

# How to apply sketchup Shortcut

Issue  
March 2013

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## A letter to the Desk of Editor

Hello friends!

SketchUp ur space has completed a long journey for the sake of SketchUp lovers and a long way is to be covered. Our task becomes very difficult day by day. We have to make our magazine more attractive and more informative. Keeping this in mind we have just launched another cool issue of SketchUp-ur-space.

The theme of the current issue is based on "SketchUp Shortcuts". The team of SketchUp-ur-space has written an interesting cover story focusing on some useful tricks to enhance the speed of your 3D drawing process. The readers will come to know some useful shortcut keys for SketchUp.

In interview section, we have presented an exclusive interview with Paul Lee, Virtual Architect & Managing Director at Viewsion Virtual Environments. In this interview Mr. Lee has explained his passion for SketchUp and how it helps him to become a successful architecture.

In article section, Damian Keeley, renowned architect and 3D visualize from UK, has written a informative article focusing on step by step process to create a 3d model of a wheel with SketchUp.

In tutorial category, Andrew Alexander, a promising CAD Designer from Vancouver, BC area, provides an useful tutorial about making flowing surfaces without using plugins.

There will be another exclusive tutorial on how to render night scene with SketchUp and vray plugin.

In blog category, Jim Leggit, the well known architect, urban planner and professional illustrator, has shown "how to a turn a hand drawing into a night scene applying Photoshop and a couple of very quick digital modifications".

In news and plugin categories there will updates on newly launched SketchUp plugins and other 3D texture tools like SU Solid, Raylectron SketchyMesh, Raylectron Textures Exporter, PixPlant, etc. useful for 3D modeling.

Hope our readers will enjoy this issue as usual. Please provide your valuable feedbacks for more improvements of our magazine.

Hope our readers will like this publication of SketchUp ur Space. We will welcome some helpful feedback from our readers. Please send me your suggestions at [rajib@SketchUp-ur-space.com](mailto:rajib@SketchUp-ur-space.com).



Best Wishes  
**Rajib Dey**  
Editor

**Happy Reading!**

## **Interview with Paul Lee - Virtual Architect & Managing Director at Viewsion Virtual Environments**

**Please make a brief introduction of yourself to our readers.**

I am passionate about creativity and have always enjoyed art and science. I get bored quickly if I'm not using my brain and expanding my knowledge so it was very natural that I would end up working for myself. I have mastered the art of drawing and painting at a young age and was tempted to go to art college. Luckily I didn't do that because college generally makes you dislike what you already liked so I went to architecture school. Somehow though, I still love architecture.

**When do you first discover SketchUp & start to utilize it in your project?**

In 2006 I was setting up my architecture business- Aspire Architecture- (which is currently undergoing a revamp) and I was using CAD. The amount of work it took to create the required information was so great that I knew that 2D information was not sufficient or even viable for doing my work. I looked at a few 3D packages and an architect friend of mine mentioned SketchUp. She said it was pretty cool but I had no idea how cool it was going to be. Once I started using it I was hooked. Game over.

**How did you get inspired to become a virtual architect?**

Since graduating from architecture school at the Dublin Institute of Technology in 1996 I have gravitated towards using technology as a way of solving the problems that exist within the business of construction. That is why SketchUp, which is the most direct system I know of for bringing a concept into digital form was very attractive to me and I decided to make the leap from CAD to SketchUp in 2006 and then to form Viewsion training centre in 2008 with a business partner- Alan O'Brien who is an IT professional.

**Can you differentiate SketchUp as a most simplified tool in comparison with other 3D modeling tools?**

SketchUp is a fast modeling system. I have heard many competitors make this point- not just SketchUp enthusiasts. It is also very adaptable and can be used in many different industries from architecture/ construction/ engineering to product design and virtual movie sets. The range of applications is virtually endless (pardon the pun)

**How do you evaluate SketchUp?**

The mistake that many people make is that because SketchUp is so fast, that they imagine that it's not so "deep". This is unfortunate, because SketchUp can effectively replace CAD (as a 2D paradigm) as it exports dwg and dxf as well as many other filetypes. My point is that there is no excuse for generating information in 2D anymore. Now that 3D is easy and accessible and can deliver the 2D information, it's not very clever to keep doing the 2D thing. In addition, SketchUp has strong Building Information Modeling (BIM) credentials, as it does accurate 3D, 4D (construction sequencing), 5D (cost analysis) 6D (Facilities Management Model) and 7D (energy analysis). It also does Construction Documents as detailed in my



**Please point some cons about SketchUp?**

One thing that really bugs me about SketchUp is there are no built-in "Mirror" or "Fillet" commands. I know there are plugins available for these function but it does make SketchUp look silly to CAD users that it isn't a standard feature.

Another point is that because SketchUp is effectively a replacement for 2D CAD, they are afraid to market it as such. I can't understand this, and have been saying it for years.

**You also work as teacher cum trainer for SketchUp. Please share your experience with our readers.**

I started teaching in 2001 in St. John's Central College, Cork City, Ireland. I taught architectural drafting, tech drawing, and CAD. I wrote a course to show how CAD should be used in an office environment because there was no effective course for this and standard CAD courses were academic in nature and did not prepare people for the workplace. When I discovered SketchUp and realised it's potential, 2D CAD was over for me.

In 2008 I started Viewsion Virtual Environments with Alan O'Brien who is an IT consultant.

**What upgradations should be included in SketchUp for architectural modeling in near future?**

I believe that SketchUp should have better 2D tools. The course I wrote illustrates a very effective workflow for using SU Pro for this purpose and as such it is a very good set of exercises in their own right. However, SketchUp should have some effective tools to automate this process.

Cost analysis is an extremely important aspect for SketchUp that should be capitalised upon.

I would also like to see effective export options for the IFC format.

**The SketchUp has been acquired by Trimble but we do not find significant developments for launching new plugins for SketchUp. What are your opinions?**

To be honest I don't know how the transition has affected the development of plugins. I hope that Trimble takes this aspect seriously and engages with programmers to keep SketchUp fluid, open and exciting. Enjoyability is a major factor that many of the software vendors ignore- I would say "Ignore enjoyability of software at your peril!" as creativity is becoming more important as a factor.

**What suggestions do you want to provide for budding architects & newbie SketchUp users?**

I would say to architects- don't fall into the trap of thinking that you are being prepared to work in an office for someone else and just designing buildings. Think outside of the traditional career structures- Even construction itself is going to become more like product design and virtual modeling is going to increase in importance. Video and Tablet interfaces are extremely important to understand and to learn how to manipulate. Learn to use the tools that suit the task you are engaging in, and don't get "snobby" about software- That attitude will turn you into a dinosaur pretty fast!

**Did you find our magazine useful for SketchUp users and why?**

SketchUp ur Space has a lot of resources for those interested in the platform. I like the emphasis on interviews and it's important to have focus on new and important developments for the SketchUp community.

[Construction Documents using SketchUp Pro - Publication from Viewson](#)

# Apply SketchUp shortcuts to increase the speed of 3D modeling process

SketchUp is a very helpful tool which can easily generate 2d and 3D drawings. The software is very popular among architects, civil engineers, 3d makers, freelancers, game designers, production designers etc. due to its user-friendly interfaces.

SketchUp contains a wide range of shortcut keys which will provide great assistance to SketchUp professionals and experts to accelerate their drawing procedure. The shortcuts will help you to save huge amount time while creating a model.

SketchUp contains several preset keyboard shortcuts but one can make its own custom keyboard shortcuts. It will surely help users to make a best possible interface to fit the way you utilize SketchUp. The users will be able to make its own shortcuts and in order to do that the users have to visit Window-Preferences-Shortcuts. From the scroll menu, chooses a few actions and allocate a keyboard shortcut to active/toggle that action. Don't choose a shortcut which exists with another action before now as it will show you an error message.

These shortcuts are assigned to the mouse and to the keyboard. Trimble has launched a reference card which contains the huge lists of shortcut keys. This reference card is related with SketchUp 8.

## SketchUp 8 Quick Reference Card



## Windows

Tool	Operation	Instructions
Axis (A)	Edge Radius Segments	specify edge amount by typing a number and Enter specify radius by typing a number, the R key, and Enter specify number of segments by typing a number, the S key, and Enter
Circle (C)	Shift Radius Segments	lock in current place specify radius by typing a number and Enter specify number of segments by typing a number, the S key, and Enter
Erase (E)	Ctrl Shift Ctrl-Shift	use eraser to make adjacent faces appear curved hide unfreeze/unsmooth
Follow Me	All Select Key	use face perimeter as extrusion path first Select path, then choose the Follow Me tool then click on the face to extrude
Line (L)	Shift Arrows Length	lock in current direction up or down arrow to lock in blue direction; right to lock in red; left to lock in green specify length by typing a number and Enter
Look Around	Eye Height	specify eye height by typing a number and Enter
Move (M)	Ctrl Shift Arrows Distance External Array Internal Array	move a copy hold down to lock in current reference direction auto field follow move even if it means adding extra edges and faces up or down arrow to lock in blue direction; right to lock in red; left to lock in green specify move distance by typing a number and Enter n copies in a row; move first copy, type a number, the X key, and Enter n copies in between; move first copy, type a number, the / key, and Enter
Offset (F)	Distance-Click Distance	apply last offset amount to this face specify an offset distance by typing a number and Enter
Orbit (O)	Ctrl Shift Ctrl-Shift	hold down to disable "gravity-weighted" orbiting hold down to activate first tool point all matching adjacent faces point all matching faces in the model point all matching faces on the same object
Push/Pull (P)	All Ctrl Distance-Click Distance Dimensions	hold down to sample material push/pull a copy of the face (leaving the original face in place) apply last push/pull amount to this face specify a push/pull amount by typing a number and Enter specify dimensions by typing length, width and Enter in: 2D, 3D
Rectangle (R)	Ctrl Angle Edge Length	create a copy specify an angle by typing a number and Enter specify an angle to a shape by typing a name, a corner (C), a run, and Enter in: 3,12
Rotate (Q)	Ctrl Shift Amount Length	hold down to rotate uniformly (don't distort) specify a rotate factor by typing a number and Enter in: 1.5 + 150% specify a rotate length by typing a number, a unit type, and Enter in: 10in
Select (Spacebar)	Ctrl Shift Ctrl-Shift	add to selection subtract from selection add/subtract from selection
Tape Measure (T)	Ctrl Arrows Release Shift	create a new Guide up or down arrow to lock in blue direction; right to lock in red; left to lock in green release model minimum a distance, type intended size, and Enter hold down and click-drag mouse to change Unit of View
Zoom (Z)	Shift	

Given below some important keyboard shortcuts compatible with SketchUp 7 & 8. The shortcuts will facilitate users to generate models quickly and efficiently.

### Shortcut Keys for SketchUp 8

Name of keystroke	Application	SketchUp Version
A	Arc	8
B	Paint Bucket	8
C	Circle	8
E	Eraser	8
L	Line	8
M	Move	8
O	Offset	8
P	Push/Pull	8
Q	Rotate	8
R	Rectangle	8
S	Scale	8
Select	Spacebar	8
Zoom Extent	Shift+Z	8

### Shortcut Keys for SketchUp 7

**Select Tool (Spacebar)**  
Ctrl = Add to selection set  
Shift = Toggle in/out of selection set  
Shift+Ctrl = Subtract from selection set  
Ctrl+A = Select all

**Eraser Tool (E)**  
Shift = Hide  
Ctrl = Soften/Smooth  
Shift+Ctrl = Unsoften/Unsmooth

**Rectangle Tool (R)**  
MTB: Length, Width

**Circle Tool (C)**  
Shift = Lock to current orientation  
MTB: Number+s = Segments  
MTB: Number = Radius

**Polygon Tool**  
Shift = Lock to current orientation  
MTB: Number+s = Segments  
MTB: Number = Radius

**Move Tool (M)**  
Shift = Lock to current axis  
Arrow keys = Toggle axis lock  
Ctrl = Toggle copy  
Alt = Toggle auto-fold  
MTB: Number = Distance

**Rotate Tool (Q)**  
Ctrl = Toggle copy  
MTB: Number = Angle  
MTB: Rise/Run = Slope

**Scale Tool (S)**  
Shift = Scale uniformly  
Ctrl = Scale about center  
MTB: Number = Scale factor  
MTB: Number w/ units = Length

**Tape Measure Tool (T)**  
Ctrl = Toggle create construction geom  
Arrow keys = Toggle axis lock  
MTB: Number = Resize model

**Protractor Tool**  
Ctrl = Toggle create construction lines

**Axes Tool**

**Orbit Tool (O)**  
Shift = Pan  
Ctrl = Free

**Zoom Tool (Z)**  
Shift = Change field of view

**Previous**

**Position Camera Tool**

**Walk Tool**

**Paint Bucket Tool (B)**  
Ctrl = Adjacent fill  
Shift = Replace  
Shift+Ctrl = Adjacent replace  
Alt = Sample material

**Make Component (G)**

**Line Tool (L)**  
Shift = Lock to current axis  
Arrow keys = Toggle axis lock  
MTB: Number = Length

**Arc Tool (A)**  
MTB: Number = Bulge  
MTB: Number+s = Segments  
MTB: Number+r = Radius

**Freehand Tool**  
Shift = Draw 3D Polyline

**Push/Pull Tool (P)**  
Ctrl = Toggle new starting face  
Double-Click = Repeat  
MTB: Number = Distance

**Fellow Me Tool**  
Alt = Use perimeter of surface as path

**Offset Tool (F)**  
Double-Click: Repeat  
MTB: Number = Length

**Dimension Tool**

**Text Tool**

**3D Text Tool**

**Pan Tool (H)**

**Zoom Extents Tool (Shift+Z)**

**Next**

**Look Around Tool**  
MTB: Number = Eye height

**Section Tool**

**Dynamic Components toolbar**

**Interact Tool**

**Component Options**

**Component Attributes**

**Google toolbar**

**Get Current View**

**Toggle Terrain**

**Place Model**

**Get Models**

**Share Model**

**Face Style toolbar**

**X-Ray**

**Wireframe**

**Hidden Line**

**Shaded**

**Shaded With Textures**

**Monochrome**

**Shadows toolbar**

**Display Shadows**

**Shadow Settings**

**Middle Button (Wheel):**  
Click-Drag = Orbit  
Shift-Click-Drag = Pan  
Double-Click = Re-Center View  
Scroll = Zoom

**Left Button:**  
Click = Tool Operation

**Right Button:**  
Click = Context Menu

**Sandbox toolbar**

**From Contours Tool**

**From Scratch Tool**

**Smooove Tool**

**Stamp Tool**

**Drape Tool**

**Add Detail Tool**

**Flip Edge Tool**

**Views toolbar**

**Iso**

**Top**

**Front**

**Right**

**Back**

**Left**

**Layers toolbar**

**Layer Manager**

**Sections toolbar**

**Display Section Cuts**

**Display Section Planes**

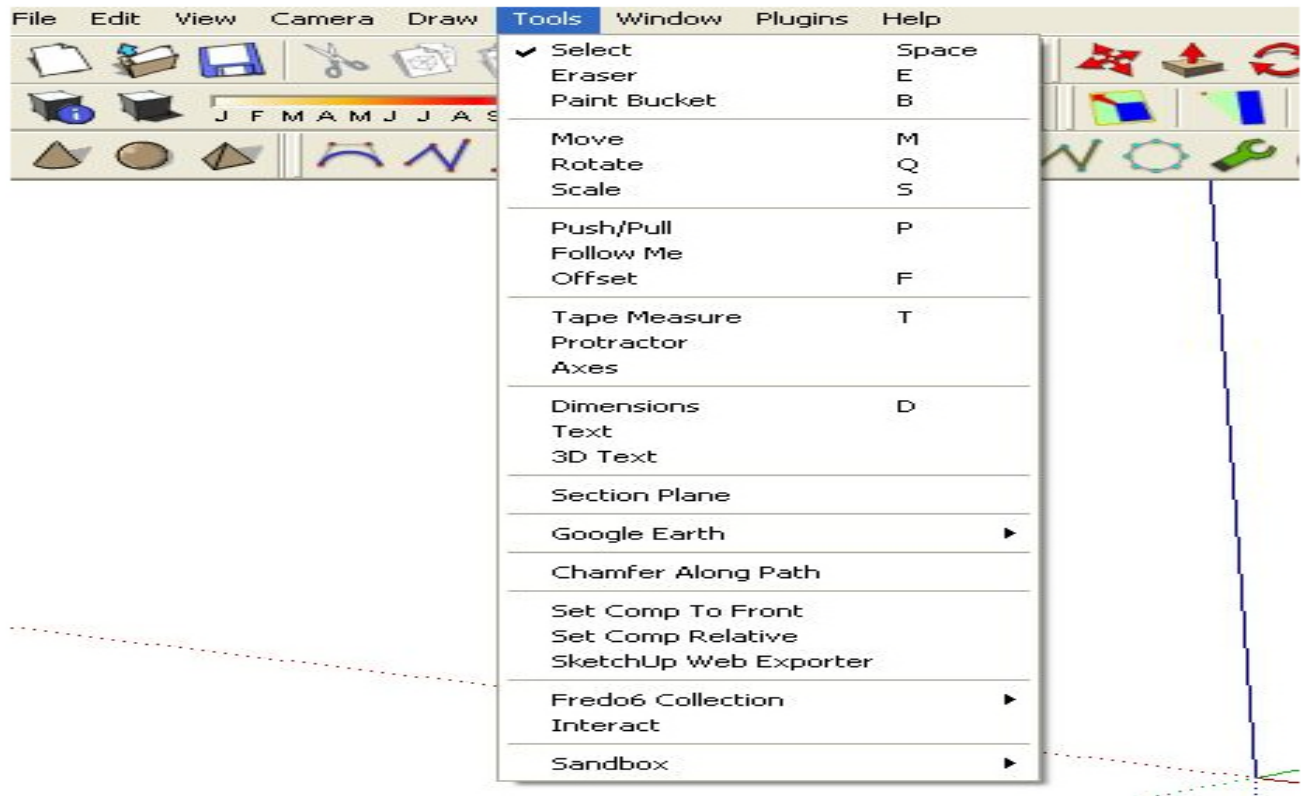
**SketchUp 7 Quick Reference Card**  
Copyright 2008 by 3ds Max



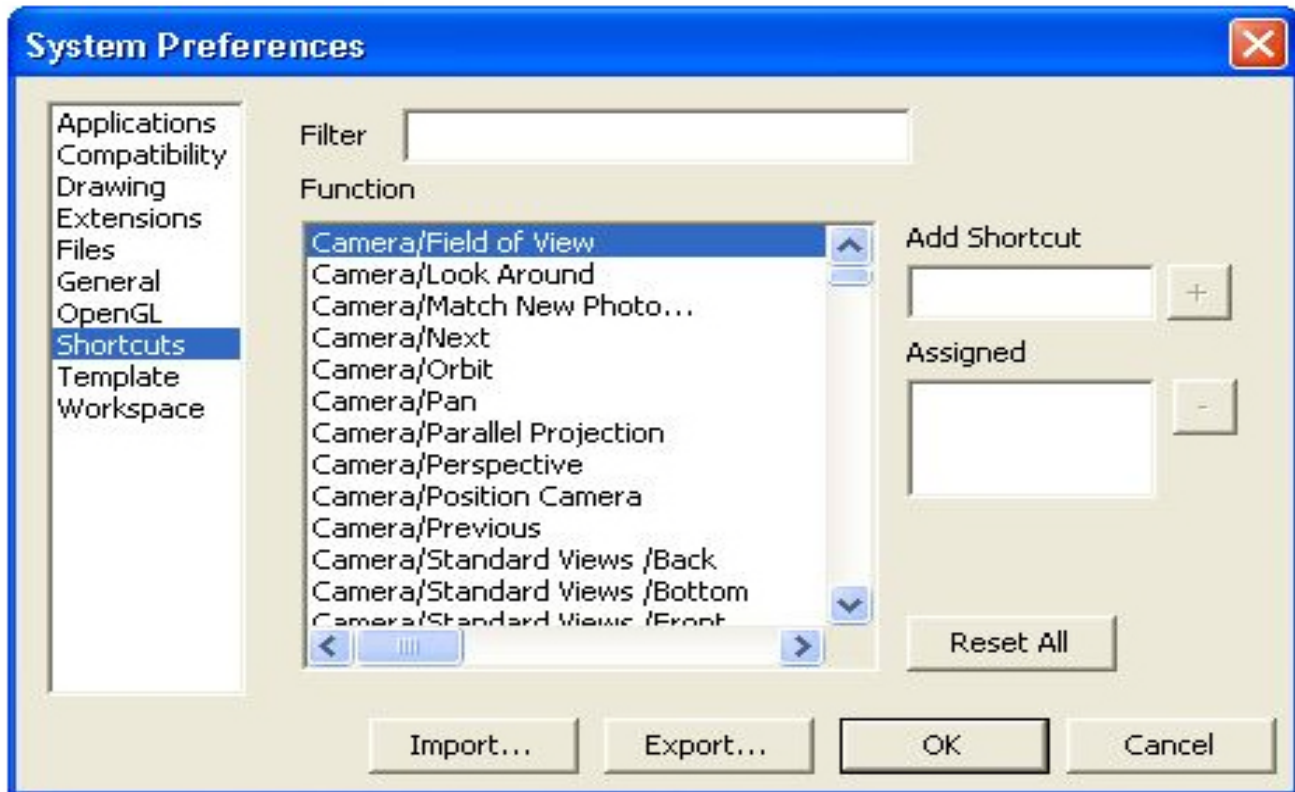
Mouse also plays an important role for applying shortcut tricks. If you press left button of the mouse it will help you to select an object easily. Apply right button of the mouse after choosing a geometry and it will unveil a context menu from where the users can pick up a wide array of functions to accomplish any task.

Middle button alias wheel is utilized to zoom in and zoom out. Press it and drag, the user will be able to orbit just about the model. Push the shift key, click on the wheel and drag your mouse to apply the pan tool. Double click to re-center the view.

If you want to view the detailed lists of shortcuts, visit the menu bar and select "Tools" bar. You will see that all shortcuts are assigned with capital letters.



In order to view the shortcut control panel, choose window on the Menu Tab. Go to preference and click on it. Now a dialogue box will arrive, here choose shortcuts. To load , click on the import button and select preference.dat.



Now apply the filter key to search for the Protractor tool. Select the key which you would like to set as your shortcut key and press enter.

Get on that small "+" icon on the right and selected shortcut will be assigned. Click on "OK" to close the dialog box.

To get accustomed with the shortcut keys, the user has to make continuous exercises.

## Reinventing the wheel

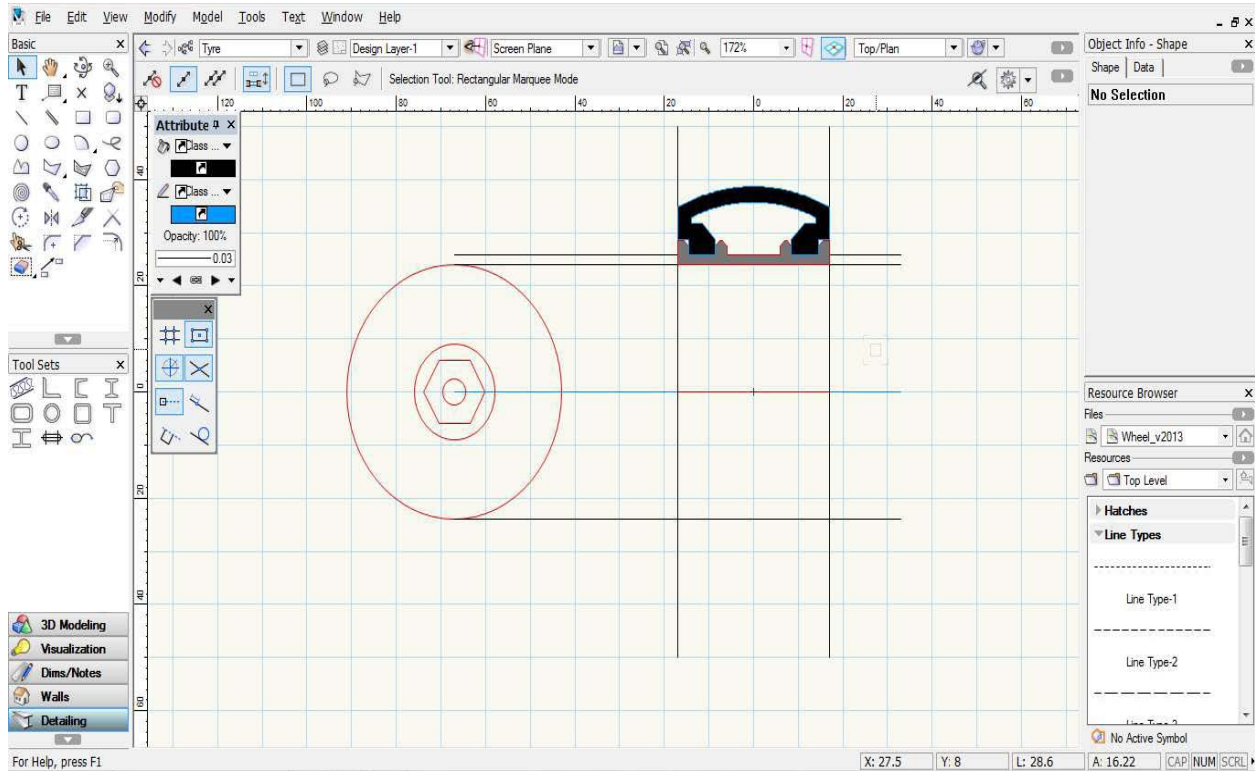
Measuring a wheel as a starting point, in this case a wheel from a radio controlled model Tamiya Madcap.

Basic measurements such as diameter and central hex size were taken, as were wall thicknesses to use as a rough guide to start the modelling.



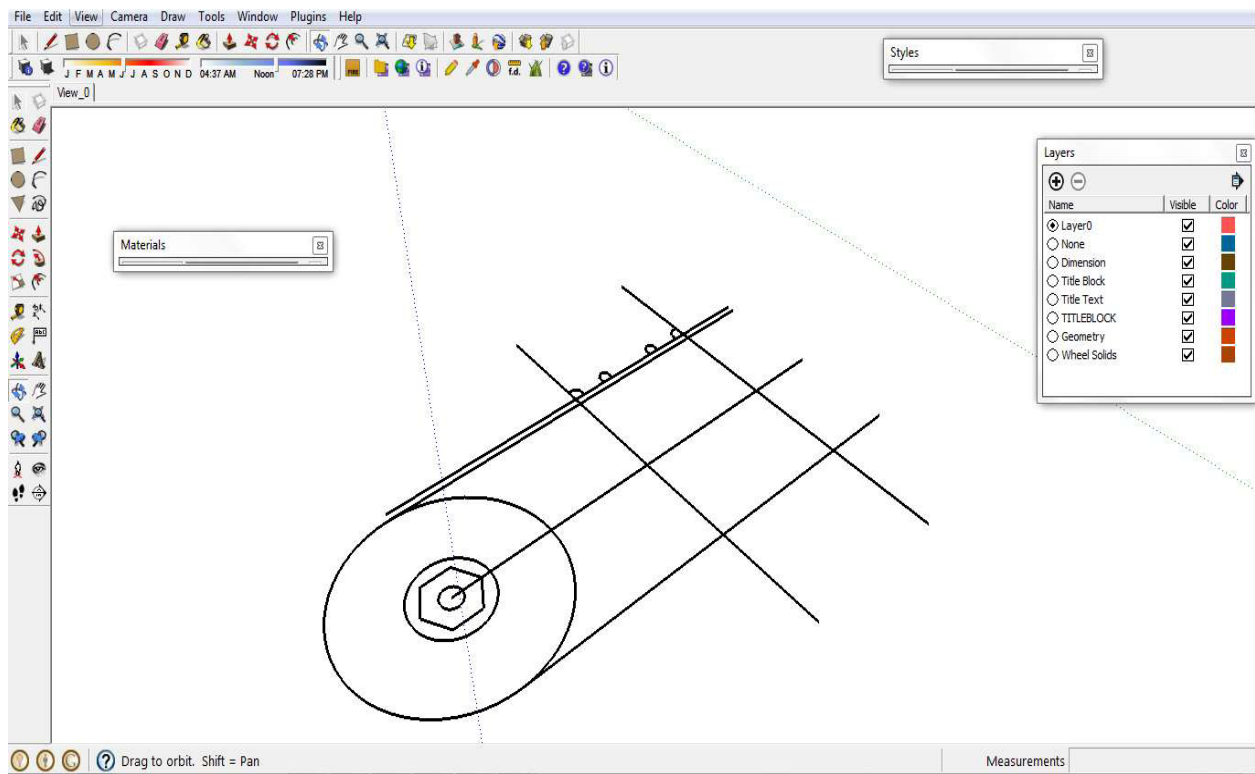
I began working in a CAD drawing programme, to set out the wheel section, and tyre diameters.

I chose not to model this wheel in Vectorworks as it was a programme I was comfortable working in 2D in, but I just couldn't get the hang of 3D in this release of Vectorworks.



I exported the model as a .dwg and imported it into Sketchup 8 Pro.

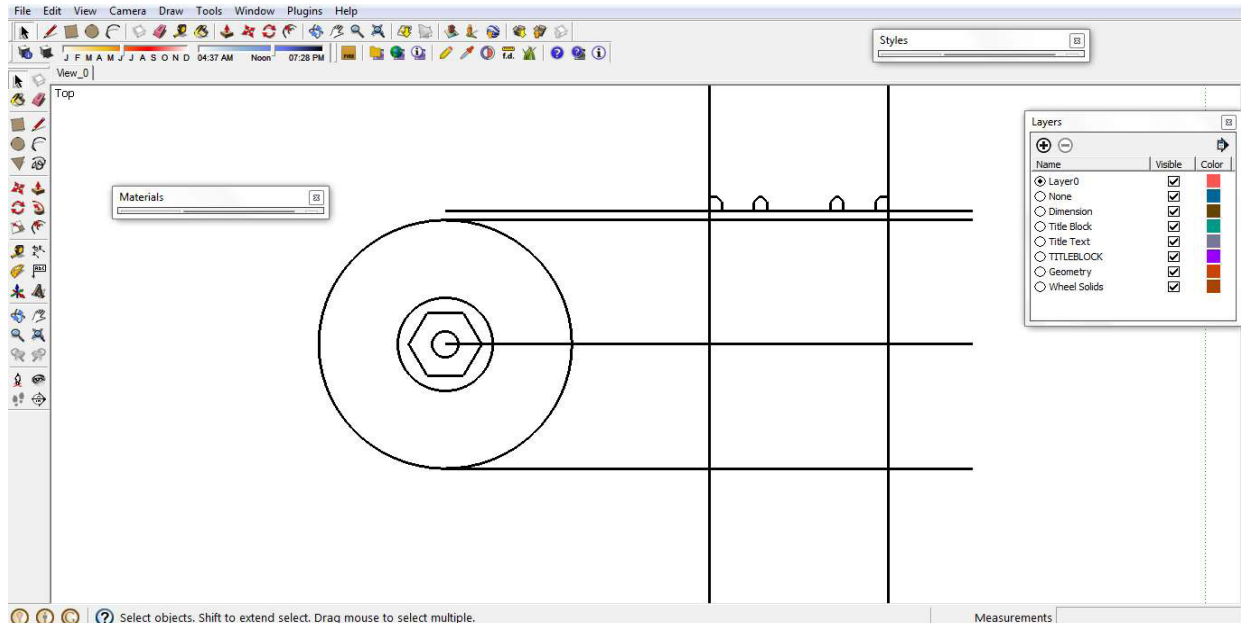
You will need a Pro version to import and export .dwg files.





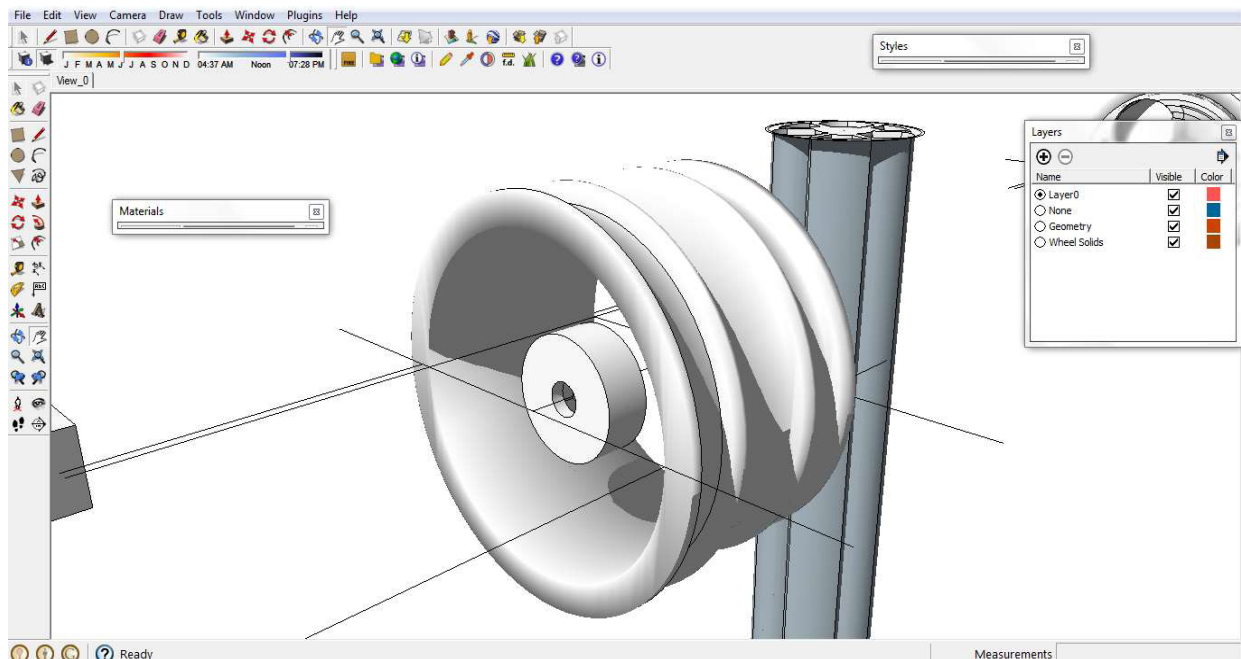
Bringing in the .dwg, I was pleased to see that Sketchup had recognised the groups and blocks from the original drawing. This makes life much simpler to organise the model.

Everything is drawn Layer 0, and then groups and components are assigned to other layers as needed to turn sections of the model on and off when in the working space.



I imported the dwg and then arranged the groups so that I could perform a 'follow me' command based on the wheel rim section and the circumference of the wheel.

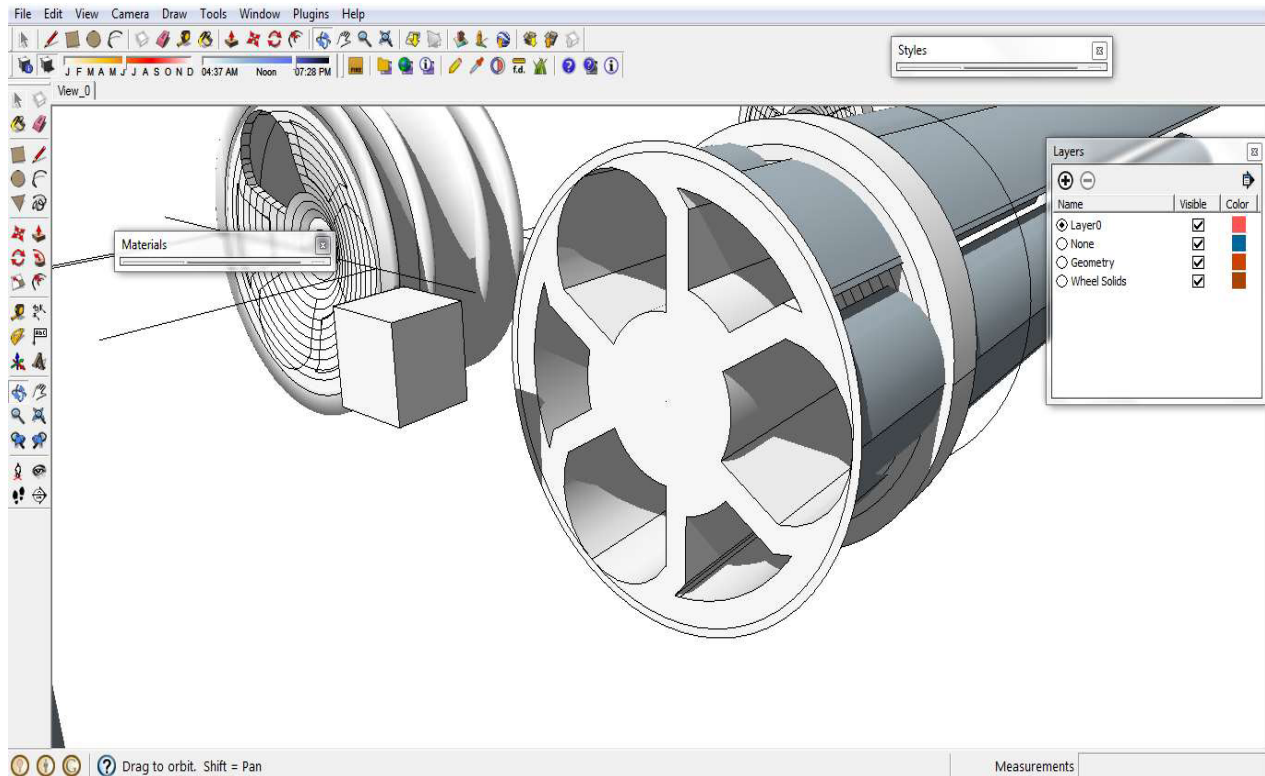
I also modelled the hub at this point and inserted it into the same group as the rim, as I wanted it to be exactly central to the circumference of the rim, this is important for when the wheel is made, as it should rotate in a true rotation.



I tried various ways of modelling the spokes, but just couldn't get the sophistication of profile as I wanted at first...

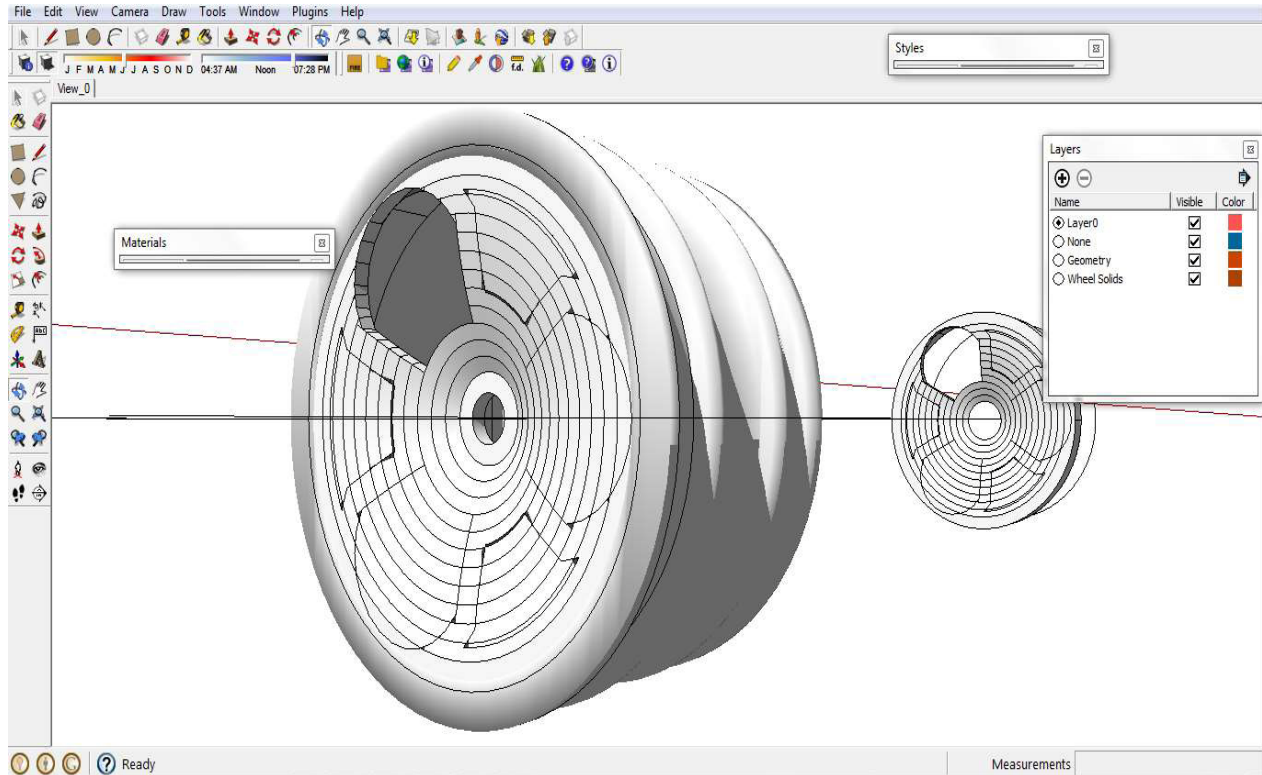
If at first you don't succeed...

And I did try quite a few different approaches until I got what I wanted!



Like I say, I tried quite a few different approaches!

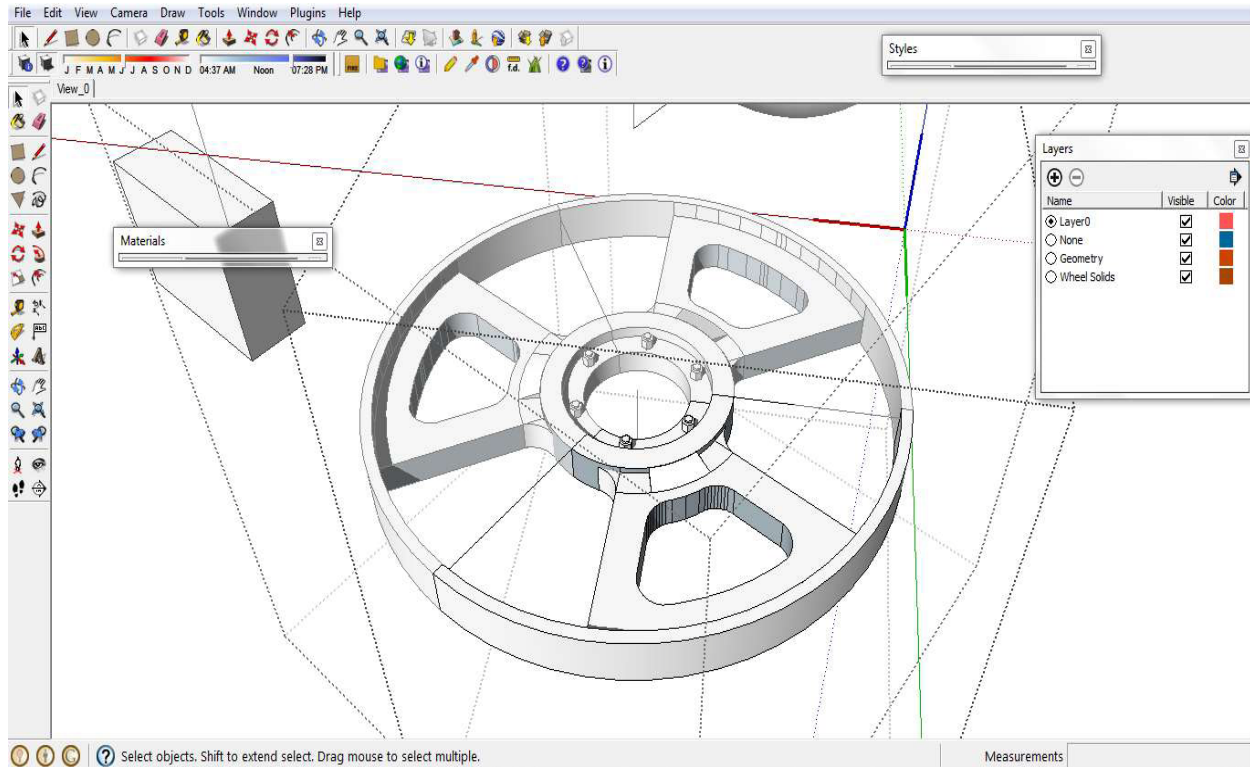
Intersect with model, and push pull, and most of all rotate copies! I learned quite a few new commands doing this model, fortunately there is plenty of help from [www.sketchucation.com](http://www.sketchucation.com)



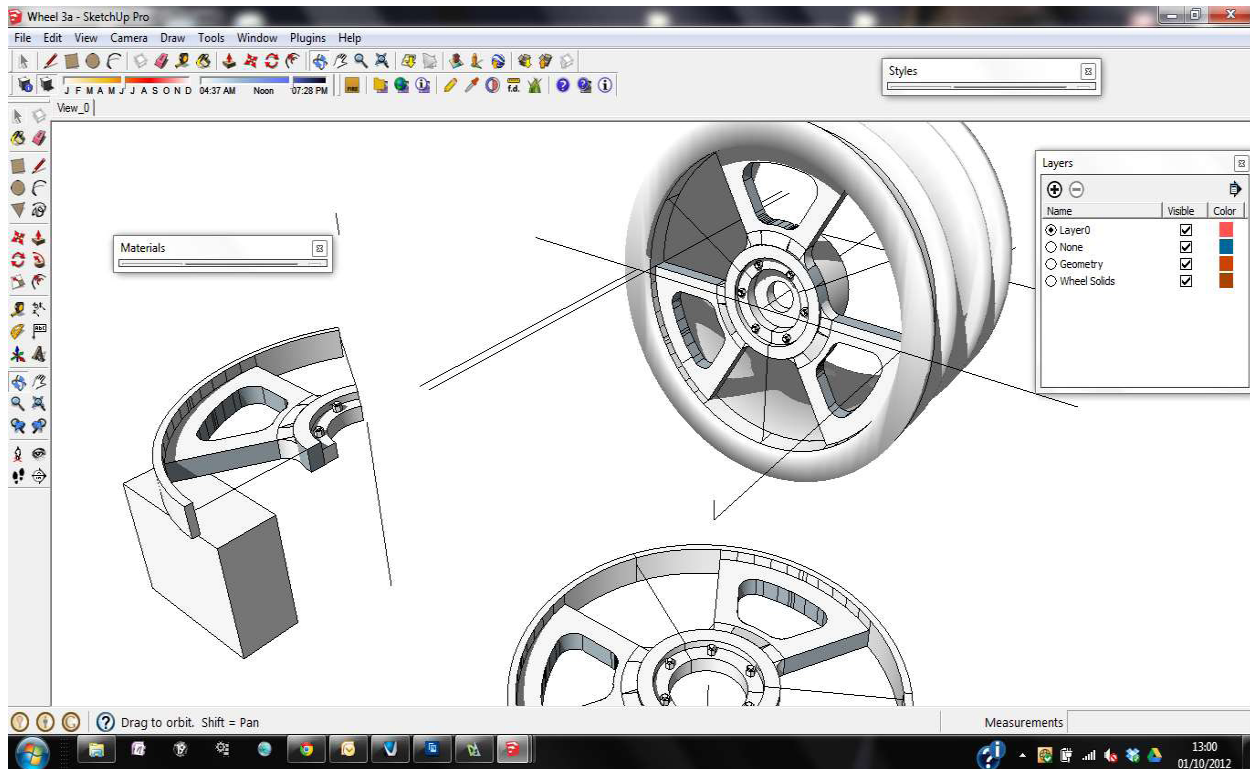
I settled on a fairly flat spoke in the end, choosing to express definition through sculpting a flat disc.

I split the disk into three segments, making a component of each, and reproducing it.

In this way, I reduced the work required to create the spokes by one third!

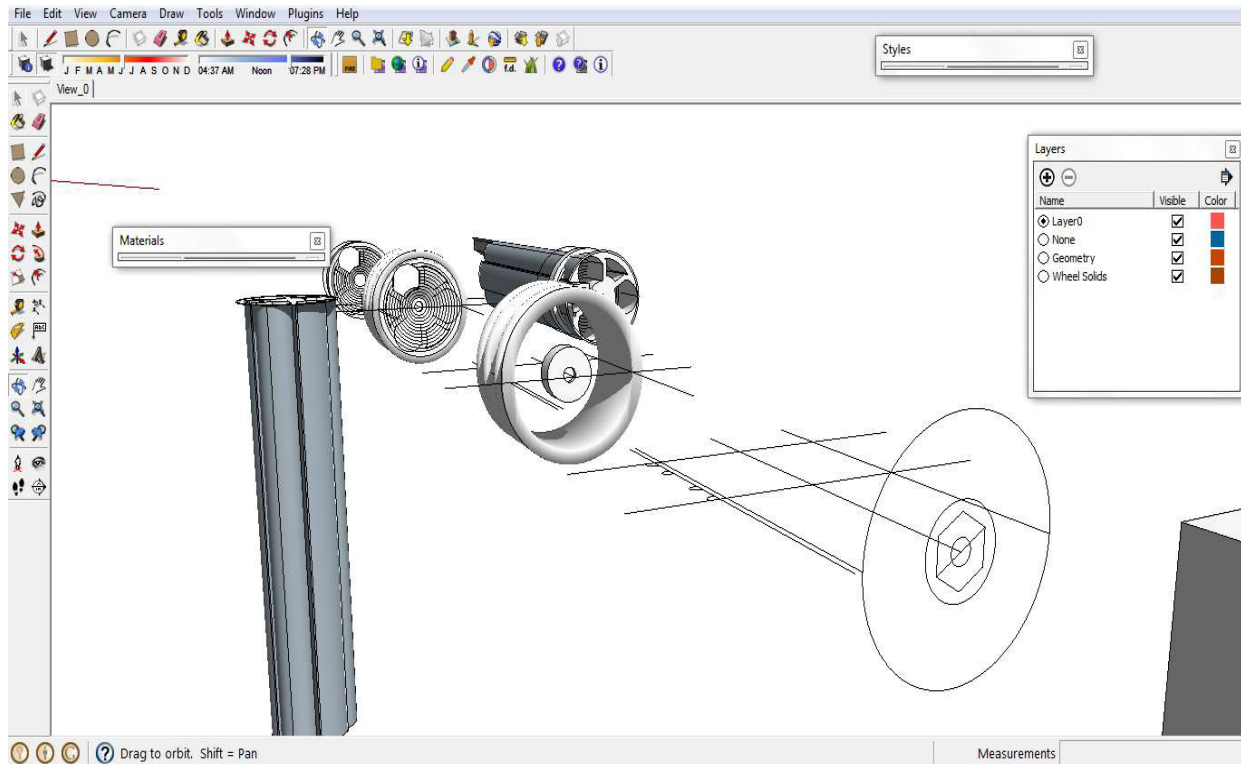


Lining up the rim and the hub and the spokes was simple enough after a few carefully placed guide lines were laid down



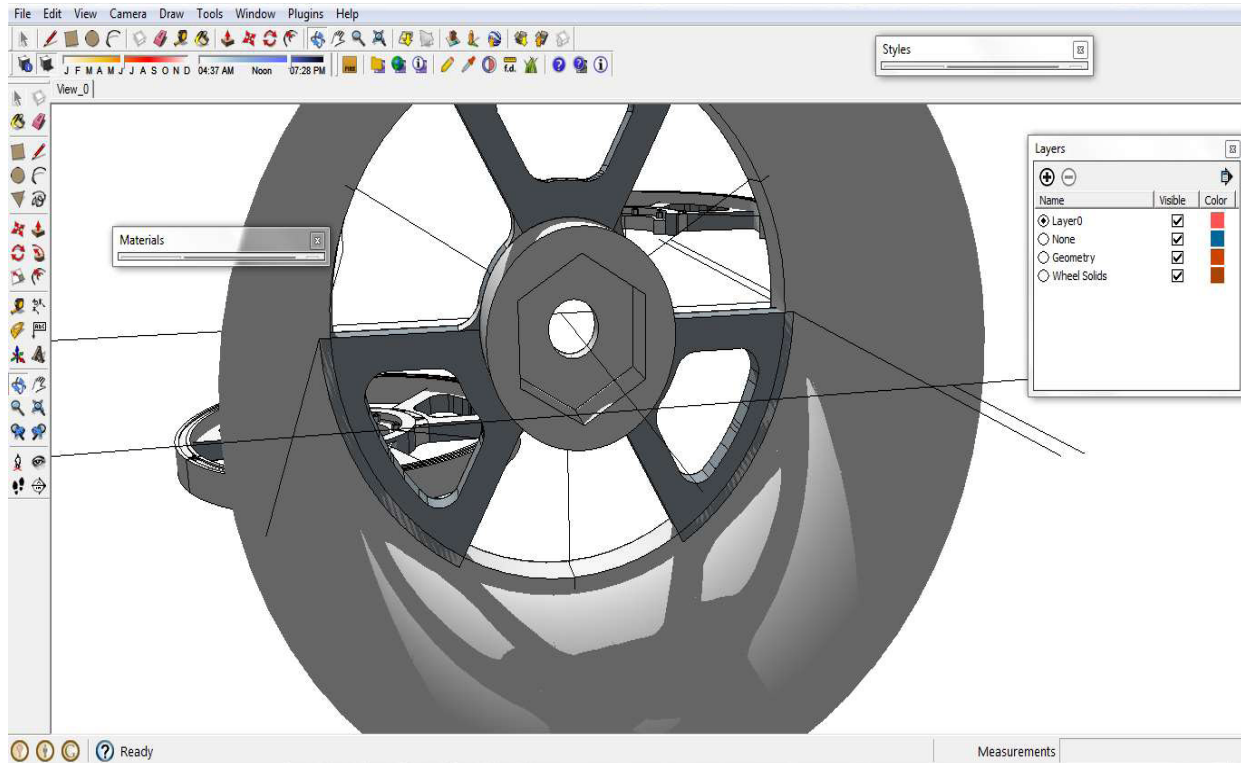


Reflecting on what other models had been discarded on the way to the final model, I realised that nothing is ever wasted. Lessons and tricks were learned, that would be used elsewhere in the model, and in future models.

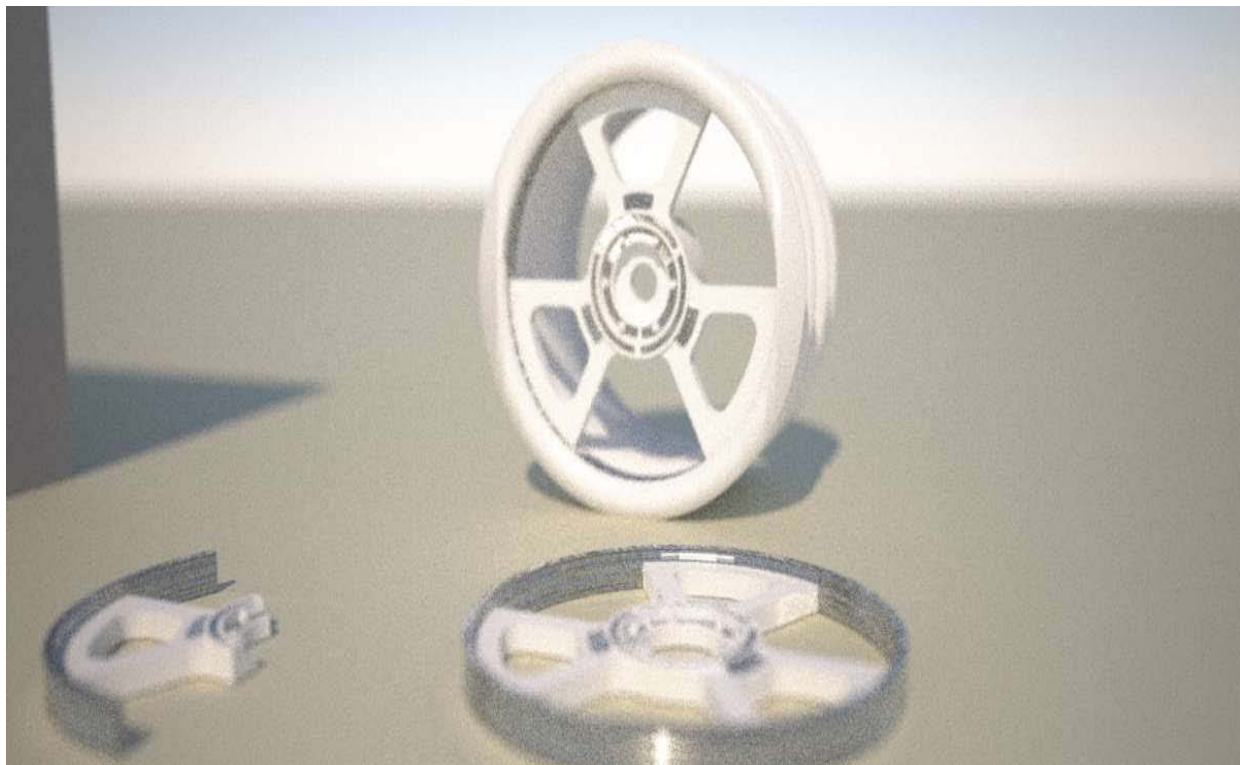


With the model setup in place I wondered how I could export it as a perfect .stl file, which does not contain any internal wall sections, or random faces.

The terminology of an STL file that can be printed is 'manifold' and means the model is of a sufficiently high quality to be 3D printed or Milled on a CNC machine.



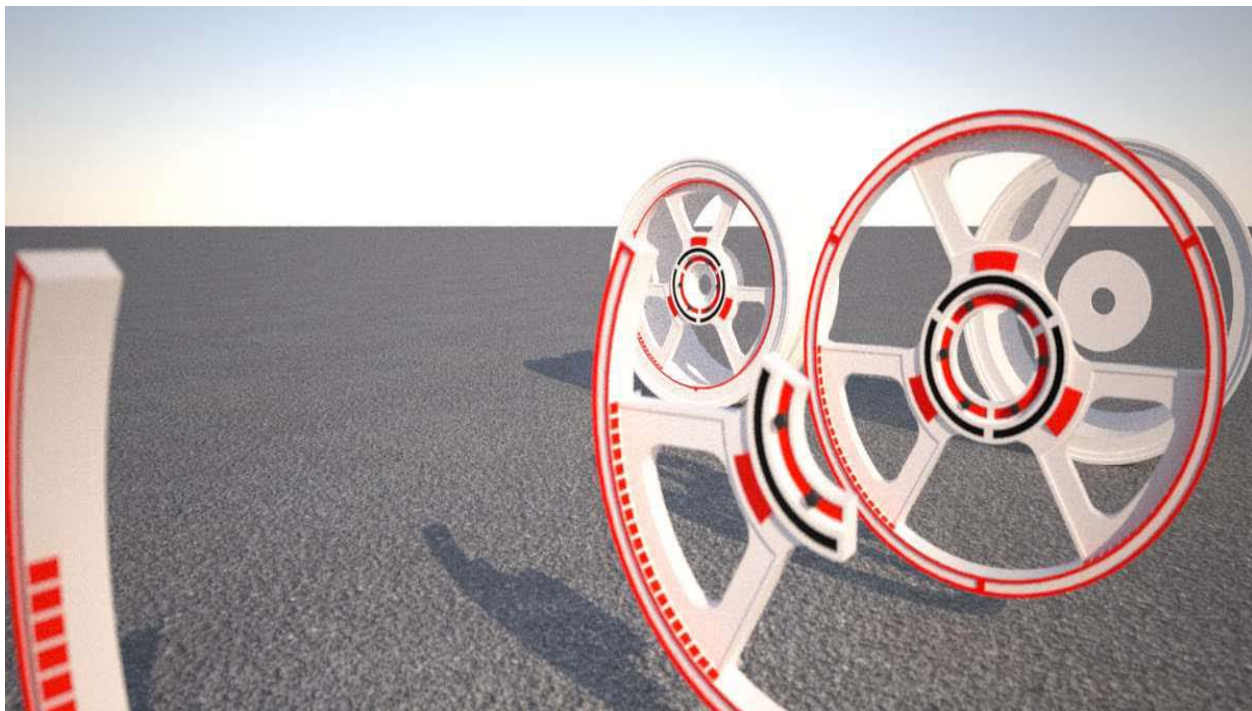
As a break from wondering just how to export a complex, and quite messy model as a perfect manifold STL file I took some time out to play with some photo renders to see what the wheel looked like with accurate reflective materials assigned to it.



I liked what I saw, and pursued the initial renderings with a pro version of Maxwell render for Sketchup, which whilst not providing the quickest turnaround in rendering time, is certainly an affordable and professional level rendering package plugin that works within Sketchup, no messy imports or exports needed!



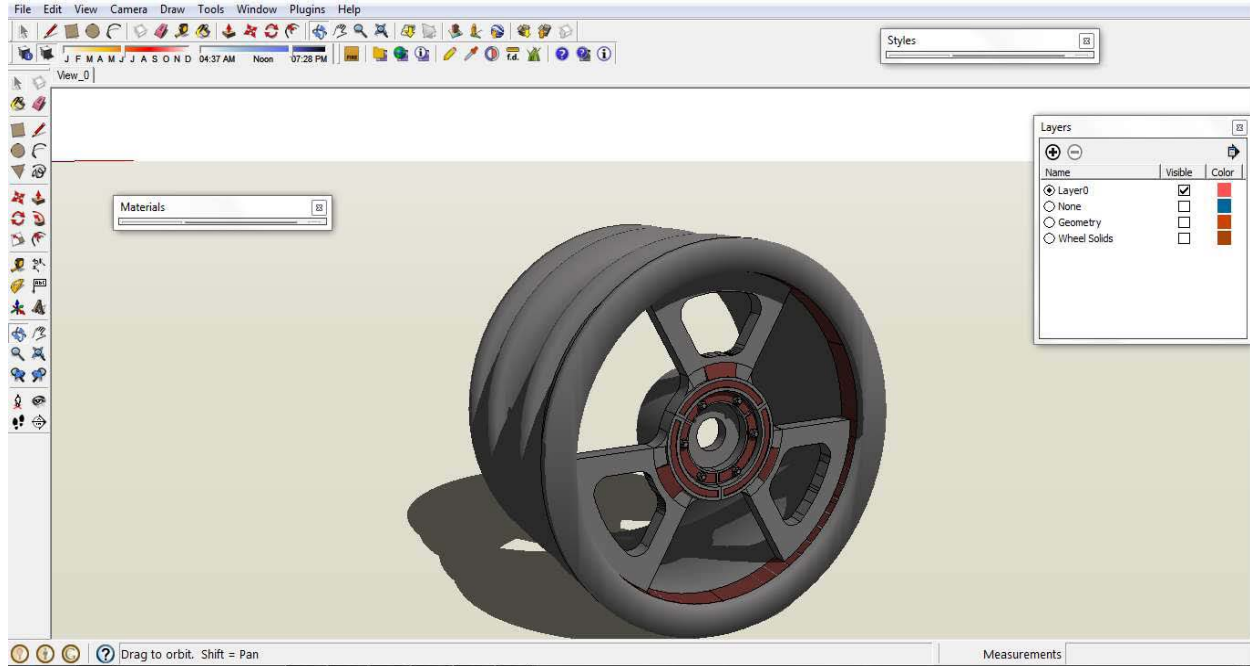
I had some fun with rendering, indeed extending the separate components within the model, as an exploded diagram.





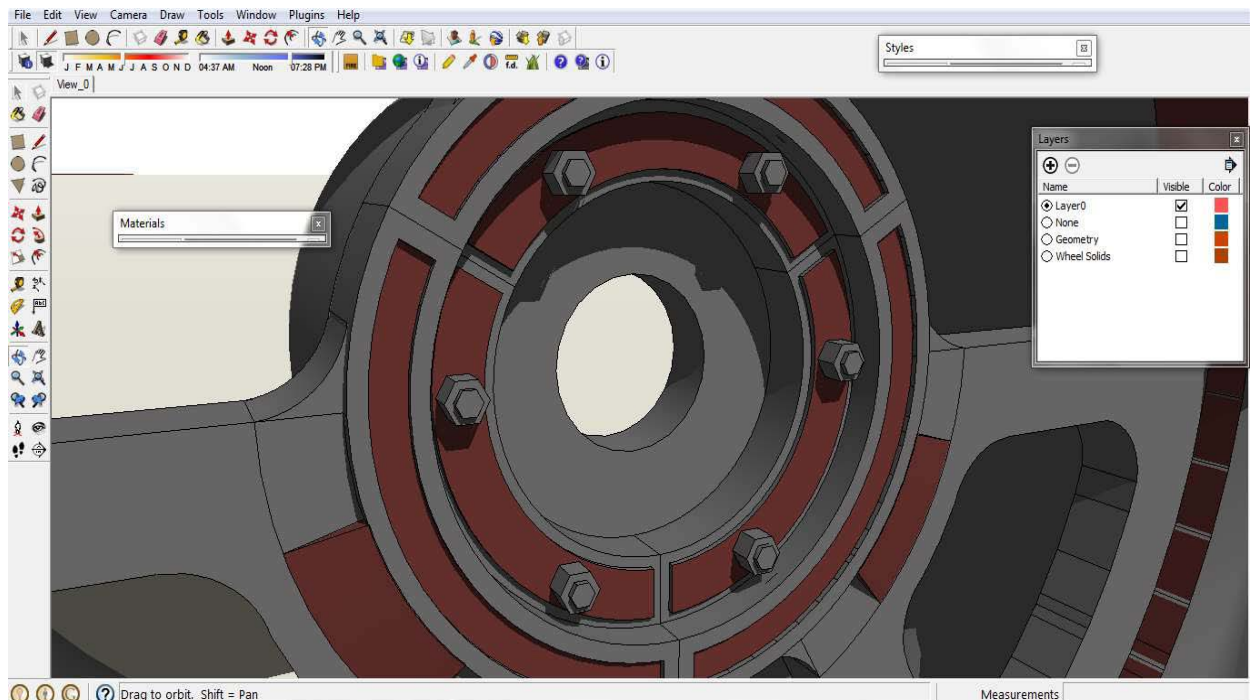
Back in Sketchup I had read about a plug in called CAD SPAN that would promise the ability to 'shrinkwrap' any existing geometry in a single layer of faces, thus the manifold problem had a potential answer!

No more messy geometry!



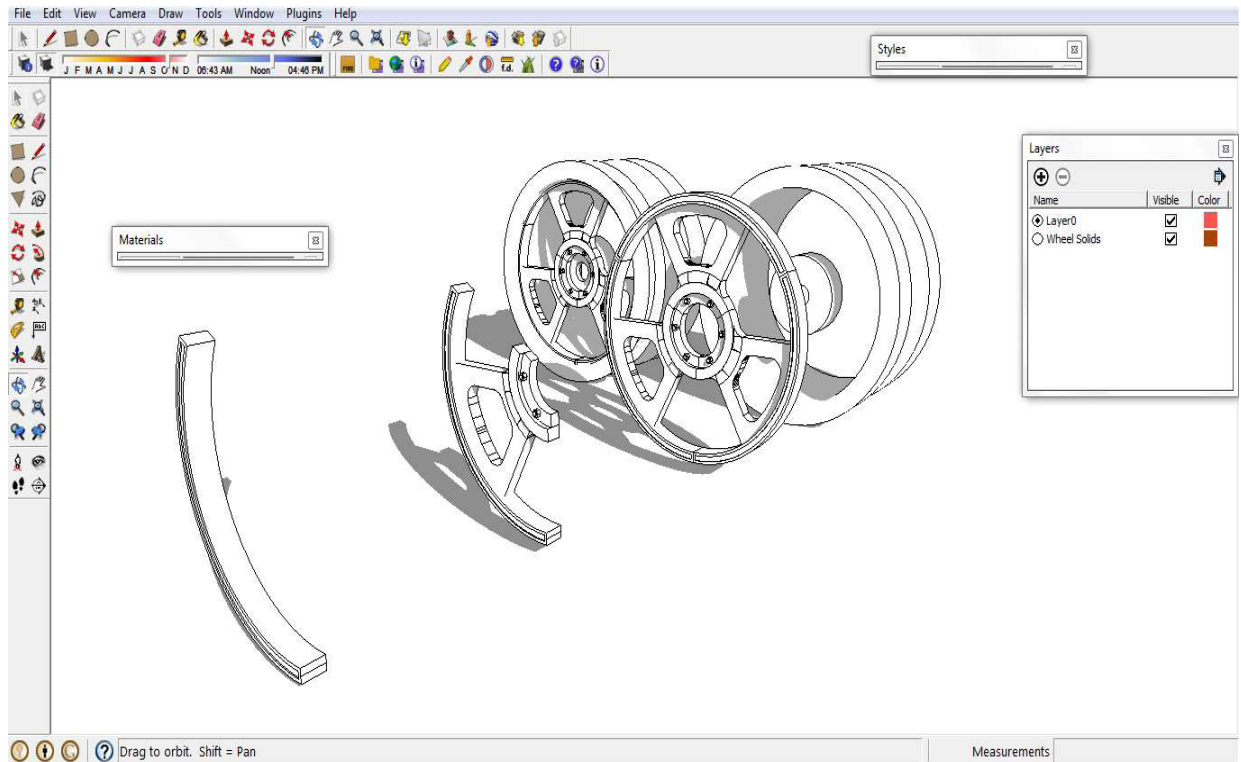
Part of making a manifold shell is that the faces are all orientated the correct way...

The difference in colours here indicate that all is not well with the model and that some face need to be reversed.

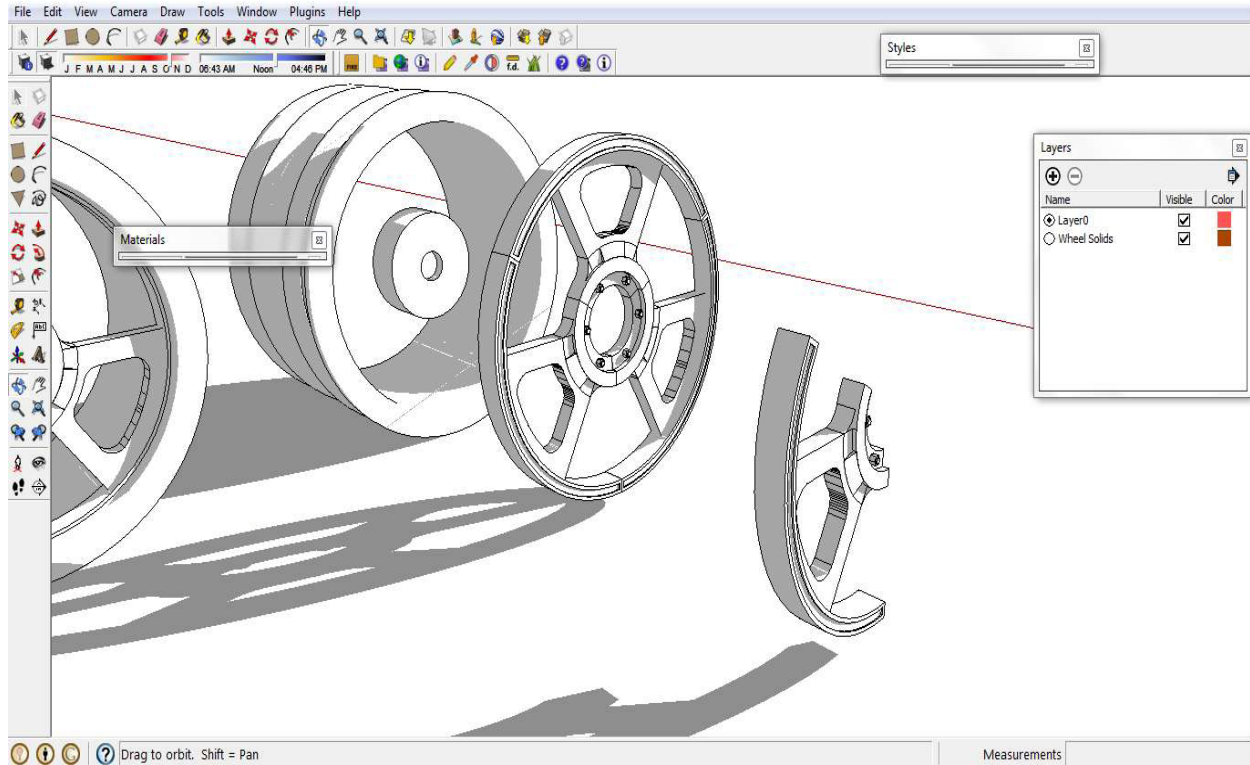




Back to the same Sketchup model that had been used for photo rendering was now being cleaned up to allow 3D printing...

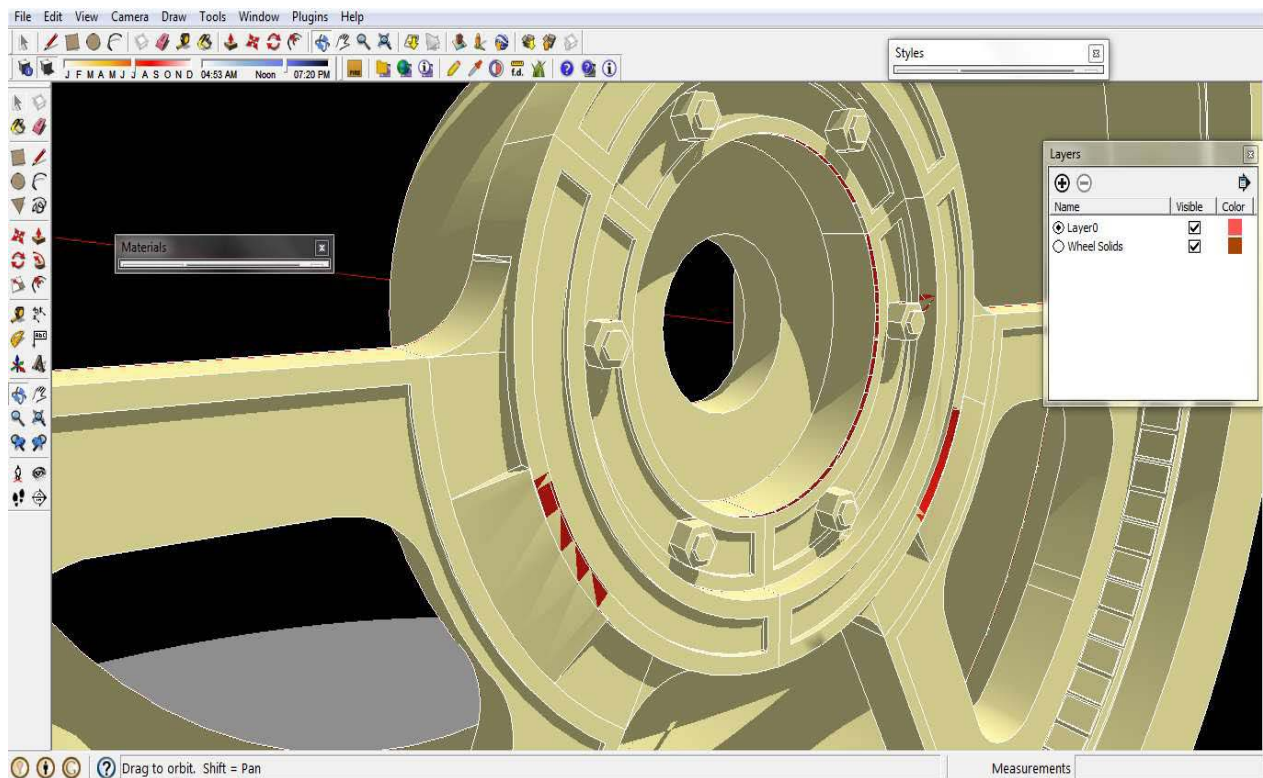


Cleaning up did eventually happen after much investigation of hidden geometry within the model.

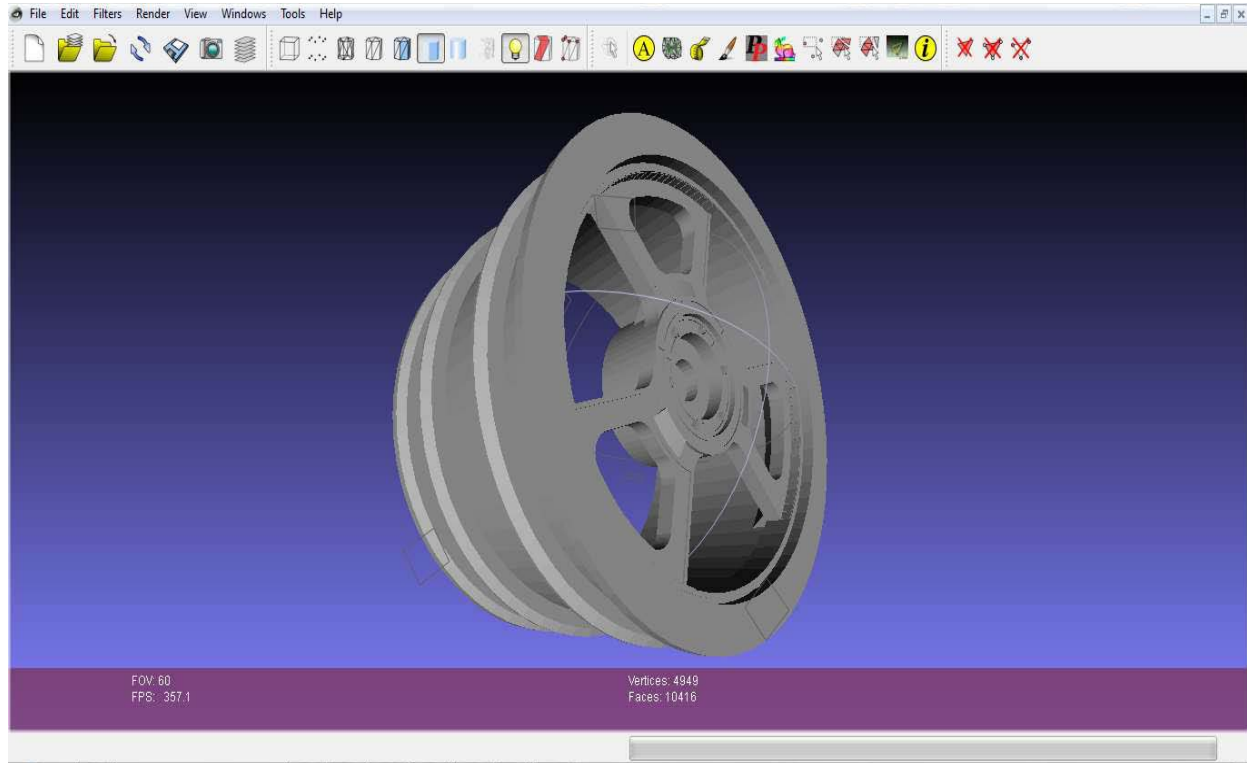


The CADSpan Plug in was very useful for showing various problem parts of the model!

Missing faces, etc. would all have to be fixed before a shrink wrap could be made...



Following exporting from the Sketchup CADSpan plugin, that works within Sketchup, the model was checked for conformity in a free programme called Meshlab... its really quite useful, in case you haven't got the shrink wrapping just right yet. I didn't get it right for half a dozen goes!



Once the wheel was confirmed to be 'Manifold' I Uploaded it to a MakerBot, which is a basic 3D printer, to test to see whether the process had in fact worked...





The model had in fact been accepted as a piece of digital code, and as plastic tubing was melted and squeezed through a nozzle over a moving print platform the wheel emerged over the next 30 minutes

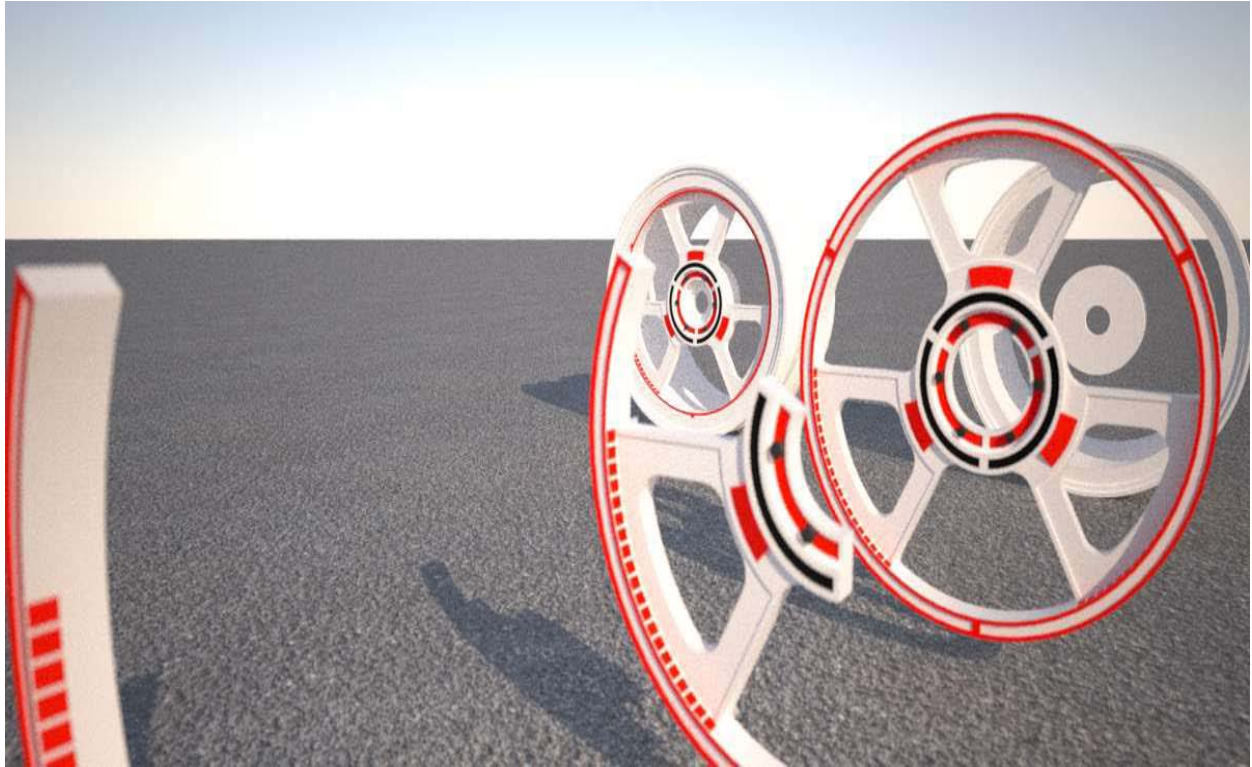


Whilst this model does not have the resolution of a high quality and expensive powder 3D printer, and suffers from melted strings, it does prove that the process is complete and works. The same model, as a digital object could be uploaded to Shapeways or other printing bureau's in a variety of precise and exotic materials.



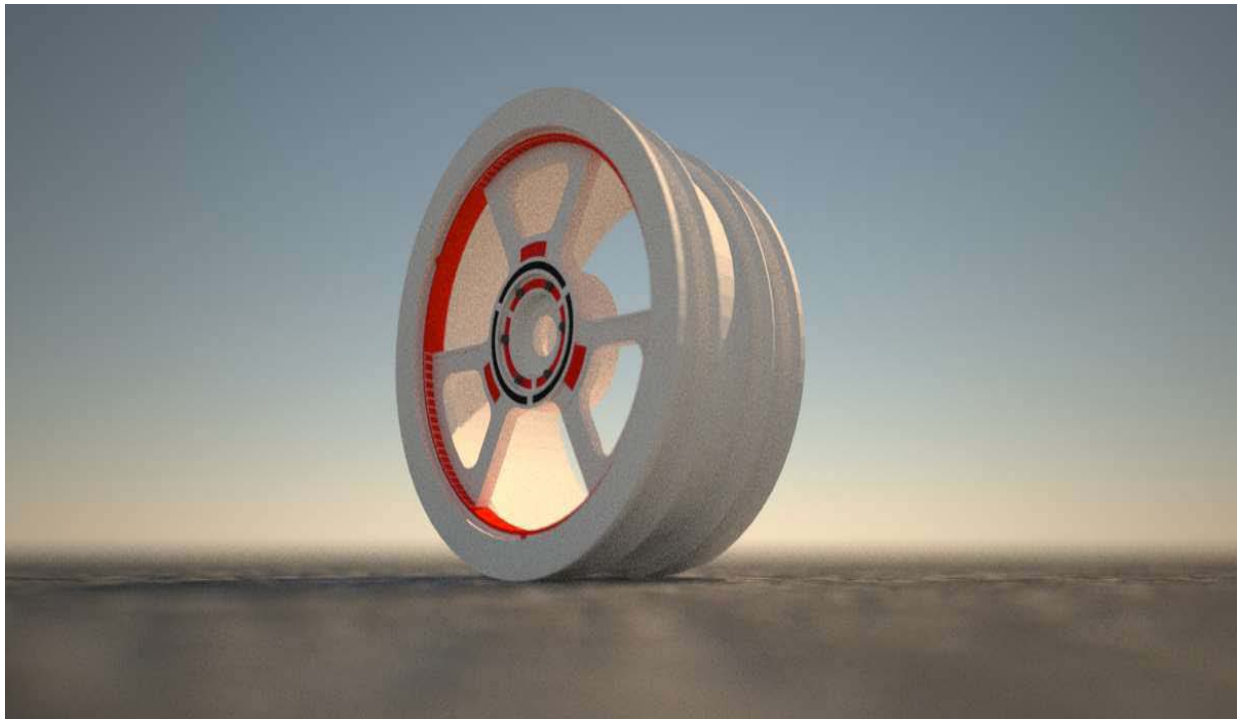
Returning to the same model I looked again at optional colour profiles that could be printed by a 3D powder printer





All in all the process was successful, even if the quality of the final print was a little lower than can be achieved commercially.

It is important not to be discouraged too easily, and remember what has been achieved through the process.



## Creating a Night Scene from a Daytime Drawing



This is a simple method of taking a hand drawing and turning it into a night scene using Photoshop and a couple of very quick digital modifications. I've always struggled to simulate a night time scene with traditional hand drawings. I found it nearly impossible to render the evening illumination from storefronts and the dramatic contrast between dark shadows and lighted spaces....until now!

A quick and effective way of creating the wonderful quality of evening light is to layer over your hand drawing with a transparent black overlay in Photoshop, then erase portions of it where the light occurs. I created this sketch for a recent [studioINSITE](#) project and turned my original hand drawing of a daytime scene into the night scene for the title slide in a PowerPoint presentation. My step-by-step process is explained below:

### Initial Overlay and Trace Drawing





**Step 1: Digital Photograph.** I composed this photo specifically to generate a hand drawing showing what a temporary widening of the sidewalk might look like if the parallel parking was replaced with an outdoor seating area constructed just for the summer months.

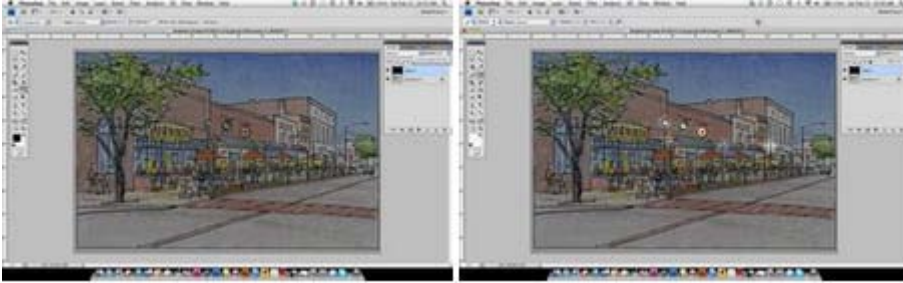


**Step 2-3: Overlay and Trace Hand Drawing.** I printed the photo on 11"x17" paper and blocked out the scene with red pencil on tracing paper. On a second sheet of tracing paper, I sketched the scene with a Pentel Sign Pen. Notice that my linework has no tone or texture - which was added later in the coloring step.

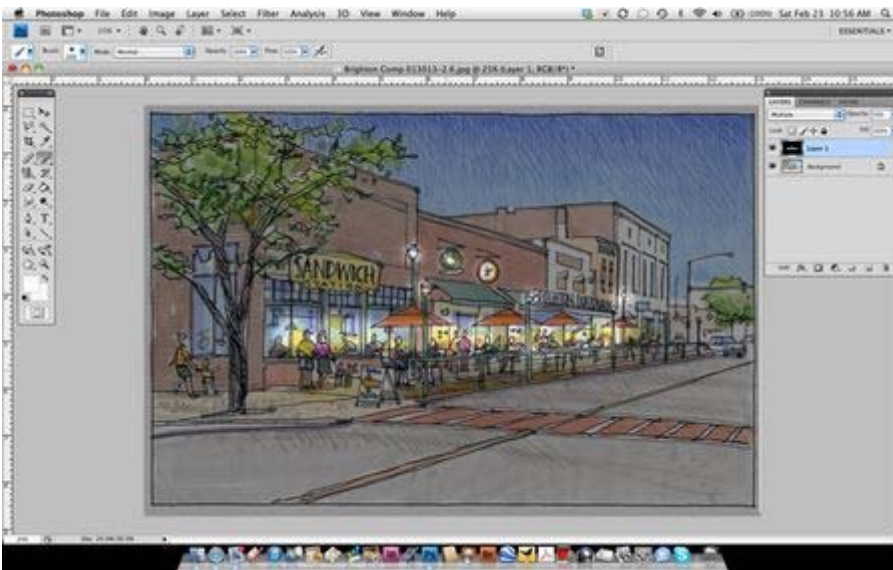


**Step 4: Final Marker and Pencil Color.** After making a record scan (300dpi) of my line drawing, I colored the scene with Chartpak AD markers and Prismacolor pencils. Colored pencils were great tool for developing the different gradations in the sky, adding texture to the ground plane and delineating the brick on building facades. I scanned the final artwork at 300dpi and saved a jpeg.

**Digital Modification in Photoshop**



**Step 5-6: Photoshop Overlay.** I created a new layer in Photoshop that was colored black and then given a 50% transparency. I selected the "multiply" blending mode and then picked a white paintbrush to begin "digital painting" the illuminated portions of the street scene. The paint brush I used had a soft edge to simulate the filtered light.



**Step 7: Spot Digital Painting.** This entire process did not require any special hardware other than my laptop and mouse. As you can see in this interim step, by painting with the color white, I basically removed the gray color where I wanted to emphasize where the light was being sourced from the storefronts, street lights and signage.



**Step 8: Final Digital Effects.** I completed the digital modifications in less than ten minutes, saved a .psd file and an extra jpeg of the scene. I slightly darkened the jpeg to increase the illusion of the evening scene. This technique was a great shortcut for converting a day time scene into an evening scene. If needed, you could always add some yellow and orange colors to the scene to reinforce the color of storefront lighting. Try this method with one of your drawings and see if you can achieve the same results!

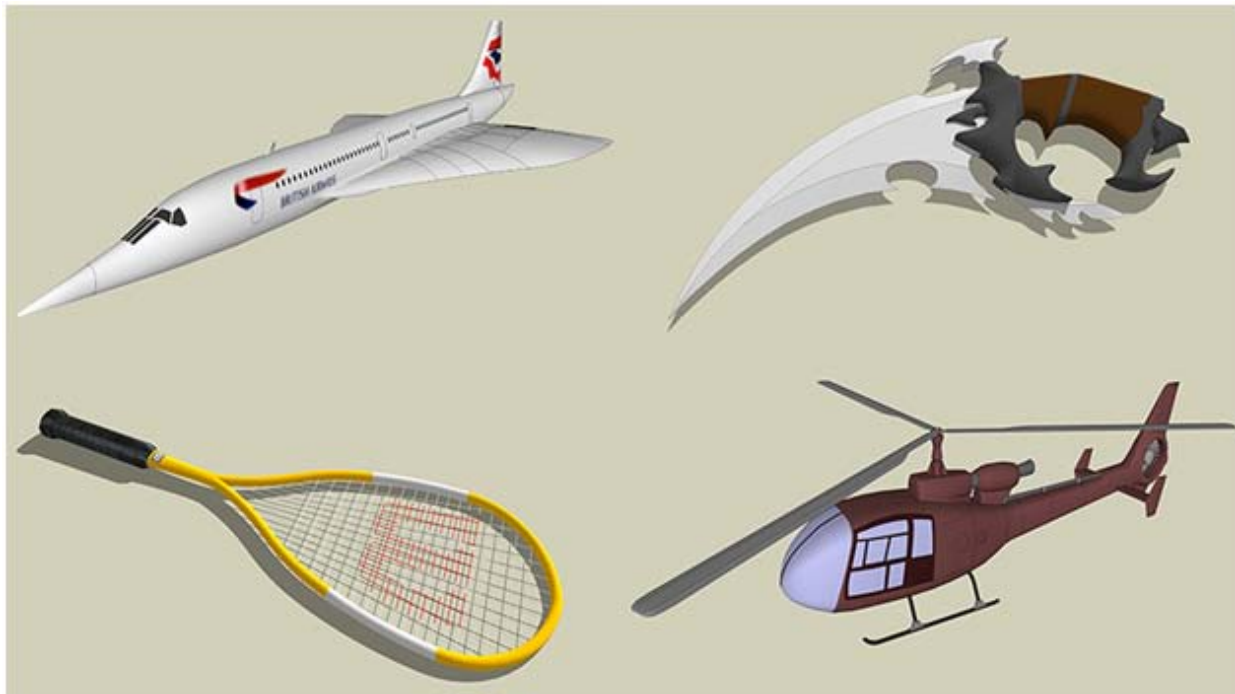
[Read More....](#)



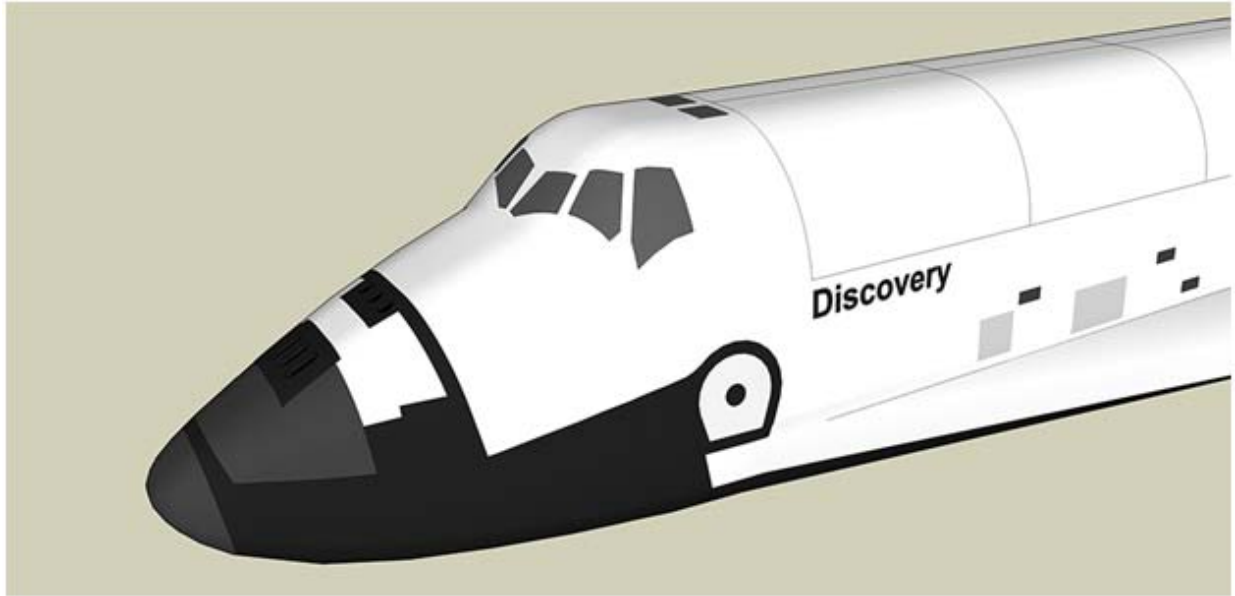
## Flowing surfaces without plugins!

If you want to make a curved surface in SketchUp, it can be a difficult process to get it just the way that you want it. You can draw it manually line by line, but this is very time consuming and it is very hard to make it look good and smooth. There are plugins that make this much easier, but I've discovered a way of getting smooth rounded shapes just using basic SketchUp.

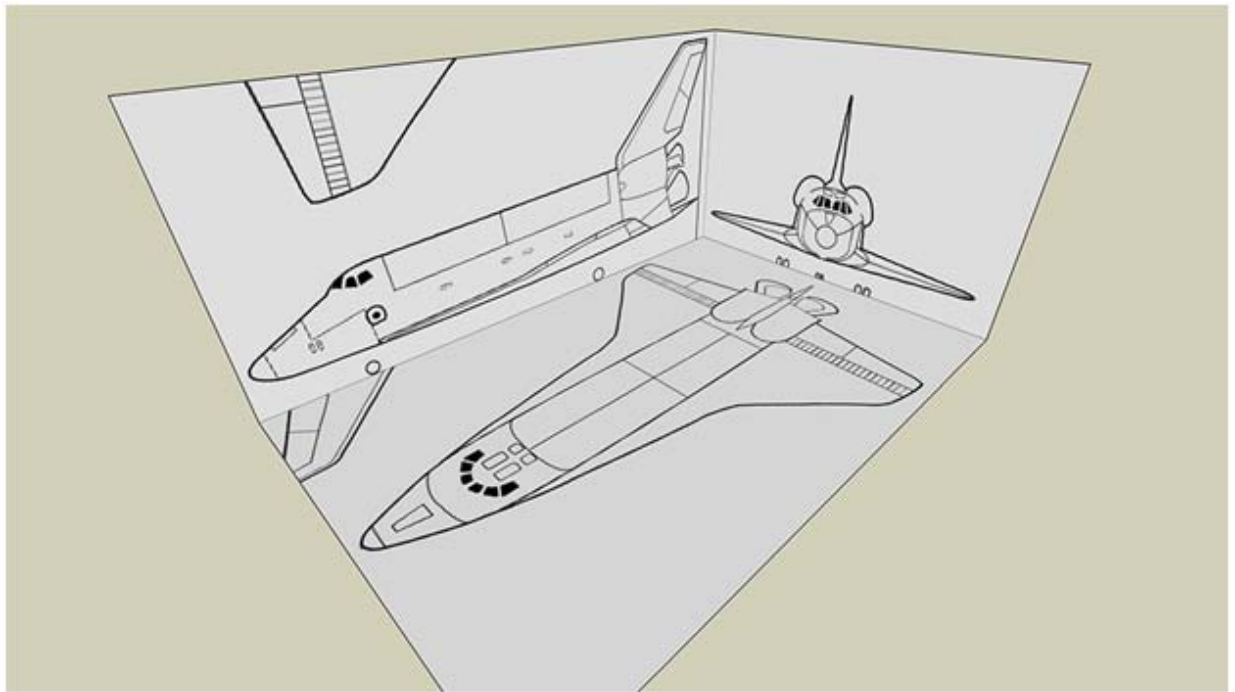
There is a method that I call "Pull and Scale" that is an easy way to make almost anything that you can think of. Here are some examples of models that I've made using this method.



For this tutorial, I will show making the front part of this space shuttle:



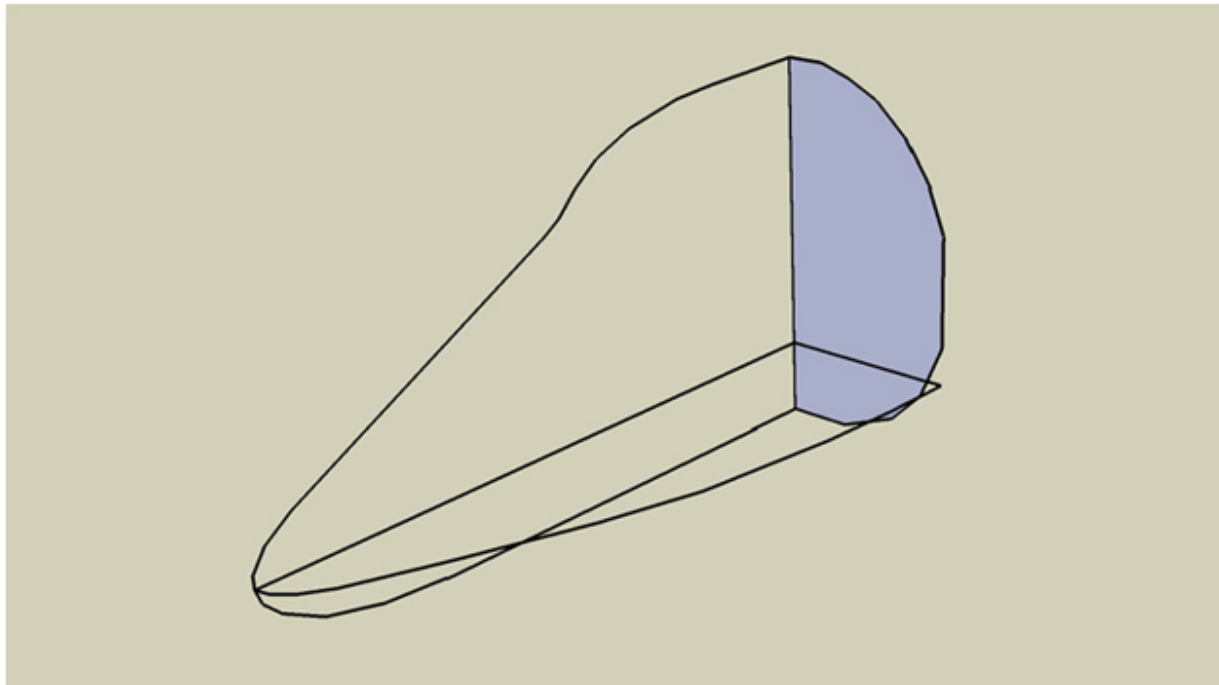
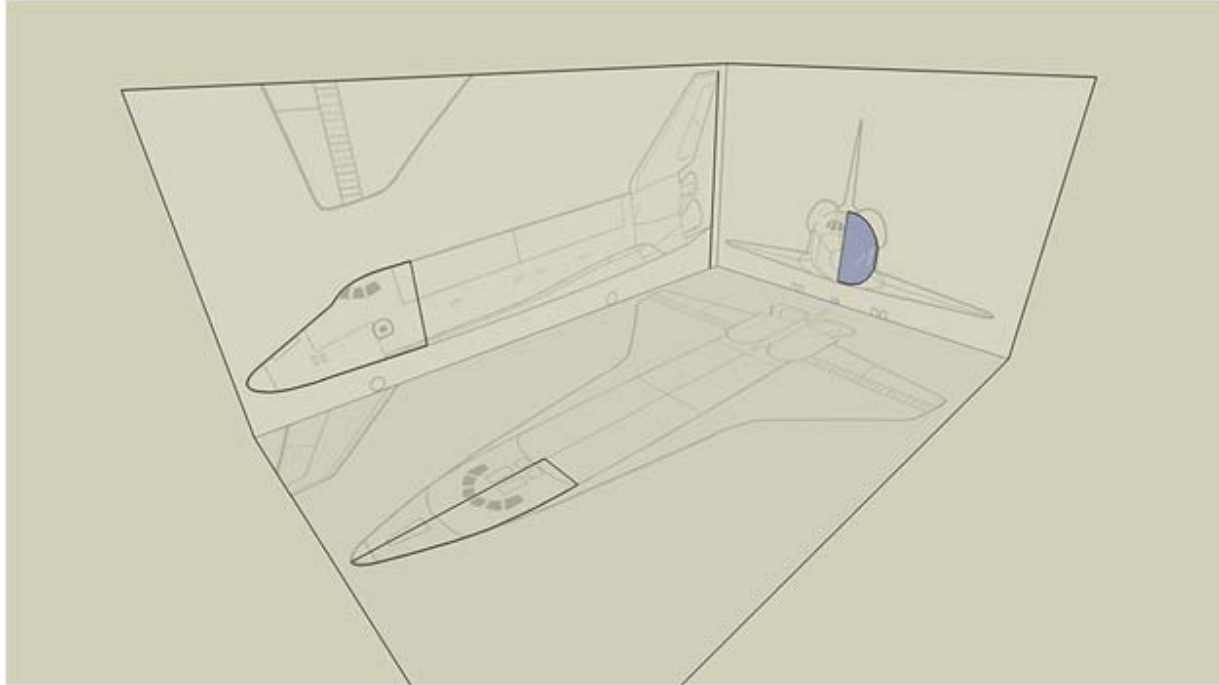
The easiest way to start is with images or line drawings of the front, side and top. These are easy to find online for almost anything you want to make.



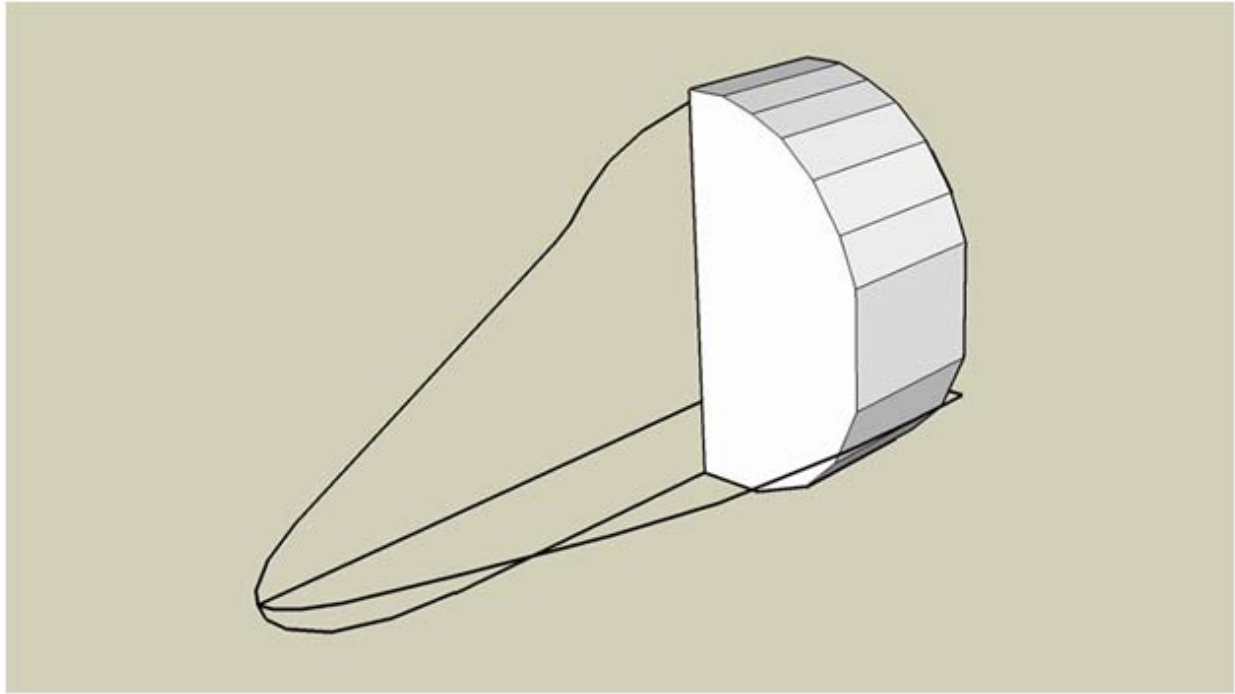
Of course, reference drawings aren't necessary for this procedure, but I like having them to make sure that the model I draw is in scale. I typically trace over the drawing to get the overall shapes that I want to work with. Also, since the shuttle is symmetrical left and right, I make trace half shapes. This way you can mirror it over in the end and your model stay perfectly symmetrical.

So choose the starting method that you like best. For this tutorial I setup the images as follows, and trace over them. Notice the only one of the shapes is filled in. This is the face

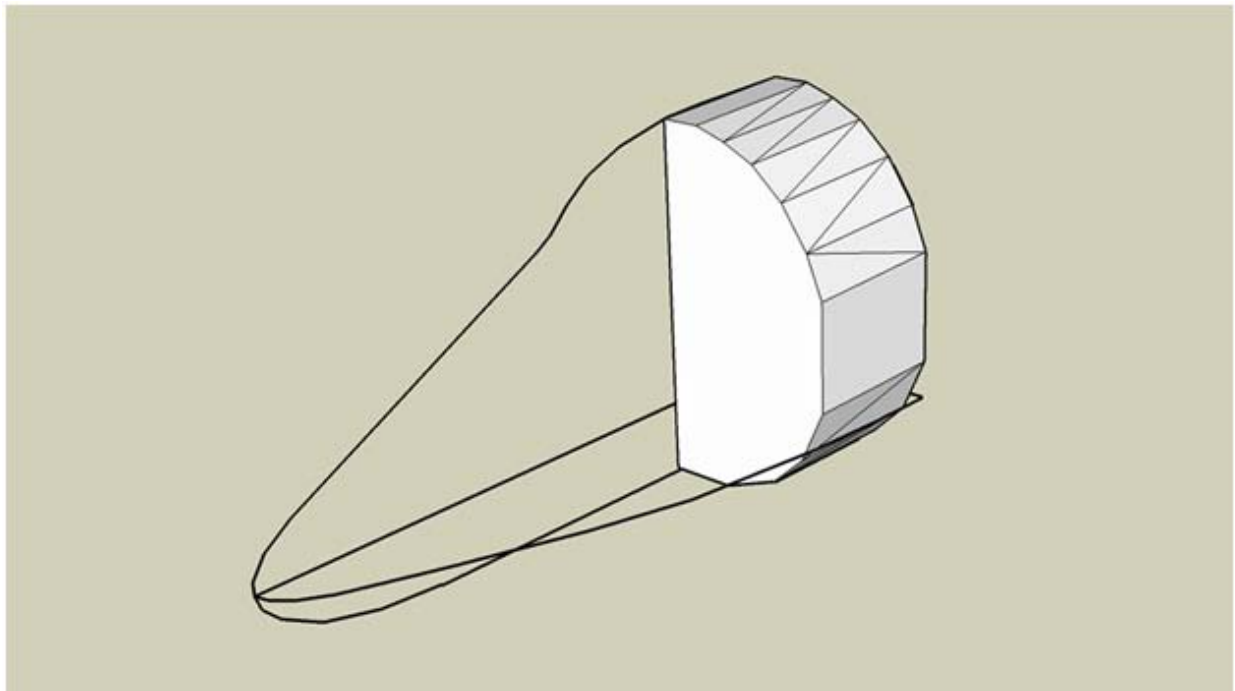
that we'll be working with. The face of the others has been deleted so it's just linework. This makes it easier to see what you are doing. Make the line work groups, so you don't accidentally change the shape of it while modeling. It also helps to lock the object so you can't move it at all.



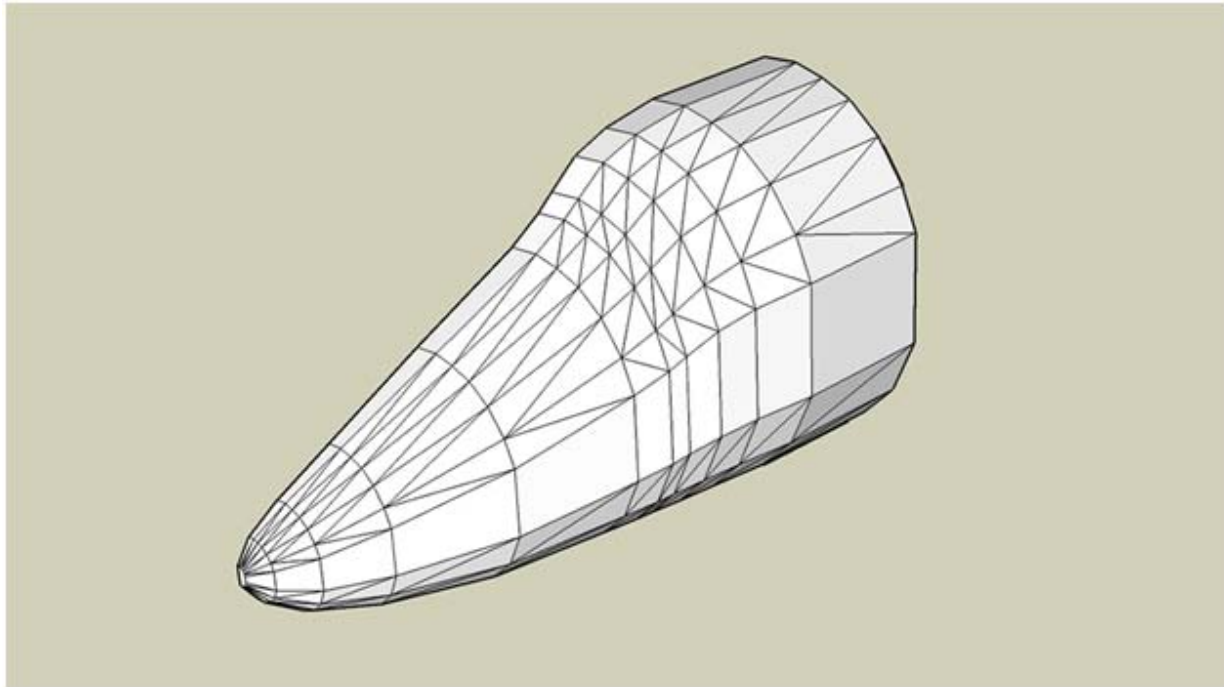
Using the Pull tool, pull the face out a bit. The smaller you pull it, the smoother the final shape will be. For a more complicated shape, or for parts that are much more curved, use a very small pull distance. For this relatively simple shape, I can use a larger distance.



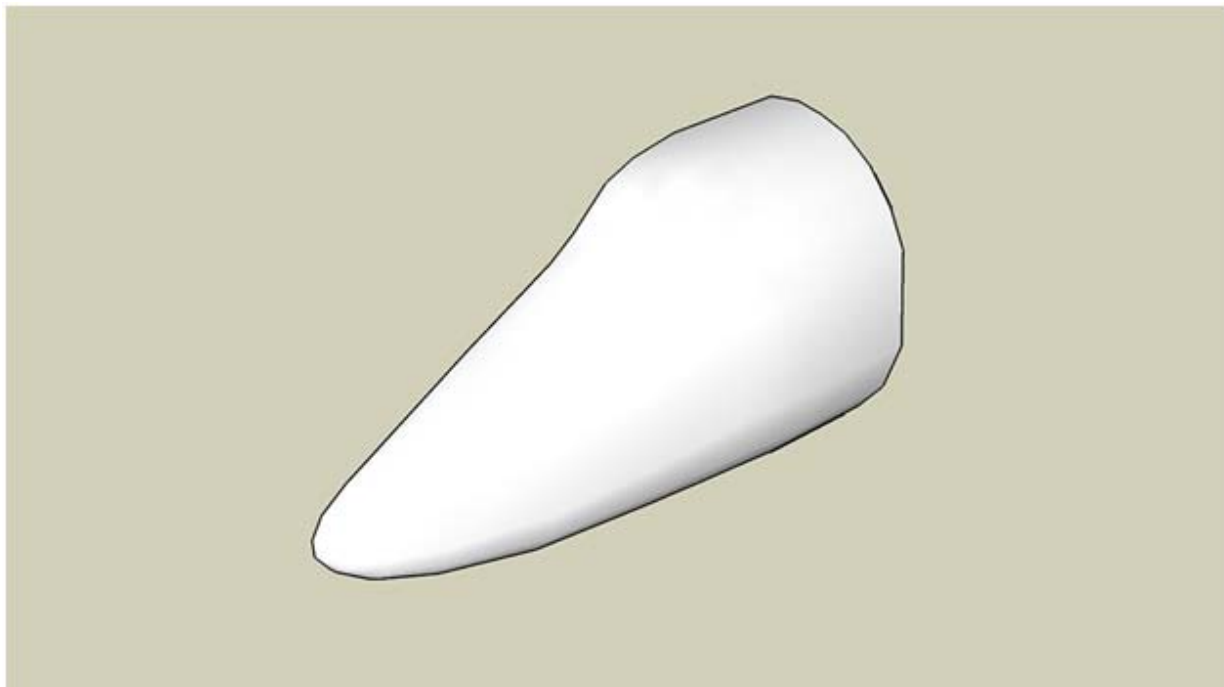
Select the new face on the end and using the Scale tool to change its shape. Be sure to not scale the shape using the grips in on the left side of the shape. This will make an uneven surface to mirror the shape in the end. This is where the reference line drawing come in handy. You can snap to them to make sure that you are getting the correct shape.



Continue this procedure for the entire shape. Notice that for the front tip of the shuttle, I used a smaller pull distance because I wanted a smoother nose.

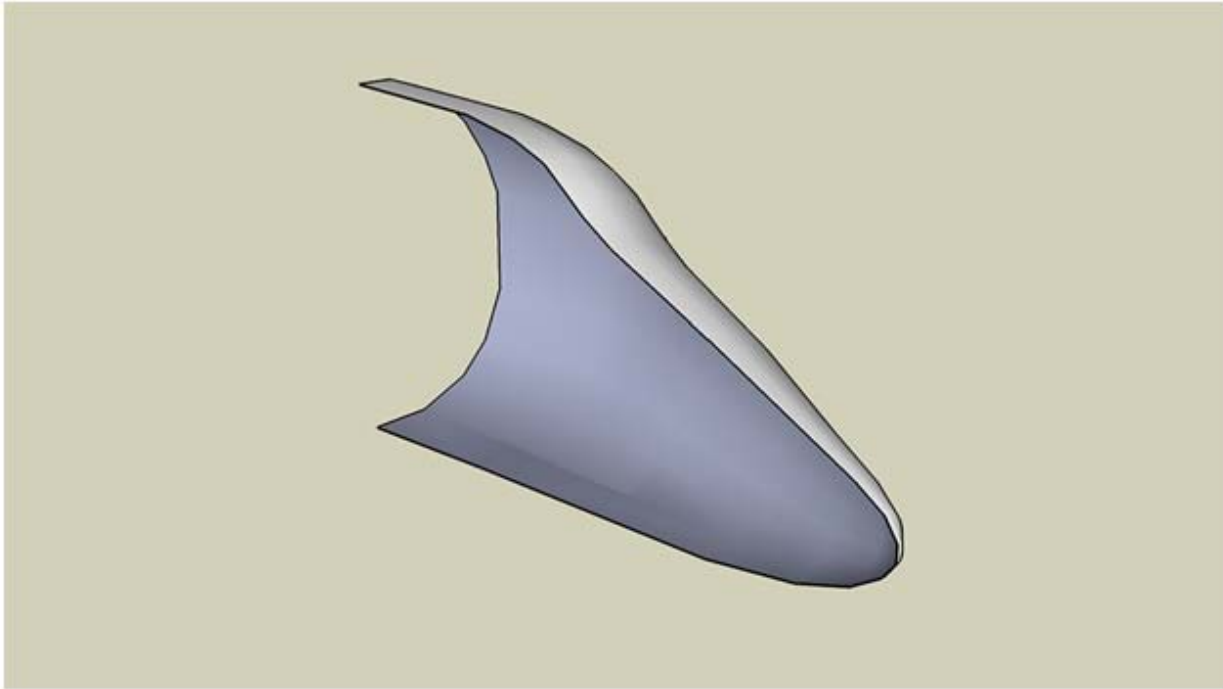


Highlight the entire model and go to Window -> Soften Edges, and set the slider to around 45 degrees. This will make the shape look much smoother.

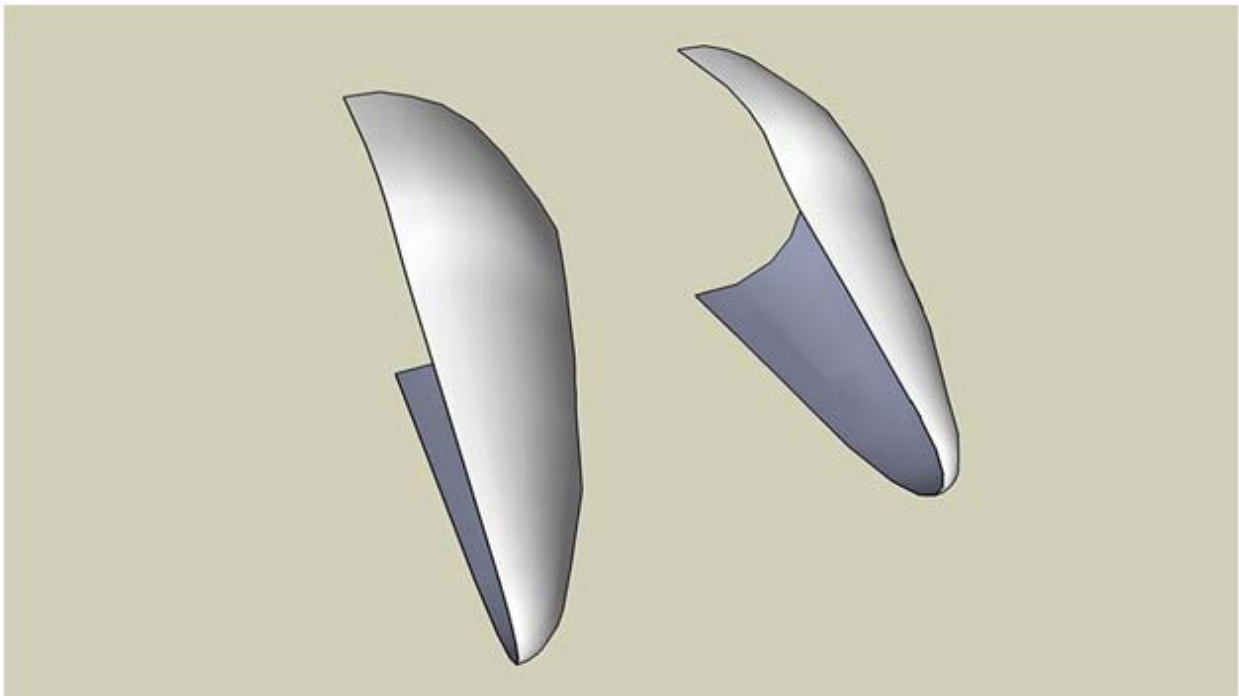


When the shape is complete, delete the inner and back faces and lines, so you are left with the shell only.

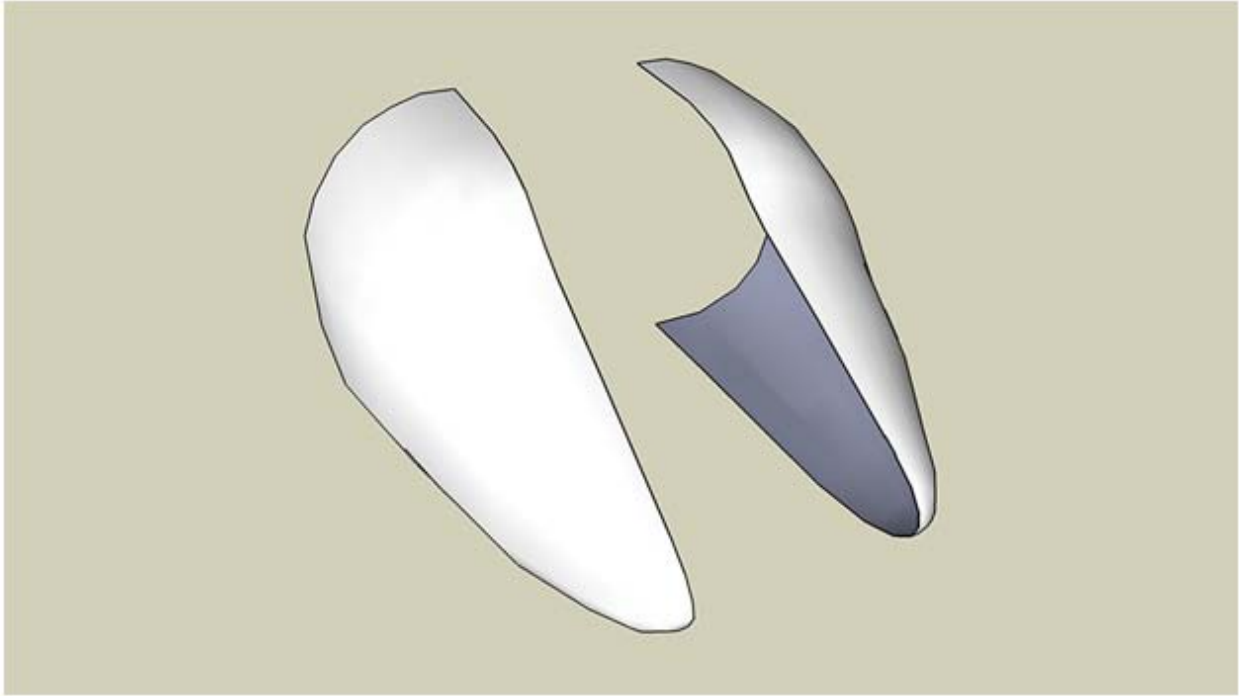




Now using the move tool select the model and press Ctrl to make a copy. Place the copy next to the original shape.

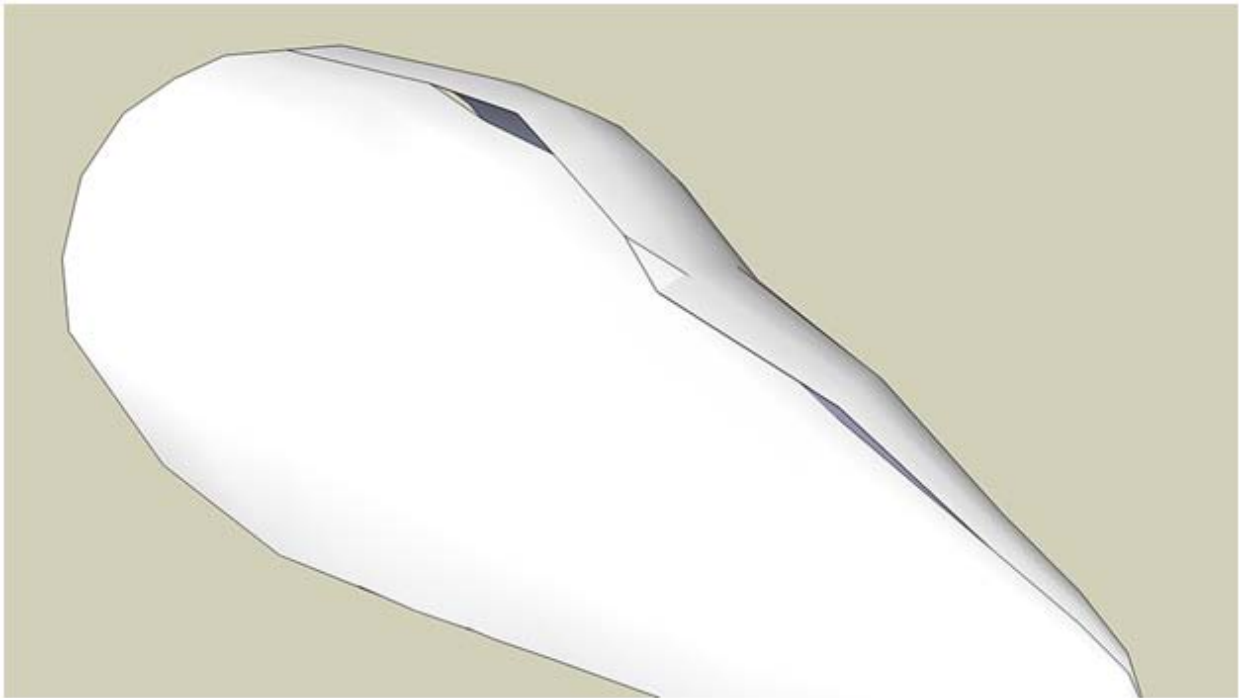


Right click on the new shape and choose "Flip Along... -> Component's Red" (or Green depending on how your model is oriented)

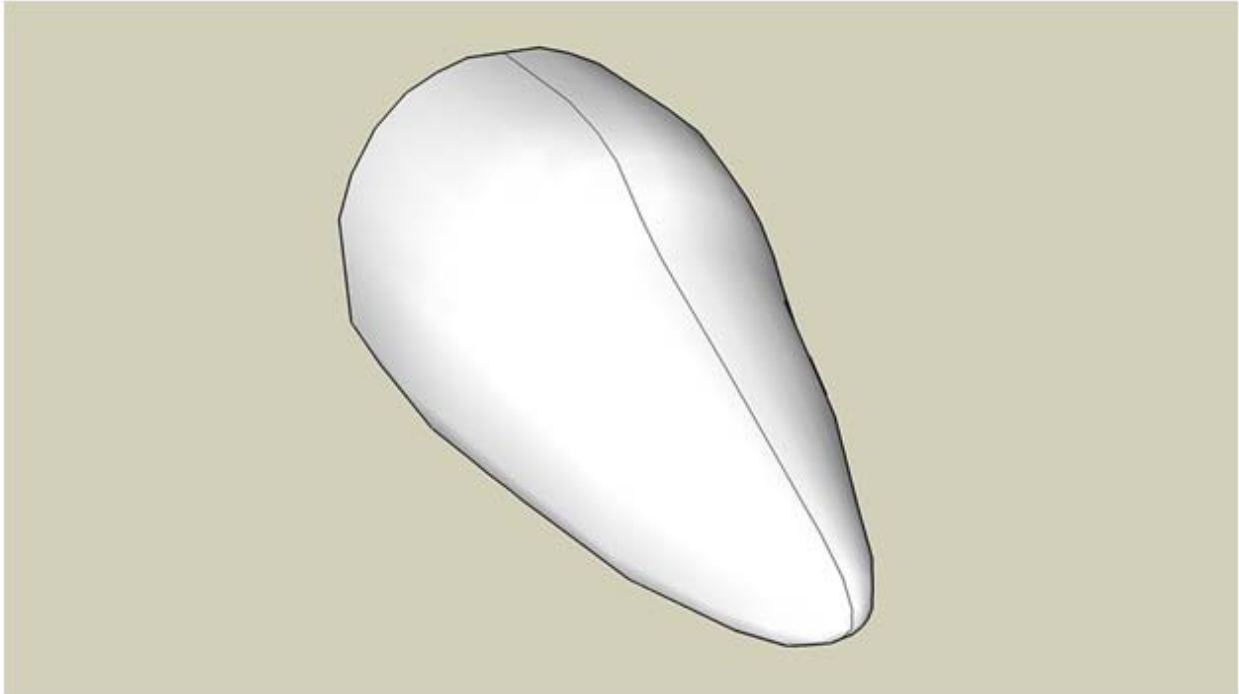


When you move the shapes together, the edges to fit perfectly.

If you see any of the following on your model, it means that at some point in the process you either scaled incorrectly, or you accidentally changes one half and not the other.

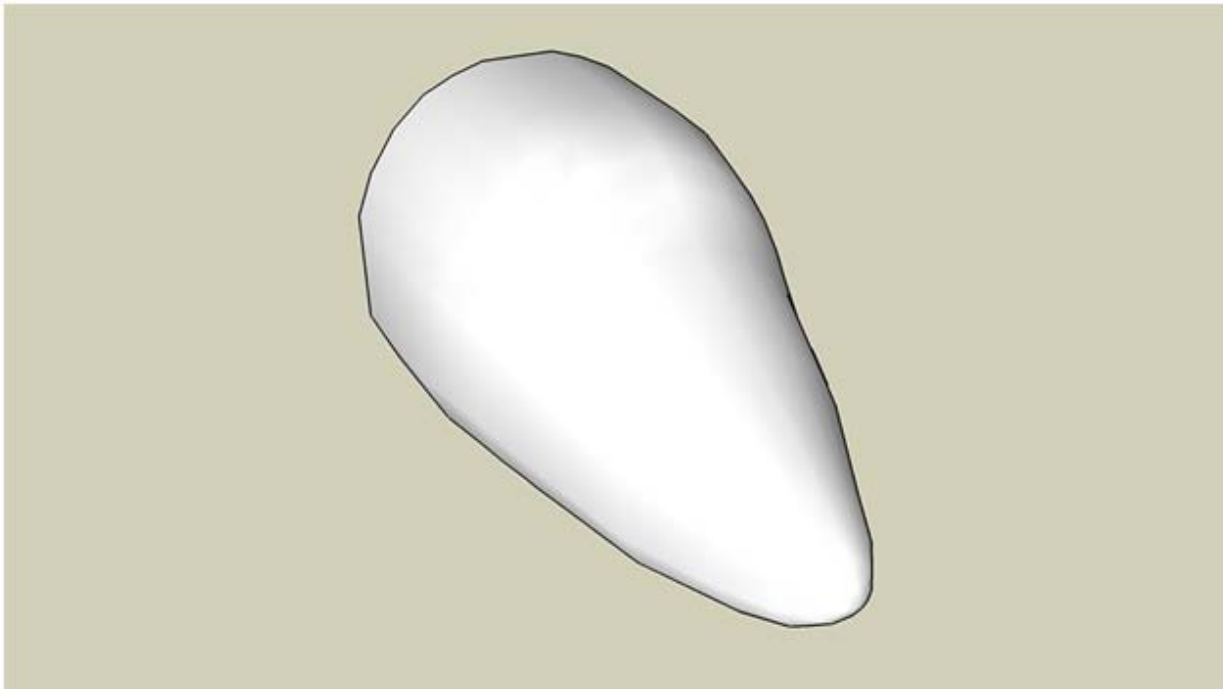


Once done correctly, you should see this:

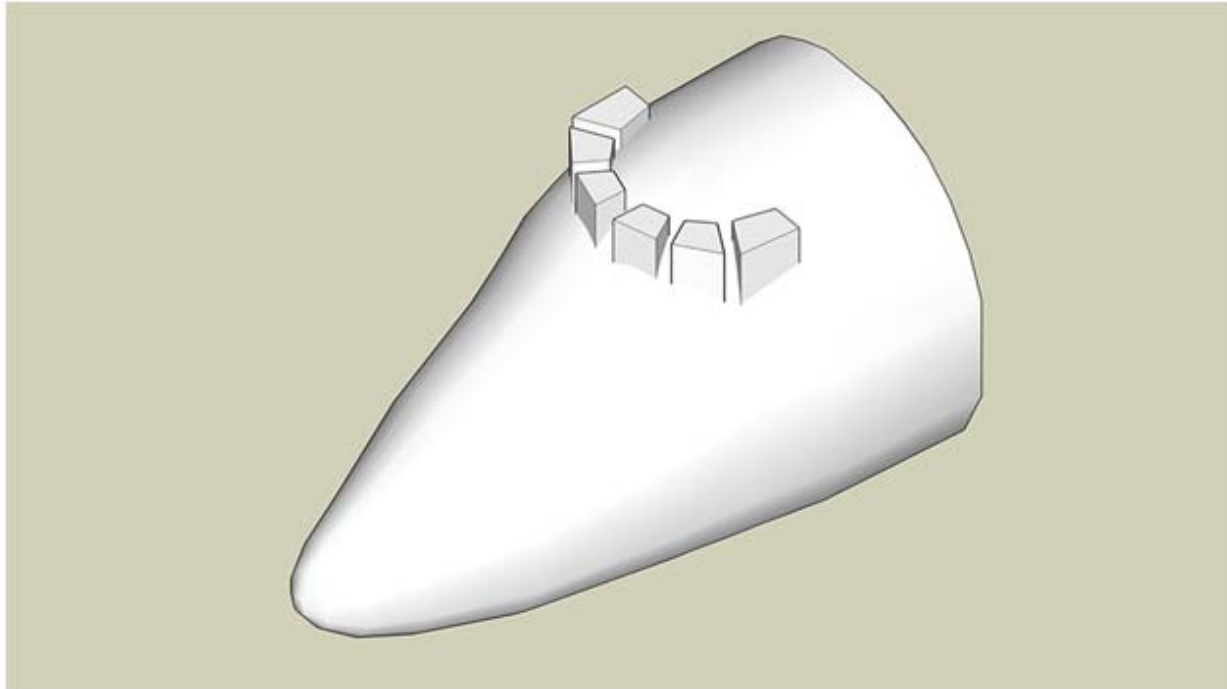


Select the whole model again, and open up the Soften Edges dialog again, and smooth the new edge. For this, make sure the "Soften coplanar" option is selected

The basic shape is done!

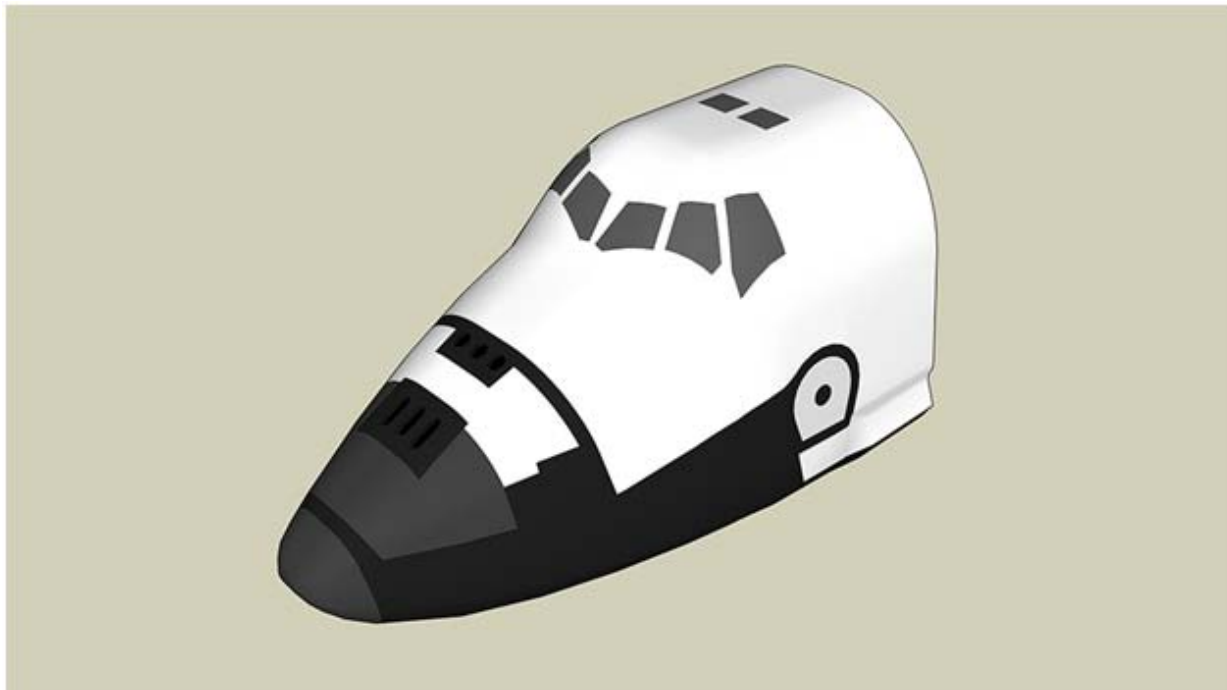


Now you can further add things like windows, by tracing the line drawings, extruding and moving the shapes so they intersect the shuttle at the correct places. Like this:



Right click on the hull and choose “Intersect face... -> With model”. Now when you delete the shapes you just created, you will be left with the shapes “stamped” onto the curved hull.

From here you can use the paint bucket to colour the windows separately from the rest of the cockpit. Using this method, you can complete the rest of the cockpit. I’ve developed this one a bit further:





Now that you know this method, the only limit is your imagination!

Raylectron Textures Exporter...

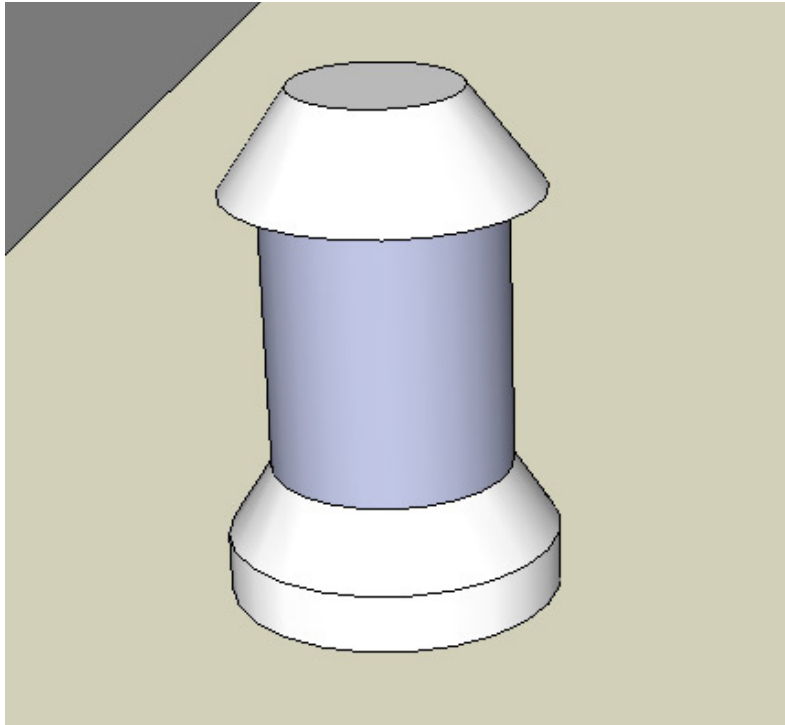
Export all the textures from a model to a directory. As-is, or all as png, jpg or bmp.

[http://raylectron.com/Raylectron\\_Textures\\_Exporter\\_Setup\\_Win32.exe](http://raylectron.com/Raylectron_Textures_Exporter_Setup_Win32.exe)

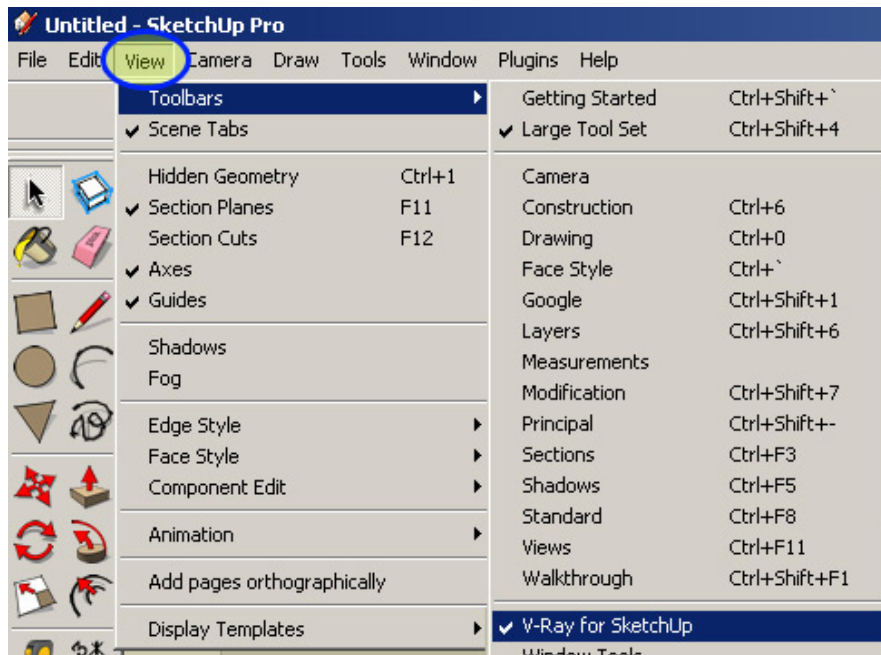
## Night scene render with Google SketchUp

Hello everybody, today we will render night scene with Google SketchUp and vray plugin.

First you need a simple lantern like below. You can draw it from circle with help of Pushh/Pull command

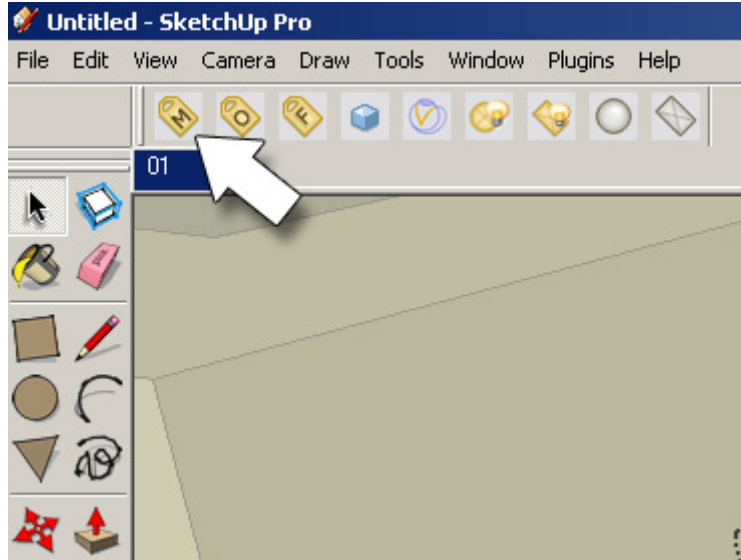


First of all you need to [install](#) and open vray toolbar.

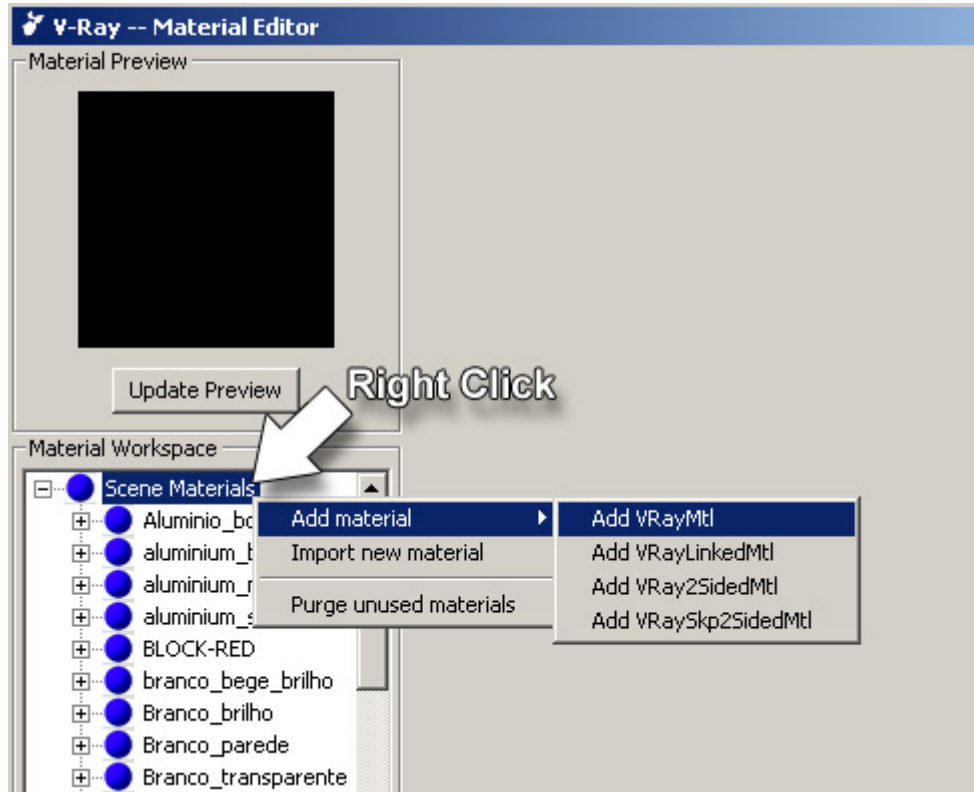


Open Material Editor on toolbar that "M" letter icon.

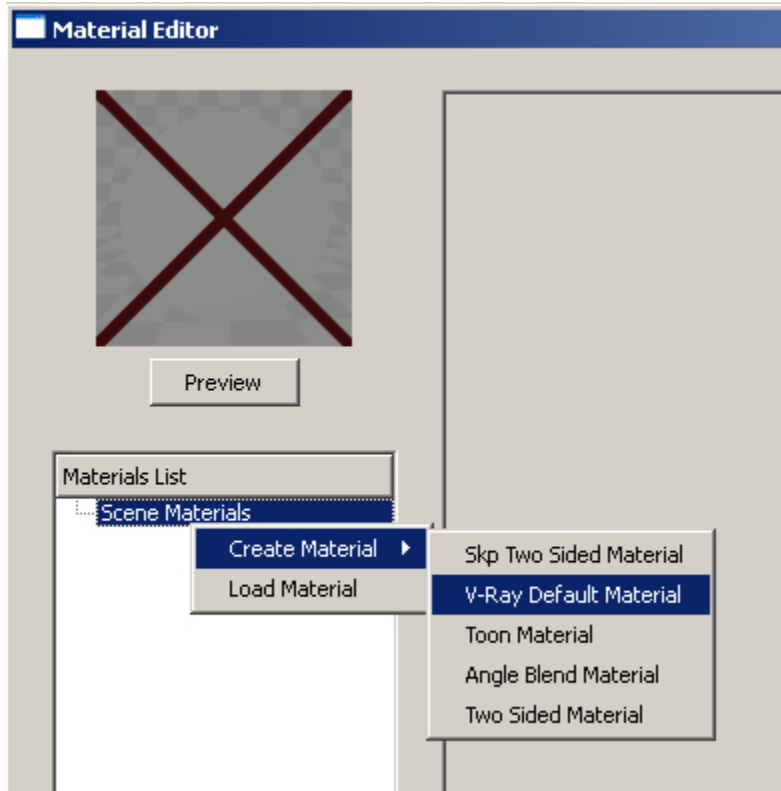
so what the material is : think it like wallpaper you can cover something. except it contains some effects like transparency like plastic bags. some extra lightning like fluorescent lamps.



Older version of V-ray material editor looks like this: you can add new material by right clicking the "Scene materials" label (picture below)

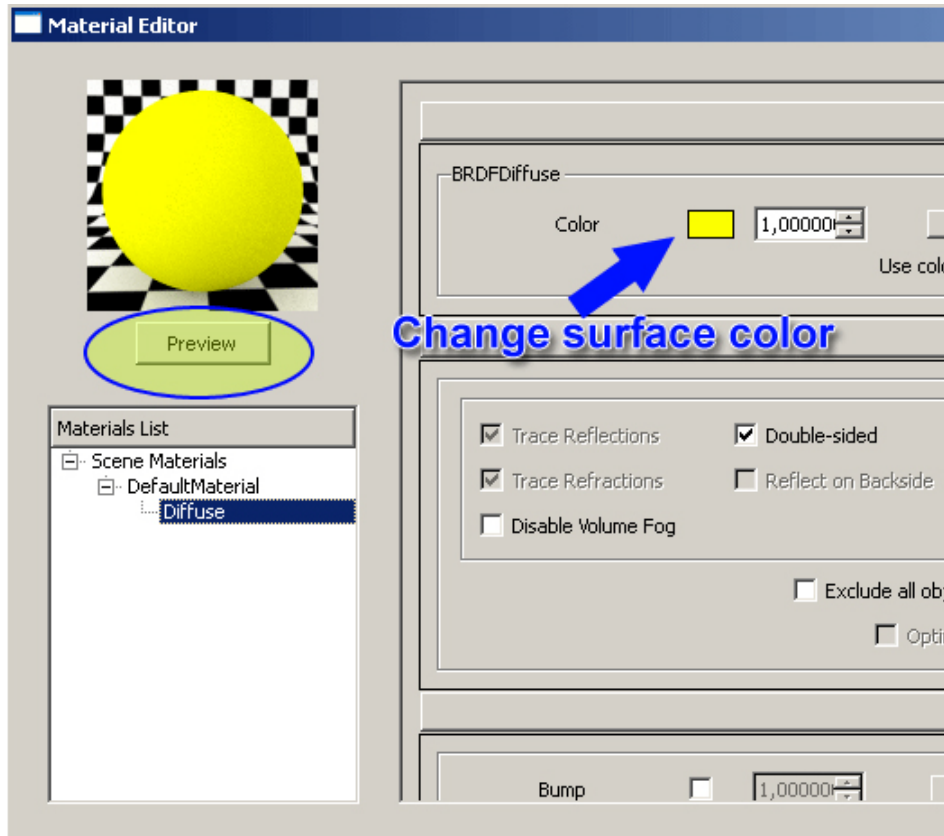


Newer version of V-ray it looks like this picture below ( V-Ray for SketchUp 1.48.66) Both works with same idea. just right click the scene materials.

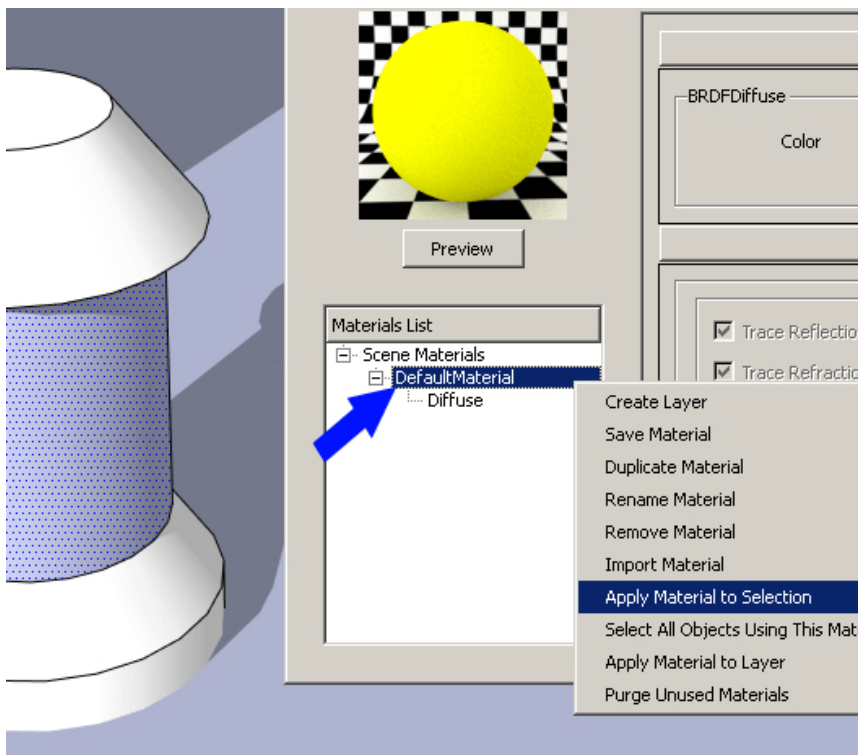


After you create material, click the Diffuse for change surface color. You can see the results on sphere by clicking Preview.

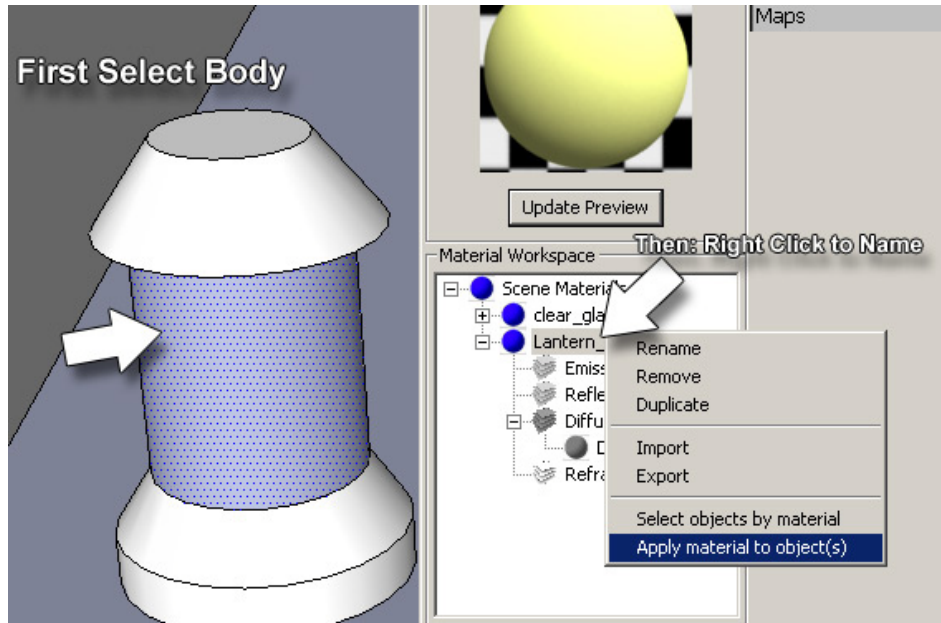




To apply new material to the lantern: choose the glass section of lantern then right click the new material you just created, then choose apply material to selection.



Other versions of vray it named: apply material to objects.



We can now check out our scene: just click the R icon on toolbar, R for Render . ( Again, this is newer version of v-ray, look how icon colors differs )

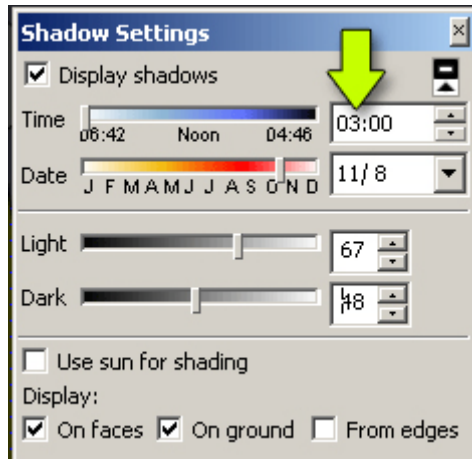


Here is simple result:



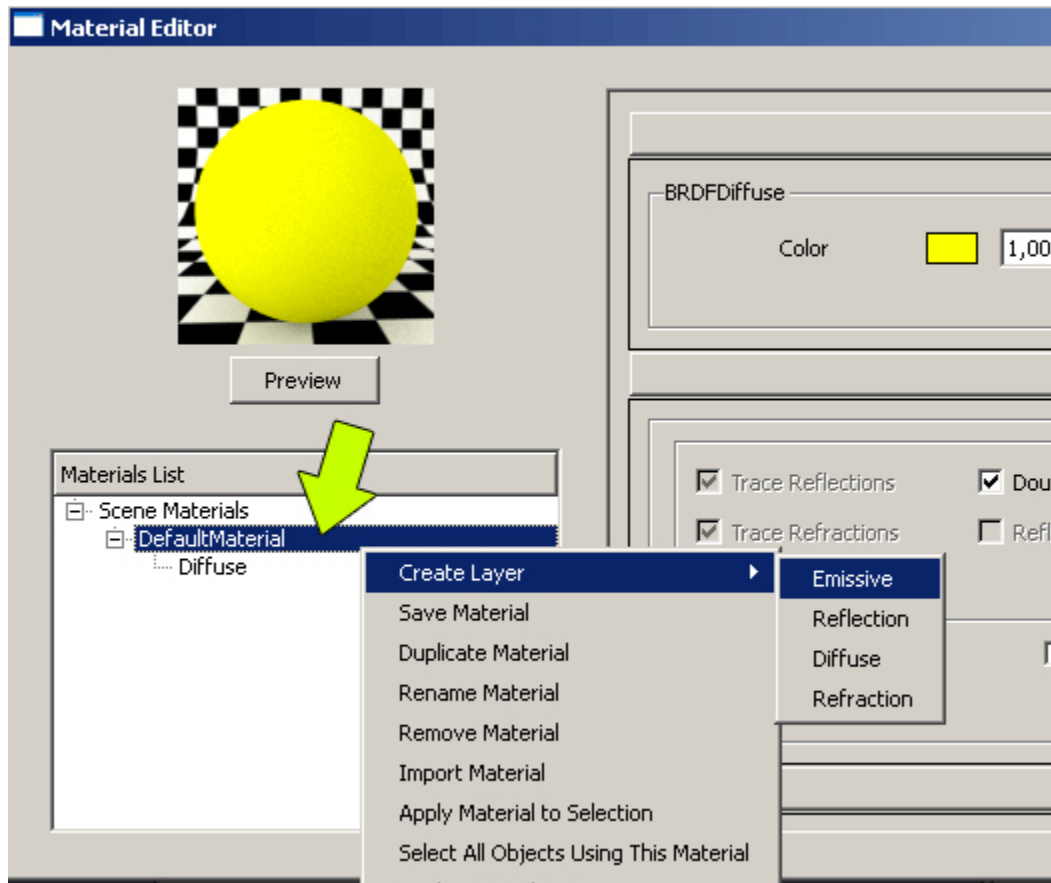
Scene looks good but we need night scene and light up that lantern.

First disable the sunlight: Open the "**Window > Shadows**" menu above, change the hour to "**03:00**" that means midnight

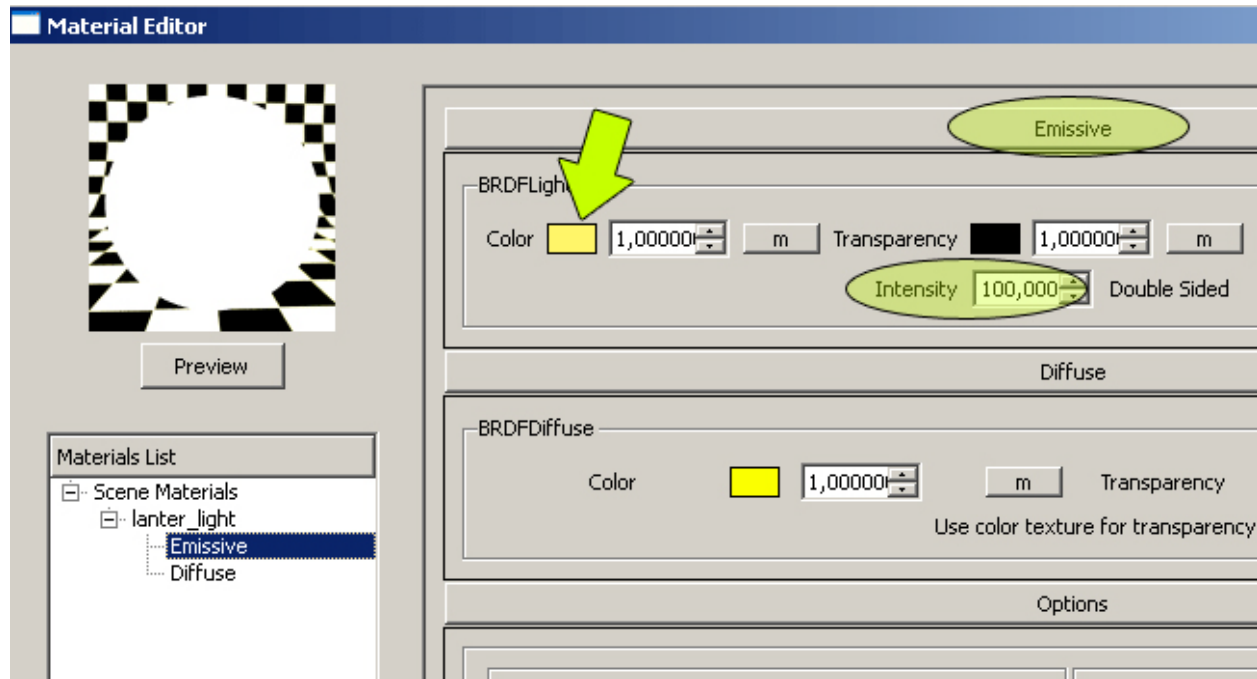


**Lets fire that lantern:**

Right click the material name and create "Emissive" layer. that give us fluorescent or neon lamp effect.

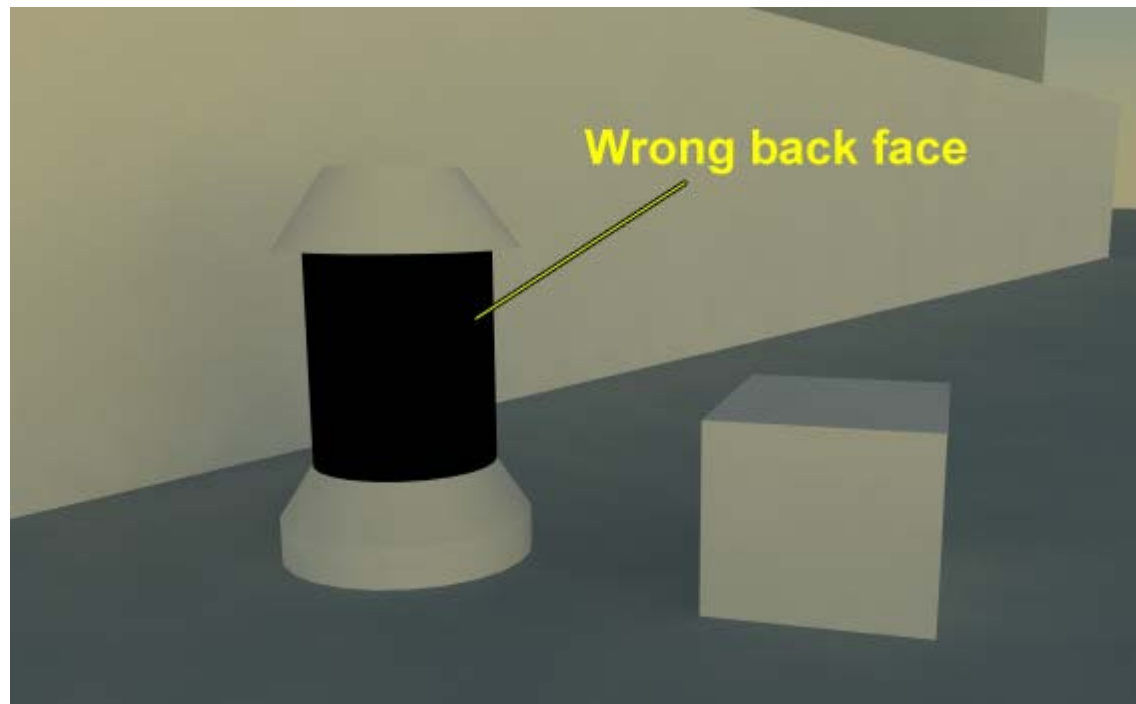


Now change the color and intensity of Emissive layer. I gave 100 to the intensity. (You can also change the light setting from Vray Options window, Change camera shutter between 100-300) And you completed neon lamp.

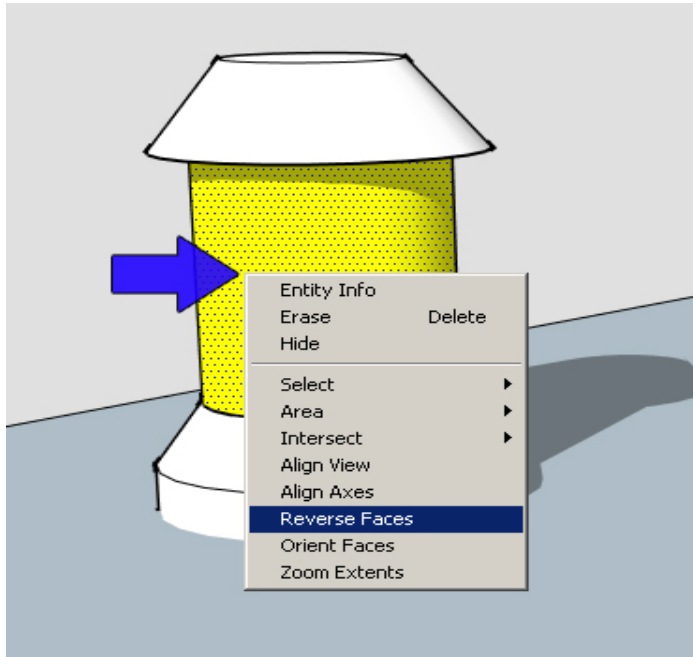


But remember one last thing (damn, it took my 1 hour to resolve what, SketchUp does not show face normals).

If you see black surface like picture below: right click the surface and say "Reverse faces"







Render complete. you made simple lamp. and so nice with v-ray plugin.



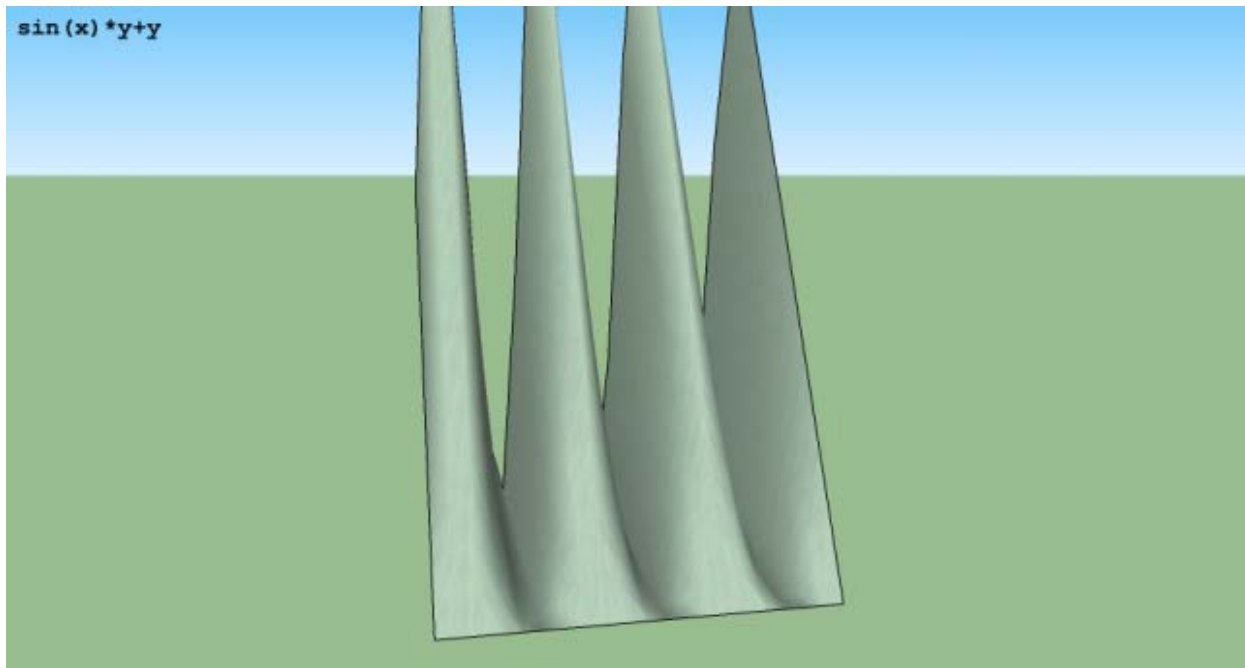
Completed sketchup scene: [Download](#)

Source: <http://www.sketchupfans.com/advanced-sketchup-tutorials/night-scene-render-with-google-sketchup/zkaydet/>

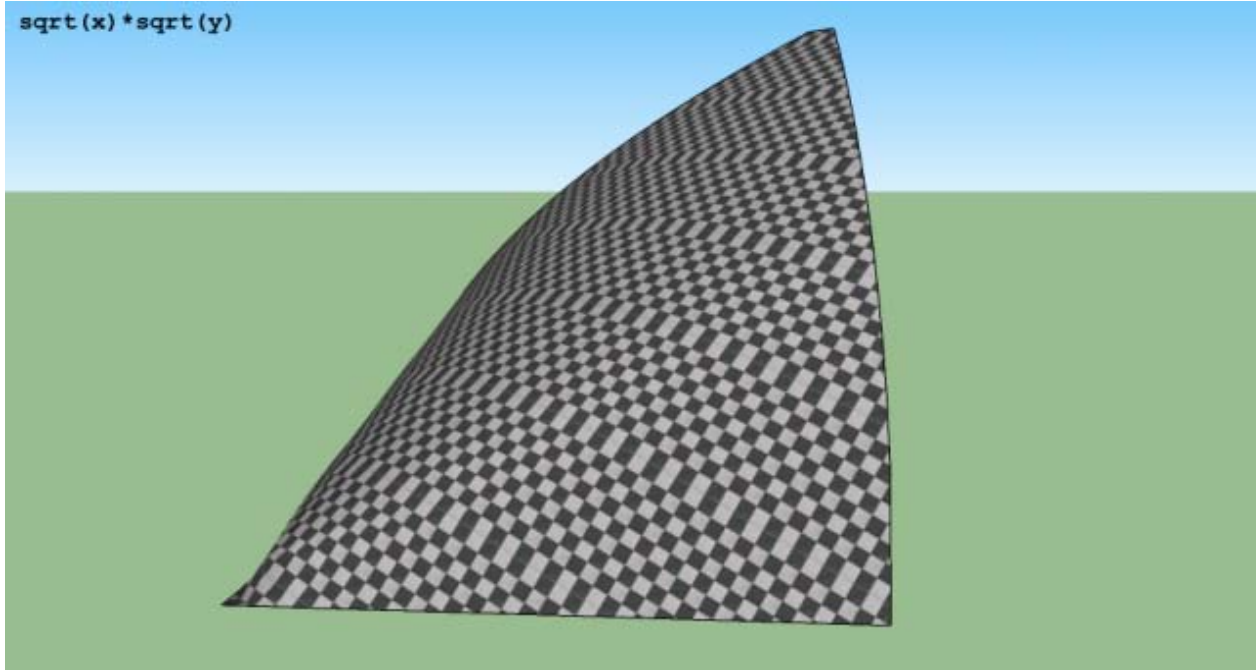
## Raylectron SketchyMesh

SketchyMesh is an easy terrain and shape builder. It is based on the formula  $z=f(x,y)$  for a grid where you enter your own ruby formula using  $x$  and  $y$ . Create terrain and shapes from a grid using formulas in the form of  $z=f(x,y)$ .

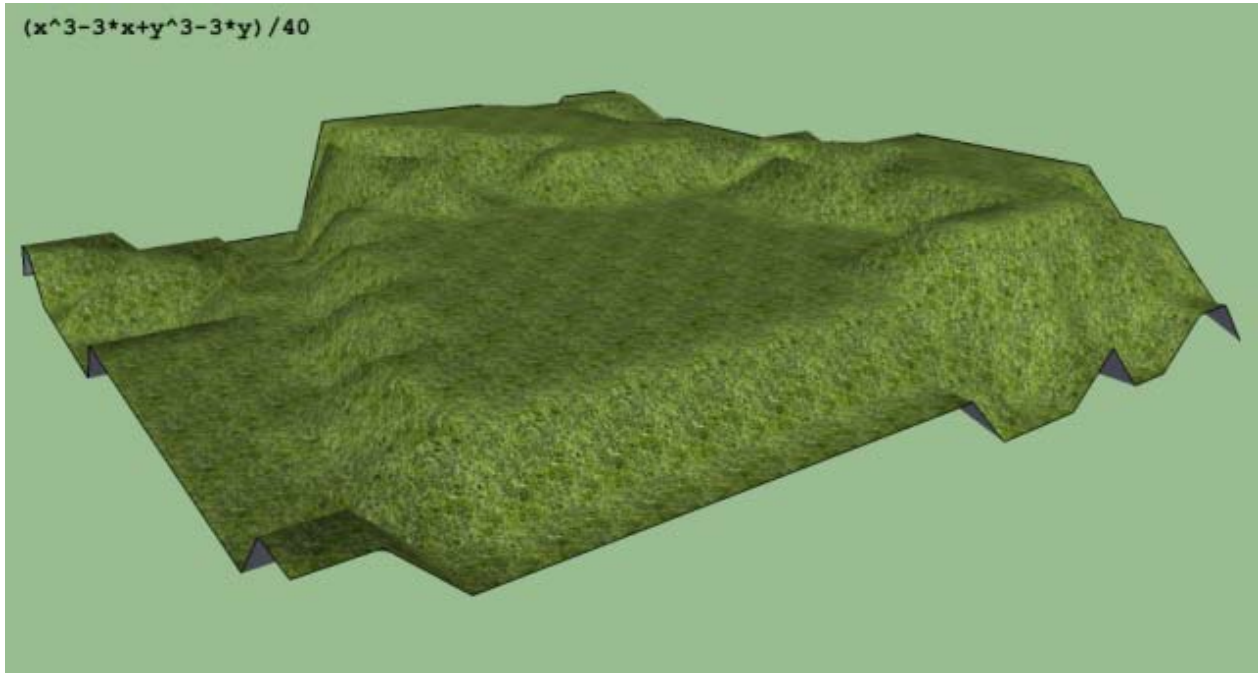
You don't need to know math, just modify the ones that comes with the plugin and see what it does. There is an Undo button to easily undo the mesh, so you can change the formula quickly on every turn. You can go the "View" menu and turn on "Hidden Geometry".

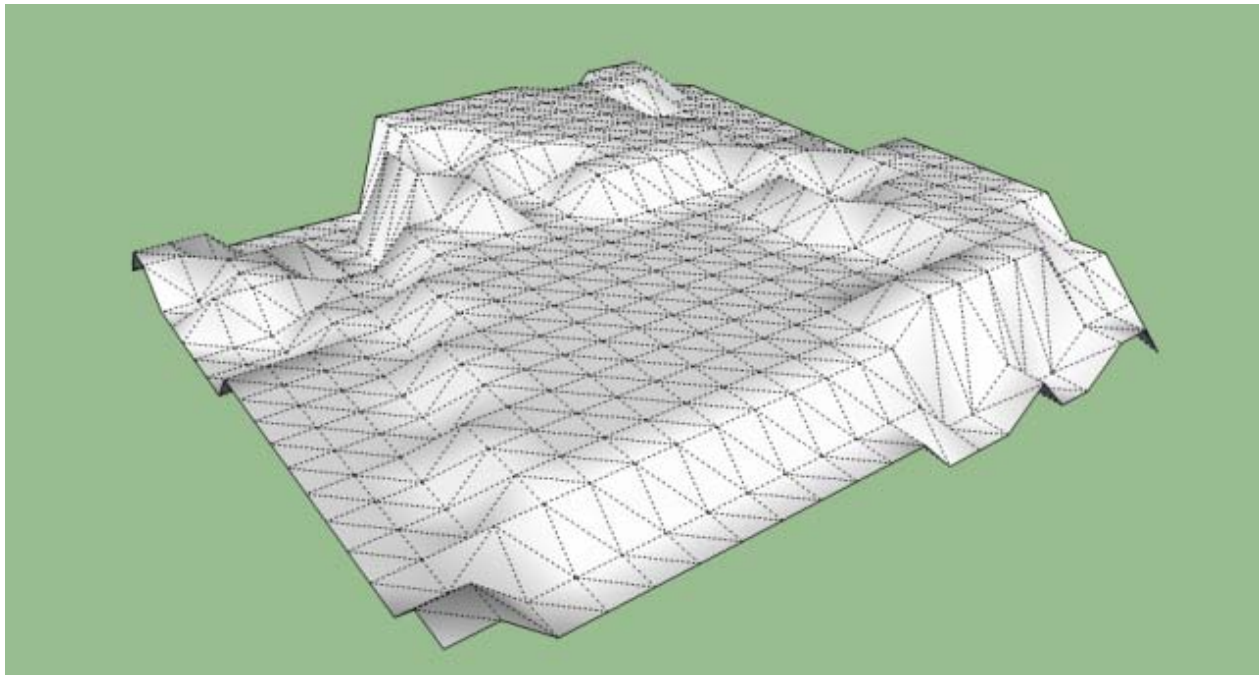
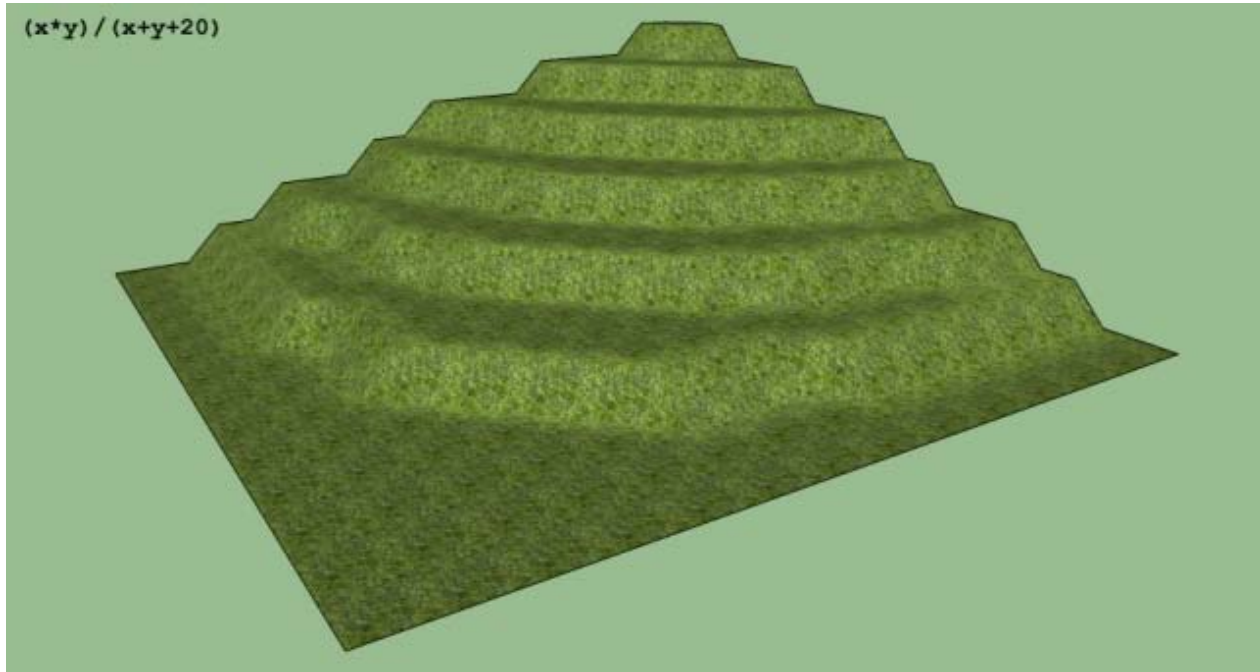


$\sqrt{x} \cdot \sqrt{y}$



$(x^3 - 3x + y^3 - 3y) / 40$





You can download it from <http://Raylectron.com> it is free with source code but is (c)2012 SoftByte Labs Inc.

All in Ruby with source code.

Downloadable link: [http://raylectron.com/Raylectron\\_SketchyMesh\\_Setup.exe](http://raylectron.com/Raylectron_SketchyMesh_Setup.exe)

John Friesen - [SoftByte Laboratory, Inc.](http://SoftByteLaboratory.com)



## 3D Modeling With Daniel Tal and Google SketchUp

Daniel and Ambit-3D create virtual 3 dimensional site plan models for architects, landscape architects and developers working in both the private and public sector. He has become so proficient with Google SketchUp that he now teaches other design professionals how to use this incredibly powerful tool for their own presentations. Best of all Google SketchUp is a free download

On todays show Daniel will discuss what Google SketchUp is and how landscape professionals can use it's powerful tools to create their own 3-D models in just a few days to help them design, sell and build work.

Check out some of his work for yourself at <http://www.ambit-3d.com/Renderings.html>

## A new way to great 3D textures!

PixPlant 2 is a smart 3D texturing tool that creates high quality normal, displacement, specular maps and seamless textures from plain photos.

Based on photos, PixPlant adds an unlimited choice of realistic materials for your projects: pick an interesting photo, run PixPlant and get a perfect seamless 3D texture.

3D textures, automatically - [Try PixPlant now!](#)

### **PixPlant 2 Benefits**

**Save a Lot of Texturing Time:** PixPlant reduces to almost zero the time and work of preparing tiling 3D textures and backgrounds.

**Diversify your Textures:** Quickly turn photos into usable 3D textures, adding realism, variety and value to your projects.

### **Benefits for 3D visualization, architecture and games:**

- Quickly create unique seamless 3D textures, horizontally and/or vertically tiled.
- Based on real-life photos, PixPlant generates realistic textures without the complication of procedural texture generation tools.
- Generate and fine tune normal, displacement and specular maps for highly realistic 3D texturing.

### **For graphics and multimedia design:**

- A creative "image alchemy" tool: create high resolution, high quality images with the same characteristics as the photo sources.
- Easily create unique images that can be used as backgrounds, patterns or brushes.
- Expand or complete existing images by adding detail from themselves or from other images.

### **PixPlant 2 includes the following features:**

- Create normal, displacement and specular maps ready to be used in 3D modelling applications.
- Fine tune 3D textures with an interactive parallax mapped 3D preview.
- Create textures from almost any photo, thanks to advanced straightening and seed pattern controls.
- Highly automated with most textures created in 1-4 clicks. And high performance with usually a few seconds per texture.
- Generate complete images or refine and expand existing ones. Out-select parts of the seed image for fine grain control.
- Carefully designed easy-to-use interface, now also available in 64 bits as a standalone application and as a plug-in for Photoshop and compatible applications.

To see PixPlant screenshots and some generated images please visit the [Examples area](#).

## DAVID Structured Light Scanner

The new DAVID-SLS-1 scanner employs the innovative Structured Light technology, which allows precise 3D scanning in a matter of seconds. The scanner is mobile and can be placed easily in front of the surface to be scanned. A single click in the well-proven DAVID software starts the scan - and a few seconds later the digitized 3D model shows up on your screen!

This way you can subsequently scan all sides of the object, and finally combine them to a closed 360° model. The modular hardware setup allows a flexible adaptation to your object - any size from coin to couch is possible!

The results can be exported into common 3D file formats (OBJ, STL, PLY) and processed in other applications, e.g. for rapid prototyping, inspection, product presentations, archeology and cultural heritage, works of art, computer animations, video games... The limits are set only by your imagination!

**User Manual:** The Getting Started Guide is available in [English](#) and [German](#). A more detailed User Manual can be found [here](#).

For more information, please visit: [www.david-laserscanner.com](http://www.david-laserscanner.com)

### Contents of package

- Industrial camera with focusable lens
- Video projector with special lens for large focus range
- USB drive with DAVID-Laserscanner Pro Edition 3 software (licensed)
- Aluminium mounting rack with flexible configuration options
- Tripod for stable setup
- Calibration panels (different sizes) for multiple scan volumes
- All required cables
- Printed "Getting Started" guide

### Requirements

- Standard PC (Windows XP, Vista or 7 - 32 or 64 bit)
- Two available USB ports
- Recommended: 2 GHz CPU, 1 GB RAM, 3d graphics card (e.g. NVIDIA GeForce or ATI Radeon)

Source: <https://ssl.david-vision-systems.de>

## Solid plugin for Google SketchUp

**SuSolid is a fusion of 4 plugins related to Solid entities of Google SketchUp:**

1. Solid Check Plugin that shows you all the causes that makes your model a non solid.
2. Solid Repair Plugin that helps you to repair your model and makes it solid.
3. Solid Intersection Check Plugin that shows you all the intersection between solids.
4. Solid Weight Plugin that shows you the weight of the model and every single component.

On the picture sequence on the right you can see how quick you can make [this model](#) to be composed by 49 solid entities. Just try to do it manually and you will see how much time the SuSolid plugin can save you.

You don't need to inspect the mistakes closely, just follow the edge colors and select the appropriate tool for that mistake.

Mostly the best tool selection order is like on the mistakes counter (orange,red,green,yellow).

Next,you can find the intersection mistakes,that can be very expensive if you are designing for production.

And finally you can predict the weight of the product in the designing stage.

Source: [www.susolid.com/](http://www.susolid.com/)



## Rendering In SketchUp

For those of you who work in Sketchup and are new to rendering, or are confused by all the different rendering software packages available, a new book is coming out March 25 that will help. Daniel Tal, landscape architect and author of [Sketchup For Site Design](#), has written a new book, [Rendering In Sketchup](#), which is now available for pre-order or as a digital download.

There are now a number of rendering programs on the market for use with Sketchup, with a majority of them working from within Sketchup without having to exit the program. This can be a plus or a minus depending on how you work. Even though most of the programs offer free-use trial periods of their software, It can be pretty difficult and time-consuming to decide which is the best one for your workflow and budget.

Daniel is an excellent teacher and has written a very thorough and detailed book on the process of rendering from Sketchup using a variety of software programs as well as explaining post-rendering work with Photoshop. While not every rendering engine is covered, he does go into a great amount of detail explaining not only the basics of rendering, but his own methods using Shaderlight, SU Podium and Twilight Render.

The book covers workflow, hardware requirements, how to model efficiently for renders, use and teaching of textures and a lot more. At over 600 pages, the book is both a reference and a guide and can be read for pertinent chapters rather than just cover to cover.

You can get more information on the book [here](#), and you can view the videos on Daniel's Youtube site [here](#)

Here is a really good tutorial by Daniel you should watch which is based on the material from his book:

<http://vimeo.com/48282400>

If you want to know all of your rendering engine options, here is a list of rendering programs that work with or within Sketchup; ( Prices are as of March, 2013.)

### From within Sketchup:

- [Shaderlight](#) – \$299 full license; timed access from \$50
- [Twilight Render](#) – \$99
- [V-Ray](#) – \$800
- [Bloom Unit](#) – free software , cloud-based, priced per render
- [Caravaggio](#) – \$295
- [Indigo Renderer](#) – \$220
- [IRender nXt](#) – \$499
- [Light Up](#) – \$189
- [LumenRT](#) – \$295
- [Maxwell](#) – \$995

- [Raylectron](#) – \$99
- [Render\[in\]](#) – \$160
- [Renditioner](#) – \$99, Pro \$199
- [SU Podium](#) – \$198
- [Thea Render](#) – \$420

Source: <http://thedesignersassistant.com>

## eDrawings Publisher SketchUp Google

eDrawings for Google SketchUp provides an innovative way to share your designs. You can publish your SketchUp models to eDrawings files that can be packed into a self-executable (.exe). The self-executable file contains the viewer as well as the design data. This ensures that the recipients of such a file do not need to purchase or install any viewer to see the model.

[Download Free eDrawings for Google SketchUp](#)

### System Requirements:

- Google SketchUp version 5.0 (Free/ Professional) or Google SketchUp version 6.0 (Free/ Professional).

Operating Systems	eDrawings 2009	eDrawings 2010	eDrawings 2011	eDrawings 2012	(eDrawings 2013)
Windows 7	✗	✓*	✓	✓	✓
Windows Vista	✓	✓	✓	✓	✓
Windows XP	✓	✓	✓	✓	✓
Mac 10.4	✓	✓	✓	✗	✗
Mac 10.5	✓	✓	✓	✓	✗
Mac 10.6	✗	✓	✓	✓	✓
Mac 10.7	✗	✗	✗	✓*	✓

## SketchUp ur Space - The Creative Team



**Rajib Dey**

[rajib@SketchUp-ur-space.com](mailto:rajib@SketchUp-ur-space.com)

Rajib, the editor-in-chief of SketchUp ur Space magazine is the main writer. He is responsible to write the cover story, blog and many other columns. Along with it, he is creating a liaison between the writers and the readers.



**Manoj Kumar Singh**

[manoj@jobs2india.com](mailto:manoj@jobs2india.com)

Manoj is enthusiastic helps to put the content of the SketchUp ur Space magazine in the html version. Manoj is the html developer who beautifully creates each and every edition with care along with the PDF version.