to download...

## Fix Reversed Face Materials:

This a completely separate tool included in the zip file.  
It has been made to help you fix problems will SKPs that have reversed faces...

It is *always* good practice to create your Sketchup model's forms correctly with all of the faces oriented the proper way, so that the front-face is facing outwards where you might see it and it has any required material/texture applied to it - and conversely the back-face is inside and never has a material applied, as like most renderers it's not seen or rendered by **Octane Render** anyway. The way the OBJ/MTL exporter works is that every face is exported as it has been modelled - i.e. if a face's front has no material the 'Default-Material' is used for that face. This can mean that you get unexpected results when rendering your model IF you have some incorrectly oriented faces - i.e. the back-face is actually looking outwards and has a material/texture applied to it, but the front-face is left without a material - it will look fine in the SKP but it is 'blank' in the OCS version. You can fix individual faces by sampling the back-face material, reversing the face and applying the material to the front face - repeating this for every wrong face ! This can be a big chore - BUT then you should have made it right in the first place !!!  
BUT there is now a tool to help you fix this...

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### **FixReversedFaceMaterials.rb**

#### **Usage:**

##### ***Plugins > Fix Reversed Face Materials***

Select entities including any suspect faces [edges etc are ignored].

If any face has a back-material BUT it has no front-material it is assumed to have been made incorrectly and to be oriented the wrong way round, with the desired material applied to the back instead of the front. So then the face is reversed and its front-material is made to match the back-material - including any UV-mapping appropriately corrected - the back-material is then removed.

If there is no selection you are asked if you want to process the whole model, if you reply "Yes" then absolutely everything is selected !

If the selection includes groups or components you are asked if you want to process these too - if you reply "Yes" then any faces inside them are also processed. If there are 'nested' groups or components with these they are also processed through the nesting.

A closing dialog reports how many faces have been fixed.

To see the affect switch from Texture mode and view in Monochrome mode, run the tool and you should see the changed faces flip - switch back to Texture mode and you should see no difference in appearance since all the materials should still be the same, but incorrectly oriented faces have been fixed.

IF there are still backfaces oriented the wrong way then they will have materials applied to both sides and so will have been excluded from the fix.

There is another option to force selected faces to flip, swap the front and back materials and then delete the unneeded material that is by then swapped onto the back face.

##### ***Plugins > Fix Reversed Face Materials [Forced]***

Use this option with care! It will flip any selected faces that have materials applied to both faces, swap the materials over and delete the material that is by then swapped onto the back face. Pick only the faces you know to be wrong [in Monochrome], otherwise you might mess up already correct faces. As a safety precaution if any of the selected faces have their front face towards the camera a dialog asks if you want to continue - if you answer 'Yes' then they are all processed, if you answer 'No' then the operation is cancelled and nothing is changed.

Once you are happy that you model has its faces oriented as desired then there is another tool to tidy up face-materials...

##### ***Plugins > Delete Back-Materials***

Select entities including any faces with back-materials you want processing [edges etc are ignored].

If any selected face has a back-material its material will be deleted.

If there is no selection you are asked if you want to process the whole model, if you reply "Yes" then absolutely everything is selected !

If the selection includes groups or components you are asked if you want to process these too - if you reply "Yes" then any faces inside them are also processed. If there are 'nested' groups or components with these they are also processed through the nesting.

A closing dialog reports how many faces had their back-materials deleted.

Note: Groups and Component-Instances that can have materials applied directly onto them - then any faces within them that have the default-material [front and/or back] will then appear to have that material applied to them. In fact these faces within the Group/Definition will still have the default-materials [front and/or back]. If you want to quickly remove the appearance of this material on the back-faces within the group then explode the group and immediately regroup the geometry - the group's previous material will then be individually transferred to each face

that had the default-material. Now use this 'Delete Back-Materials' to delete the unneeded back-material. With component-instances you can similarly explode the instance and immediately make its geometry into a Component - using anew name if only that instance is to change or using the same name, overwriting the original definition to update all instances of it - however, remember that you can have several instances of a definition with different materials applied to them and displayed in lieu of the default-material, so doing this might have unexpected consequences, so think beforehand!  
Use 'Delete Back-Materials' this with care and only AFTER using other tools to correct flip and/or swap front/back material etc...

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