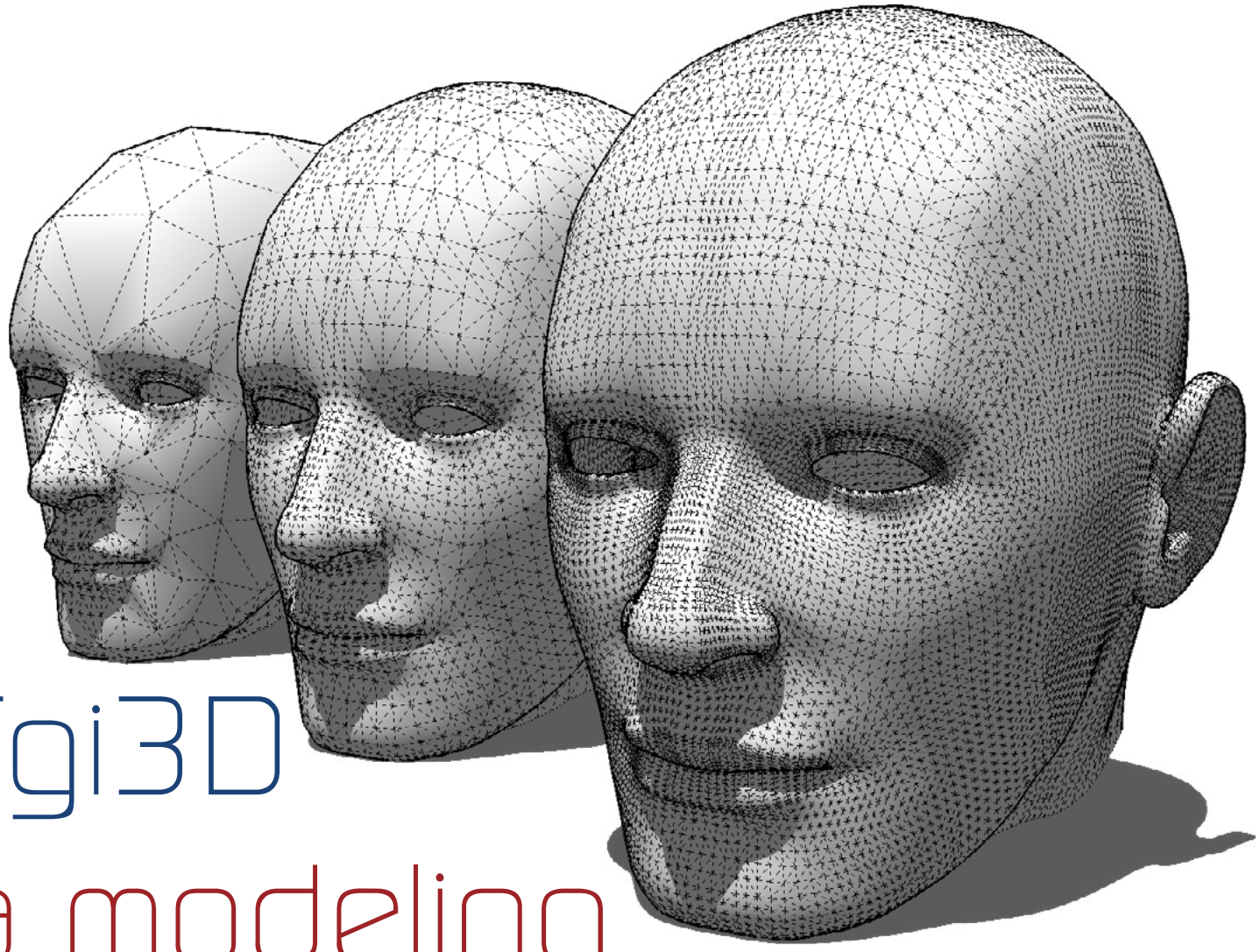
Catchup

EDITION 2

SKETCHUCATION COMMUNITY NEWS



Tgi3D a modeling revolution?

Features

ARmedia Casestudy

iPhone SteadyCam

Robatto's Barcelona Chair

Contruction Modeling

Inpaint

FluidRay Interview

Fancy a Lounge-Book?
10 prizes to be won...

On the cover: "Face to Face to Face",
courtesy of Richard O'Brien
Editor: Richard O'Brien
Production Coordinator: Mike Lucey
Editor in Chief: Csaba Pozsarko
Information is correct at press time.
Check www.sketchucation.com for updates.

SketchUcation
The friendly place for your Google SketchUp needs

Foreword...

First off.....Thanks!

We have received fantastic feedback on CatchUp and have added some new features to the interactive element of the magazine.

Articles now contain clickable icons that'll will take you to topics, files and websites!

Or if Social Networking is your thing you can join our Facebook group or our Twitter pages.

We hope you enjoy this month's CatchUp and continue to provide us with your valuable feedback, suggestions and ideas.

We are always listening!

means you can **email the person** directly

means you can **download the file** from forum

means you can **go directly to the forum** topic

FEATURED MEMBER **GUS ROBATTO**

Gus Robatto recently posted an amazing tutorial on the forums on how to create a tufted seat. Utilising some clever techniques and plugins Gus produced an incredible model of Miles van der Rohe's Barcelona Chair.

Fully modeled in SketchUp and rendered in Kerkythea, the leather upholstery and buttons were created using the standard "Subdivide and Smooth" with piping using "lines into tubes" and everything else is standard free SketchUp tools.

Gus's scene-based tutorial gives users the chance to dissect and investigate each step involved in creating normally head scratching geometry.

Gus, a Draftsman/Designer from Denver in Colorado, has 27 years of drafting experience from land surveying to civil and structural drafting. His drafting experience began with traditional drafting including ink on mylar, pencil, vellum, etc. Currently he is working with ADT 3.3, SketchUp 8.0 and Photoshop CS.

His architectural experience began with William J. Podesto in San Francisco and various other architects through the years. Primarily his focus is on architecture and development design for commercial and residential projects. This includes construction documents and renderings for residential projects and working with architects on commercial projects.

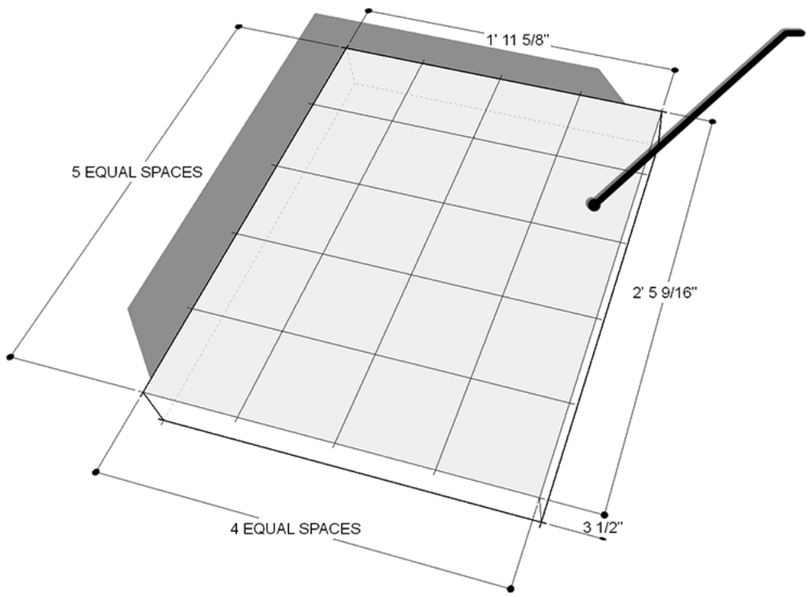
You can find out more about Gus at...

http://grobatto.design.officelive.com/default.aspx

B a r c e l o n a C h a i r

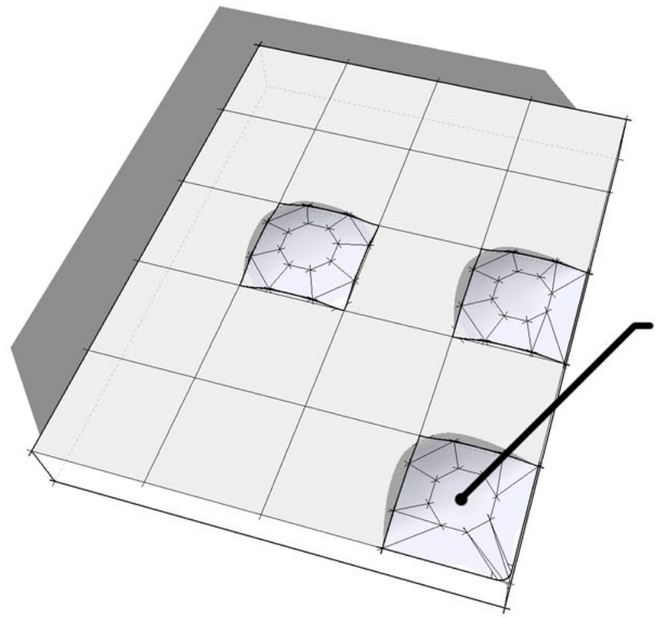
M i e s v a n d e r R o h e

R e n d e r i n g a n d M o d e l b y G u s R o b a t t o



Start by creating a rectangular box

Divide the top surface into 4 x 5 equal spaces



Subdivide proxy using either 'SDS' or 'Artisan'
Use 2 iterations to create a smooth subsurface mesh
As mentioned before you will need a total of 3 components

Use the centre most symmetrical shape for creating the foundation for all proxies

Proxy 'A'

Build 3 unique, yet similar, proxies as shown and use the different coloured squares to identify each proxies locations

Proxy 'B' is repeated and rotated 90 degrees

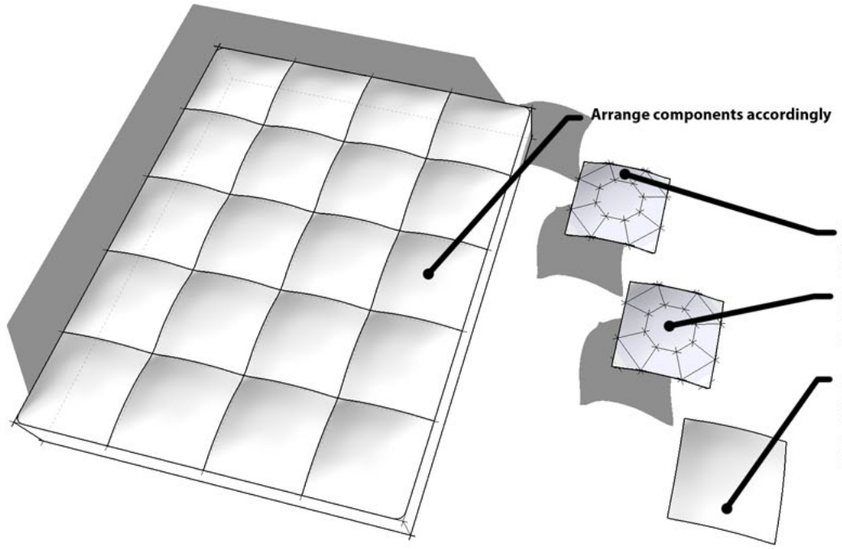
Proxy 'B'

Pay particular attention to the dimples for the button locations

'Crease' corners as required

Proxy 'C'

Provide anchor points for the rounded corners

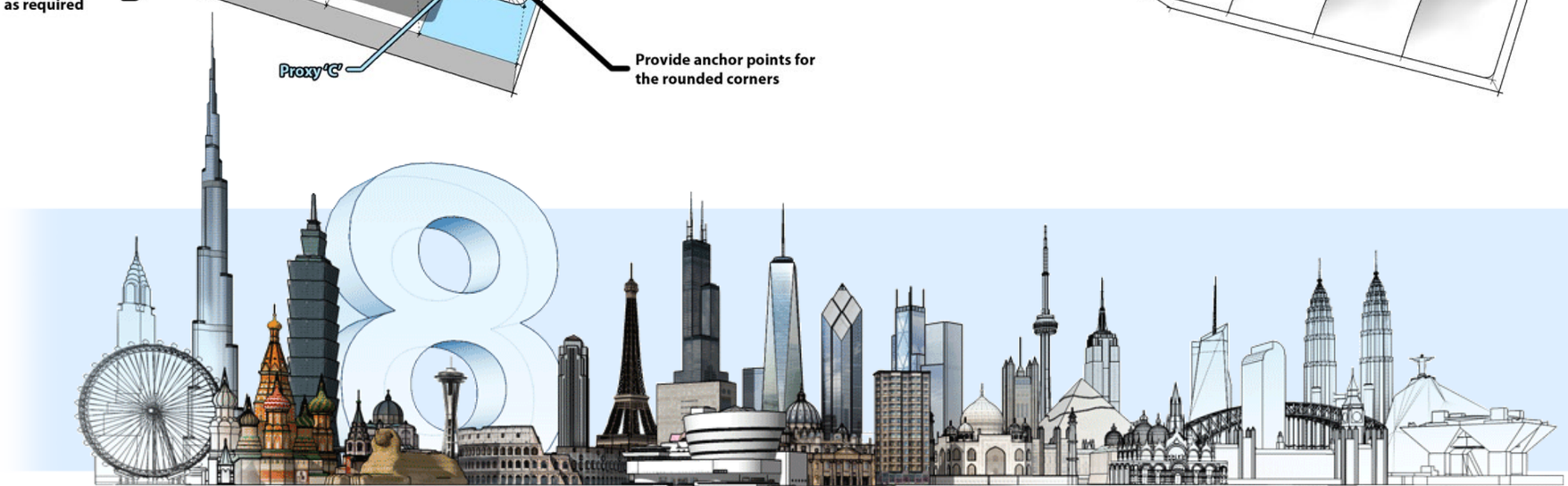


Arrange components accordingly

(1) Typically I will the take the proxy group with the component

(2) Explode the group and the triple click the proxy group and erase the geometry

(3) This leaves you with the component. Make sure you keep the original proxies so you can modify components as needed



go to the forum topic

download the file

You can also get the second part of this tutorial on the forums where Gus shows the method in creating the piping elements of the chair.

B a r c e l o n a C h a i r

M i e s v a n d e r R o h e

R e n d e r i n g a n d M o d e l b y G u s R o b a t t o

MASTERING THE ART OF 3D CONSTRUCTION MODELING

This is an update to our classic book, 3D Construction Modeling. The new book was written for **project managers** who want to learn first hand how to build their own piece-based construction models.

The book is an illustrated index of the **step-by-step** video explanations posted to the Insitebuilders video collection and linked from the **book's CD**.

More info at: www.insitebuilders.com

MAYOR MIKE'S - **GADGETS** 4

With the latest release of the iPhone, I find I use my normal cameras less and less. The iPhone's ease of use and the large (cheap) selection of photography apps on the Apple store just about covers everything an amateur photographer could ask for.

While the iPhone is great for those quick snaps, I find it's not good for video making. It's just too small and light to hold steady while panning and moving. My videos were giving my viewers motion sickness!

Over the past year I had been reading about various stabiliser devices coming on the market for the iPhone and last week I managed to get my hands on the iSteady Shot Arc.

The ARC is a nicely engineered and professional looking mini steady-cam made from aircraft-grade aluminum, stainless steel and plastic and its manufactured in the USA.

Okay, it doesn't fit in my shirt pocket but its quite portable measuring 7 inches folded, extending to 12.25 inches at full height and is 9.2 inches long. With the iPhone it weighs just 1.5lb so its not tiring for extended use.

After a quick set-up I was taking sweeping cinematic shots with the iSteady Shot and the resulting video was perfectly smooth to view, eliminating all motion sickness!

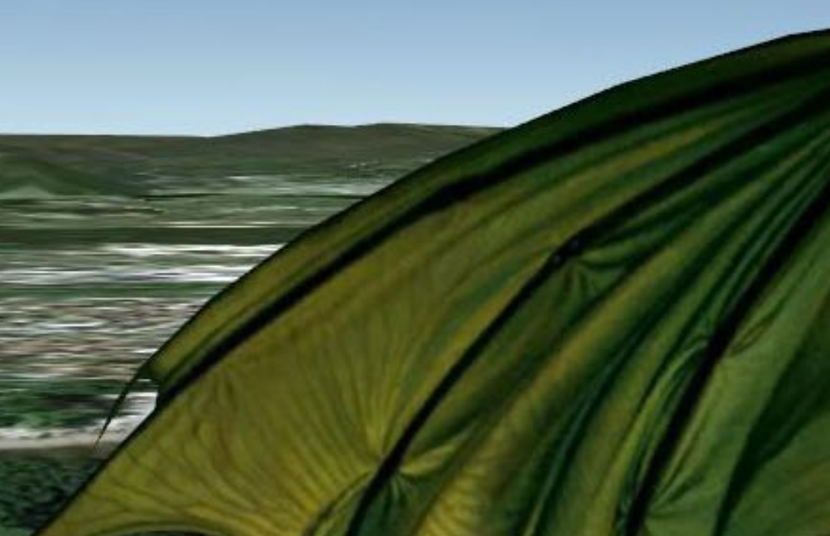
The ARC's tripod screw adaptor top plate holds most camera's under 1lb so I can also use my Canon Power Shot by adding extra weights.

Now the bad news! The ARC mini steady-cam costs $175! Initially I thought this price was a little on the steep side but after examining the quality I am happy that I have made a good investment. It looks 'the business' and does the job perfectly!

- Mike Lucey

ISTEADY SHOT

Google's April Fool with **SketchUp**



2006 46°03'00.10" N 14°30'29.21" O Höhe 306 m

Due to it's simplicity, SketchUp has been adapted across a wide range of areas for profesional use and free time. Another field of application, not so often covered on SketchUcation, is geo-modeling. Geo-modeling is the creation of 3D models of real-life buildings that are geo-referenced and will appear in Google Earth.

Since Google Earth has to deal with huge amounts of data in 3d cities, geo-models are often recognizable by their simple geometric shape and their emphasis on photo-texures. The challenge is to find a good balance between low complexity and good enough realism. After being uploaded to 3D Warehouse, those models are reviewed against certain acceptance criteria and then converted for Google Earth's 3d streaming technology.

Google's geo team selects and rewards a small group of geo-modelers who have contributed a lot of out-standing quality models.

Some weeks ago came the idea for April's Fool to add models to Google Earth that otherwise wouldn't meet the strict acceptance criteria. Around twenty of those selected modelers kicked off to start modeling animals and mythical creatures of various places around the world while Google attended to organize the technical things in the background in order to get two data pushes into the data centers at unusual dates.

During the whole day of April 1st, messages showed up in the whole internet about the discovery of a narwhal in the London Thames River, a Chinese dragon flying around skyscrapers in Canton (China) and a tightrope dancing elephant in Mountain View. Moreover there appeared a shark near amsterdam, a sardine in Marseille, a lobster in Boston and flying saucers.

- Andreas Eisenbearth

WHO IS THE TIG? AND DO WE TAKE HIM FOR GRANTED?

WITH OVER **100 PLUGINS** TO HIS NAME AND COUNTLESS FORUM CONTRIBUTIONS WE GO ROUND THE TRACK TO FIND OUT MORE ABOUT THIS **ELUSIVE GURU** TO SEE WHAT TRULY MAKES HIM ~~TIG~~...TICK!

IT LEFT US FEELING SLIGHTLY NAUSEATED, MILDLY AMUSED AND A TAD ENAMOURED....

Mr TIG had us round for tea and we got to pick his brains on all sorts of topics. From plugins to his view on SketchUp's future.

So TIG we'll start with the biggie. Google allow you time to play with their code, what would you change and why?
The main interface is pretty much perfect as it's simple and intuitive, however, I like would add '*the missing methods*' to the API - most users don't ever need to know about this but you can't do everything in code that could be done by hand - e.g. access to section-planes, text and dimensions is very limited and in some cases almost non-existent through the API... We scripters have to invent convoluted cludges to get around many of these, but some are insurmountable, or too convoluted - like get/set layer color or changing a text font.

Where do you see the future of SketchUp? What direction would you like it to take?
Developments towards using Sketchup as a basis for a BIM tools have been around for a while - I think it will come, but the API needs fully implementing and a suitable interface developing. Sketchup will continue to become more common and used by many '*generally*', its use by '*professionals*' is to be encouraged as I believe it is and will remain a very useful tool. With a few more tweaks like better UV-mapping, even better integration of renderers, lights/reflections etc would all help it '*keep up*' whilst leaving its basic core unchanged and hopefully avoiding the '*bloat*' we have seen with AutoDesk's and other big-companies' applications...

Are there plugins you think merit being absorbed into SU as standard?
I really think that a few tweaks like proper UV mapping in the standard version are all that's needed - users should then assemble a set of Plugins to suit their needs - not everyone needs Artisan or 2Dtools...

So what actually started you're interest in coding for SU?
I've always coded since Sonata in the eighties - Sketchup is so easy to use and customize I instantly fell in love...

So your skills aren't just limited to SketchUp?
No, I spent many years working in 3d CAD and customizing it for architectural use - in the eighties/nineties Sonata and then AutoCAD, then in the noughties Revit [grandson of Sonata] - like all Autodesk tools it's become bloated and while it can do almost anything, it can be daunting. It is not as intuitive as Sketchup but of course it's not the same thing either. It works well BUT for ease of use and a quick 3d model you can't beat SketchUp and you can import it into Revit. The converse export from Revit is still a pain in the arse!

'*Revitrev.org*' specializes in customizing Revit installations for architects - it's much more difficult to write tools for Revit as they must be compiled C++ or VB code and the API gets rewritten by AutoDesk at every new release which was particularly painful because almost all of my previous tools needed rewriting completely.

Some my tools include an Archive tool that audits selected drawing sheets for revision, amendment notes and status compliance with custom office protocols, and then archives them as optional DWF/DWG/PDF files named to required conventions [e.g. for ExtraNet sites], moving 'old' versions into subfolders etc so that only the current sheets are available to issue to other team a members at any time... I have also made automatic sheet making tools - the current built-in sheet making is pants and text find/replace tools that work across the model, on sheets etc as you specify... Customizing Revit is more lucrative than Sketchup, BUT I enjoy my Sketchup/Ruby work far more.

You've written so many plugins over the years but what's your favourite plugin?
My own Extrusion Toolset and Fredo's excellent Round Corners.

With the ever growing number of plugins available how many plugins are too many to have installed in SketchUp?
When your system is annoyingly slow to start, and like 'clothes' if you haven't used/worn it after a year it's time to 'store' it as you don't need it cluttering up your cupboard/plugins-folder!

Which plugin makes you say "Damn,I wish I thought of that"?
Whaat's Artisan....

So do you like to dig around in other scripter's code and who impresses you the most?
Of course! Where do you think I get my best ideas from? Fredo is probably the best: and Thomthom the most methodical.
You probably notice that I sometimes 'fix' other scripter's code for them which can have classic mistakes. For example, it crashes and fails to do something when it first runs because it can't find the very thing it's trying to write to the Registry. Fortunately Ruby error messages ARE very helpful if you read them carefully - it can then take seconds to find the errors and fix it.

Which plugin are you most proud of?
There are so many... ye olde '*Slicer*'. My '*Octane Render Sketchup Exporter*' is probably the most complex and ironically it has a limited user base because it's only available to paid users of Refractive's Octane Render software.
At this stage Mr TIG grew tired of all the plugin talk so we turned our attention to other matters....

Your renowned on the forums for being a cranky pants, why are you so cranky?
I'm like Victor Meldrew... I hope I suffer fools '*enough*' - but sometimes some users do do the most stupid things..
*"I can't get this ****ing thing to work! It's complete rubbish! Oh yeah dude... AND I haven't read the instructions, I haven't installed all of the required files, I put all of the files I have got in the wrong place AND I haven't given you any of the error messages I'm getting... BUT you MUST sort this out NOW! It might be a FREE script that I gave nothing towards BUT you owe me to fix this now!!!"*
- that is a compilation of the idiocy that we fend off... I DO try to help - occasionally I will say [in effect] - 'For God's sake just read the [bloody] instructions!' BUT I hope I do resolve people's problems and issues expeditiously?
But sometimes. 'I don't believe it!'

Your SCF profile interests says 'Everything' but surely there's things you're not interested in...surely?
I AM a '*polymath*' and see interest in most things... I have not tried incest or morris dancing - as their avoidance was recommended by the author Mark Twain

Star Wars or Star Trek?
Star Trek

Beer or Wine?
Both but not at the same time. Beer in the pub and wine with food. Unless the food's in the pub

Shatner or Picard?
Shatner

Shearer or Keegan?
Shearer

'I have not tried incest or morris dancing - as their avoidance was recommended'

We were beginning to get the distinct feeling that the interview was taking a strange route so we got back on the wagon!

What have you on the cards for 2011?
CADup - a proper way to setup and export 2D to CAD [with a good webdialog interface], Slicer4+Slotter with a good webdialog interface, possibly a commercial integration of another render app directly into Sketchup, finally finish 'AreaTag' tool, update ye olde XrefManager with a good webdialog interface, update Roof4 with a good webdialog interface, and fix all of my other scripts as glitches get reported - the more you write the more there is to break!

You mention web-dialogues alot, what are the advantages of using these?
The basic UI.inputbox is limited in what it can do, web-dialogs are much more complicated to set up but can do so much more - tick-boxes, scrollable lists, value-sliders and the like...

So finally, if you had one piece of advice for newbie scripters what would it be?
[Start simple, pinch other's ideas, keep trying] - I KNOW that it looks like three pieces of advice, but it's actually one array of three elements!

Battered, bruised and somewhat baffled we go our separate ways. Mr TIG has one last parting gift - ' Hadaway n' shite! Y'eejit!' Thanks TIG?

- Rich O'Brien

TIG
Architect and Software Developer
BA(hons), BArch(hons), Architect and RIBA

PRODUCT REVIEW

ARmedia Augmented Reality Plugin

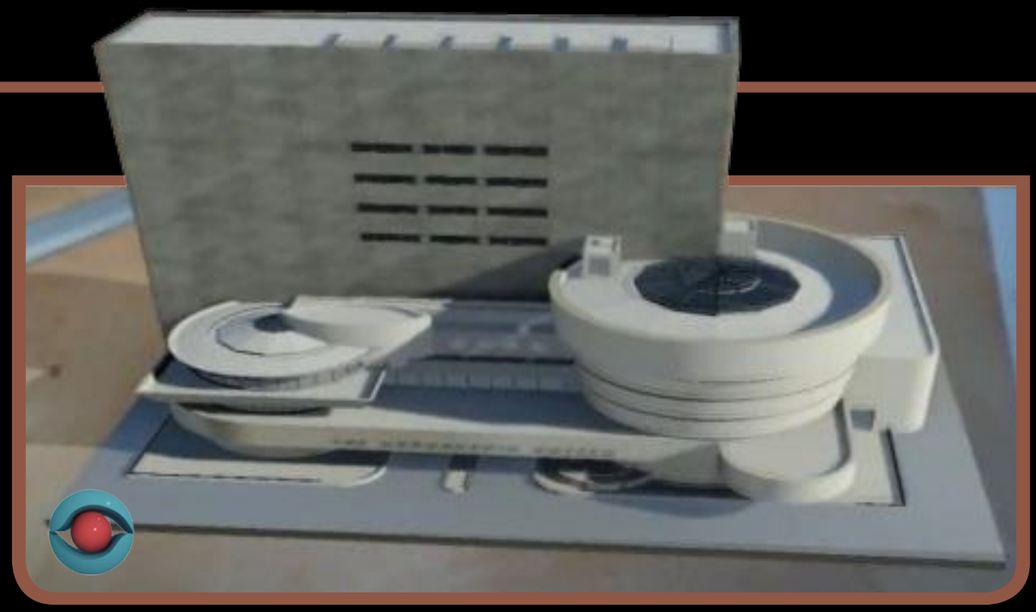
The expression "Augmented Reality" refers to the blending of digital and real world information by means of suitable computer interfaces in real-time. Augmented Reality technologies have started to spread worldwide during the last few years with a great impact on society.

Since the launch of the ARmedia Augmented Reality Plugin for Google SketchUp, many SketchUp users have got in touch for the first time with this so far almost unknown and unfamiliar technology. The very first impression was:

"WOW!", "Amazing!", "Very Cool!", "Is that really possible?, "This is magic!"

No doubt that Augmented Reality has an incredible appeal for technology oriented people. But soon after experiencing this "WOW" effect, people started asking themselves: what really is augmented reality? Is it more than a cool gimmick? Is it useful? But most of all, why should I use augmented reality in association with SketchUp? The aim of this article is to answer the questions above.

I'd like to start with some rough figures. In less than two years more than 20.000 users have downloaded the demo version of the ARplugin. There are more than 4.000 registered users and the trend is growing significantly from the latest release. ARmedia receive a lot of feedback every day from users coming from many different applicative domains. Therefore, they are now in the position to explain not only why people "should" find it useful but also why they "actually" do.



The first reason is scientific in its essence. Simply stated, augmented reality provides users with a completely new kind of experience that improves learning capabilities and helps people retaining information by modifying the way they interact with the world. Based on a "learning-by-doing" paradigm, augmented reality tends to perform better with respect to other technologies at supporting information-related tasks. By superimposing digital information on real world information, humans can improve their cognitive processes in an otherwise impossible way. In other words, if you want to "see the invisible" and if you want to impress your clients, partners, collaborators, students, teachers or just anyone, augmented reality is an unrivalled technology that will help you doing this.

Architects and Engineers

As the ARplugin is especially suited for the AEC industry, you should not be surprised that most ARplugin users are Architects and Engineers. In this context, architects, engineers and AEC professionals in general understand that augmented reality is a compelling visualization tool that can be used at different stages in the designer workflow, from project development to project presentation. Just to make a couple of examples, AEC professionals are using the software to create virtual maquettes they can interact with to better address design and development issues, as well as to create high-impact interactive presentations for their clients and partners. As Augmented Reality fosters participation and interaction, it is especially suited for professionals and firms who want to "activate" their clients. The possibility of sharing an augmented reality version of their projects with clients is granted by the availability of the ARplayer that can be downloaded by anyone from our website

"Any sufficiently advanced technology is indistinguishable from magic" - ***Arthur C Clarke***

Construction Companies and Real Estate Agencies

Not only architects and engineers are using the software, but also big construction companies and RE agencies have started using our AR technology to market their projects. A very interesting case study is the launch of Rossi Residencial's Fibrasa Connection. The brazillian construction and RE company launched a big campaign to market their latest development project named Fibrasa Connection in Vitoria, Brasil. The campaign employed our technology to help selling the real estate units and attract international investors. Augmented Reality has been used here to help potential clients visualize the development even before it was actually built in stands, website and also on site. Indeed, by using a copter equipped with a suitable AR system they helped potential buyers visualize the building in the real construction site at the real scale.

The reported results are impressive:

50% of the units sold in one month

+ 600 people at launch

+ 2000 stand visitors

+ 600 national reviews

+ 500 international reviews

+ 500 national Blogs

+ 30 international Blogs

Many spontaneous TV Reportages

+ 120.000 Youtube visualizations

Registered in the Guinness Book of Records as the biggest augmented reality marker in the world.

"visualizing the development using a copter equipped with a suitable AR system helped potential buyers visualize the building at the real scale"

Advertising and Exhibitions

Other domains of application for the ARplugin and ARmedia technologies in general are advertising and exhibitions design.

Advertisers and marketers have been the first to look inside the AR technology, first of all because of its novelty. Based on the interactive and attractive features of augmented reality technology, advertising agencies and professionals are employing it as a tool to promote products, services and brands typically in marketing campaigns that can vary in complexity.

Exhibition designers on the other hand have a great understanding of how augmented reality can be used to design interactive kiosks that will surely attract visitors' attention.

An interesting case study is surely the work by french design firm, Clair Design, led by architect and exhibition designer Serge Clair. In their activity for important institutions, such as the French Health Insurance, Clair Design created compelling augmented reality kiosks using SketchUp and ARmedia Tools.

In one project he helped visitors visualizing the internal organs of human body on a badge that the visitors was wearing in front of the camera. As a specialist in kiosk design, Serge Clair also designed many other kiosk applications.

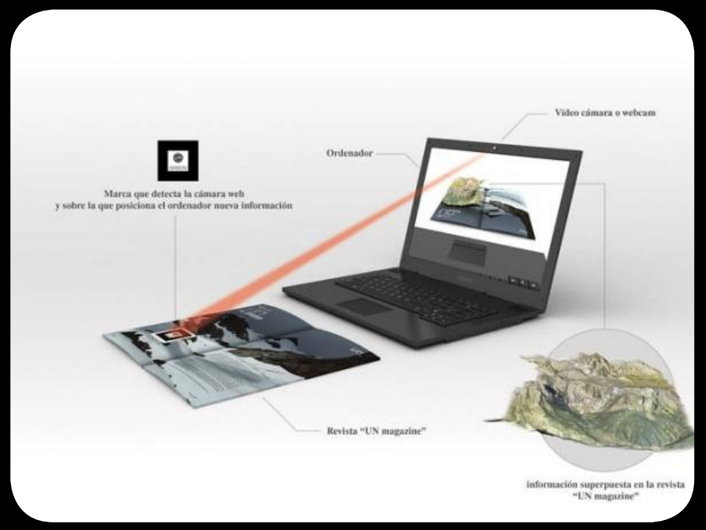
Publishing Industry

Media and Publishing industries are important domains of application for augmented reality technologies and ARmedia tools in particular.

Basically, publishing companies are using these tools as an aid to design new generation interactive books and publications. For example, the Chilean ICT department of world's famous publishing group Santillana, used ARmedia tools as an aid to conceive an augmented reality version of their encyclopedia Bicentenario especially targeted to 7-13 years old children.

The ICT department developed internally the new edition enriched with AR content that has been available since February 2011. In this case the ARmedia software has been used as an essential tool in the product design stage.

Another example of application of the ARmedia Plugin and Player is UN Magazine, a free spanish magazine addressed to the general public featuring articles on culture, journeys, technology and other topics. What is particular in this magazine is that every issue features Augmented Reality content that readers can enjoy by using the ARmedia Player and that is created using the ARplugin.



Augmented Reality in Education

The last domain of application of ARmedia Tools I want to present here is Education. It is incredible to see how many teachers from Primary School to University are using augmented reality as an aid to teaching in many different disciplines.

The most impressive thing is that AR is employed fruitfully not only in technical disciplines, such as Mathematics and Sciences, but also in Human Disciplines, such as History. This proves that Augmented Reality technology can be employed trans-disciplinarily to help students accessing and using information independently of the domain of application. This is the reason why ARmedia tools are used today by a growing number of schools and universities worldwide to help teachers and professors in their educational activity.

This is also the reason why important ICT consulting organizations for the Educational Sector are promoting the augmented reality technology to innovate the educational technology base. For example the UK organization Ramesys (www.ramesys.com) demonstrated ARmedia products at the BETT 2010 and 2011 (www.bettshow.com) which is the premier UK Education ICT show. They talked about how innovative technologies, such as AR, can be used to impact on education of children aged 11 – 19 years.

During their presentations they used both ARmedia plugin & ARsights as examples of cost effective, replicable innovative applications of technology that has the power to impact on education in a positive way. They showed ARmedia as a way to:

- Bring objects into the classroom you would not ordinarily be able to
- Manipulate objects created, in 3d cad systems by students, in real space
- Engage students that would not normally be engaged by embedding the image onto print media, to blend paper and digital media.
- They also used ARsights (www.arsights.com) to demo how data streams and presentation techniques can be blended and link to the geoWeb.

On the other hand, many educational websites have started providing teachers with tips on how to improve their teaching activity using AR. They also published tutorials and useful AR materials for teachers, like for example the Spanish EduBlog www.tecnotic.com that published some nice tutorials on technical drawing and graphical representation.

Conclusions

Based on this short review, it should now appear clear why the ARmedia plugin for SketchUp is growingly perceived by the wider designers community as a useful aid to design and visualization. On the other hand, new improvements are on the way that will make the software even better and usable. Even though the most demanding Augmented Reality projects require custom solutions, the ARmedia Plugin for SketchUp is still a powerful tool that can help users better achieve their design and visualization goals.

- Rich O'Brien

Graduated with honors at the University of Rome "La Sapienza", Terenzi is currently CEO at Inglobe Technologies SRL. He has done research activity in the fields of Artificial Intelligence and Cognitive Science, especially with regards to the development of neural networks models of perception and language. While working at the University of Rome and Pavia, he has dealt with research topics ranging from the Science of Design, Systems Science, Organizational Cybernetics and Semiotics to Immersive and 3D technologies, Virtual Reality, Augmented Reality and Augmented Cognition. During his career he has worked as a consultant on Sustainable Development and Interactive Design Methods for design firms and organizations. He taught Semiotics and Media Theory for the Master of Fine Arts (M.F.A.) at several Academies of Fine Arts in Italy and he is author of several contributions published in international scientific journals and volumes. In Inglobe he deals with the development of innovative Augmented Reality software and solutions.

INDUSTRY INTERVIEW **FLUIDRAY**

Nicola Candussi talks to us about FluidRay

Let's go straight to the point, why another rendering plugin for SketchUp? Aren't there enough?

Yes, there are multiple so called "rendering plugins" for Sketchup, but if you look closely, the name is misleading: they are more like exporters, they export the SketchUp scene to some proprietary format and then you have to do all the work (tweaking materials, light setup, etc) with an external application.

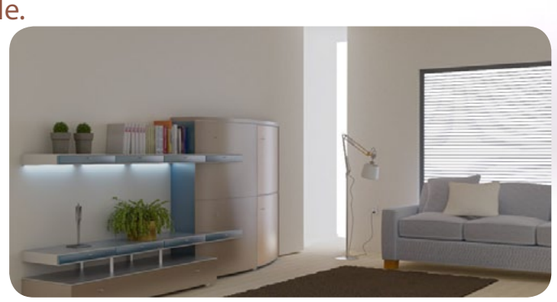
The workflow is really one-way, once you have exported the scene, you cannot get the data back inside SketchUp. FluidRay was specifically designed to be fully integrated with SketchUp. All the tweaking necessary to setup the final render are done inside SketchUp and all data is saved in the .skp file.

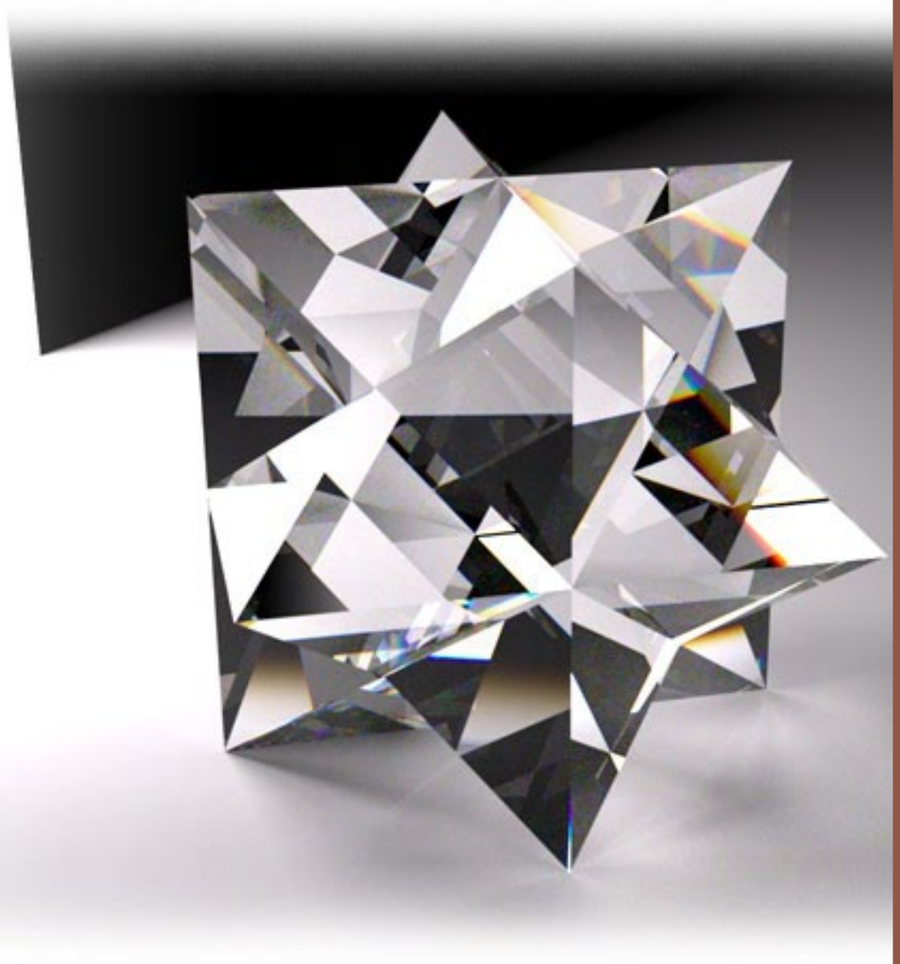
That sounds useful. Focusing on material appearance, how does this integration work? In particular, SketchUp materials have a rather limited number of settings compared to the ones required by realistic, physically based materials, how does FluidRay handle this workflow?

FluidRay enhances SketchUp with a custom material editor that allows you to create very complex shading trees, giving the possibility to model virtually every material appearance. Essencially, the standard SketchUp material properties (such as color, textures, etc), is just a subset of the properties provided by FluidRay. All the standard SketchUp material properties are linked both ways with the FluidRay material editor.

For instance, changing color in the FluidRay material editor will change the color of the SketchUp material and vice-versa. On top of that, the FluidRay material editor adds many other possibilities for customization.

With this architecture in place you can just load up your favourite SketchUp model and render it with the correct texture and colors right out of the box, with just one click. If then, let's say, you want to to make your rail look like realistic metal, or your windows look like frosted glass, you just fire up the FluidRay material editor, and with a couple of clicks you are done. All the information is then saved back to the SketchUp file.





Features

- Global Illumination
- Bidirectional Path Tracing and Metropolis sampling
- Accurately simulates effects like dispersion and thin film interfaces

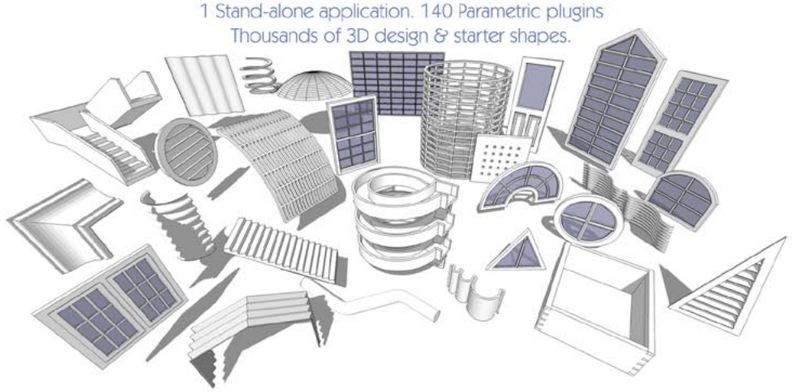
Camera
- Thin lens system, with depth of field

Lights
- Support for an arbitrary number of lights
- Every surface can emit light
- Environment lights

Environment lights
- Realistic physical sun and sky model, accurately simulates the spectral radiance based on the time of the day and location
- Illumination can also come from an hdr environment map

Output
- High Dynamic range and low dynamic range output
- Various image formats, EXR, HDR, JPEG, PNG, BMP, TIFF
- Multiple tone mapping operators
- Post processing effects like Bloom

Performance
- Highly optimized rendering core using SSE extensions
- Takes advantage of all cores/ processors in your system
- Network rendering
- Full integration with Google Sketchup interface
- All editing is performed from inside Sketchup's interface
- Multiple renderings can be lanched at the same time while tweaking the model appearance
- Renderings can be paused and resumed



What kind of realistic materials are available?
There is a large set of base materials, with includes matte, plastic, metal, glass, frosted glass, car paint, procedural materials to name a few. The real power comes from the possibily to combine and customize them in many different ways. All material properties can be a constant value or have a texture assigned. Textures can be bitmap images or can be procedurally generated. The workflow is very simple and effective. You can create, for instance, a checker tiled floor where the black tiles are matte and the white tiles are plastic in just a few clicks.

On top of that, you have effects like bump mapping and physically based refraction for glass.

What about the lighting options?
Every type of light setup is supported. Speaking of exterior lighting, there is a physically based sun/sky model (simulating emission on a per-wavelenght basis), which is kept in sync with SketchUp sun direction, or an HDR environment map can be used. Many other possibilities are available. For interior lighting, for instance, every surface can emit light, and the emission distribution is highly tweakable, using, for example, IES profiles or texture maps.

What kind of rendering algorithm is under the hood?
The algorigthm is a modification of Bidirectional Path Tracing with Metropolis sampling. It's among the best algorightms the current research on Global Illumination has to offer. It's unbiased, and it's designed to progressively reach the best quality over time. It is the root of FluidRay's ease of use. The render settings are limited to the essencial, there is no need to tweak parameters with esoteric names, the render will always converge to the best quality. You just save the image once you are satisfied.

SketchUp application is 32bit only. Does it mean that FluidRay memory is limited to 3Gb?
FluidRay comes also in 64bit variants, so, even if SketchUp is 32bit, the rendering engine is fully working in 64bit mode, making the total amount of ram available for rendering.

FluidRay is available for Windows. What about the Mac version?
We are currently working on FluidRay for Mac, and it will be available soon.

Is it possible to try FluidRay?
Yes, the demo version of FluidRay, which includes all the features of the full version, is available for free at www.fluidray.com

- Rich O'Brien

"create a checker tiled floor where the black tiles are matte and the white tiles are plastic in just a few clicks."

FluidRay
Physically Based Renderer

MAYOR MIKE'S - **USEFUL APPS**

In this month's CatchUP I am introducing a very useful application, Inpaint Standalone. This Windows and Mac program allows for easy removal of unwanted objects from an image.

For those of us that use SketchUp's Photo Match this tool will prove invaluable. How often have we found a post or pillar obscuring part of a building we need to photograph? Within a few minutes Inpaint will magically remove the obstruction and heal the image for use in Photo Match or texture work.

In the image below I demonstrate Inpaint's usefullness. The green pillar was removed from the picture of the Shop Front with a few clicks of the mouse and all done and dusted in minutes.

Users of PhotoShop CS5 Extended will be familiar with 'Content-Aware Fill', a similar tool! However this same end result can be achieved with Inpaint for $39.99!

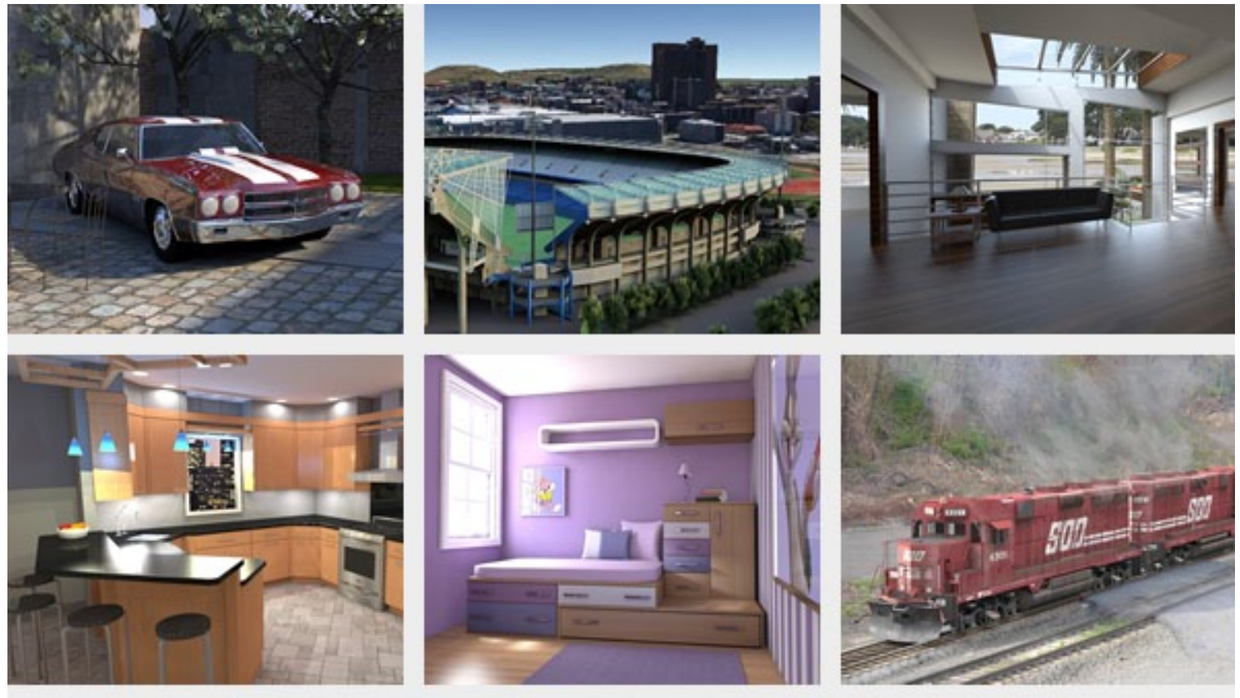
There is also an on-line free version to try out here.

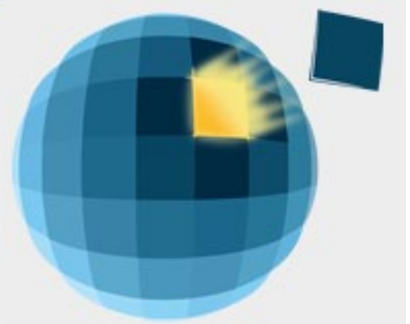
The developer also offers ways of obtaining Inpaint for free!

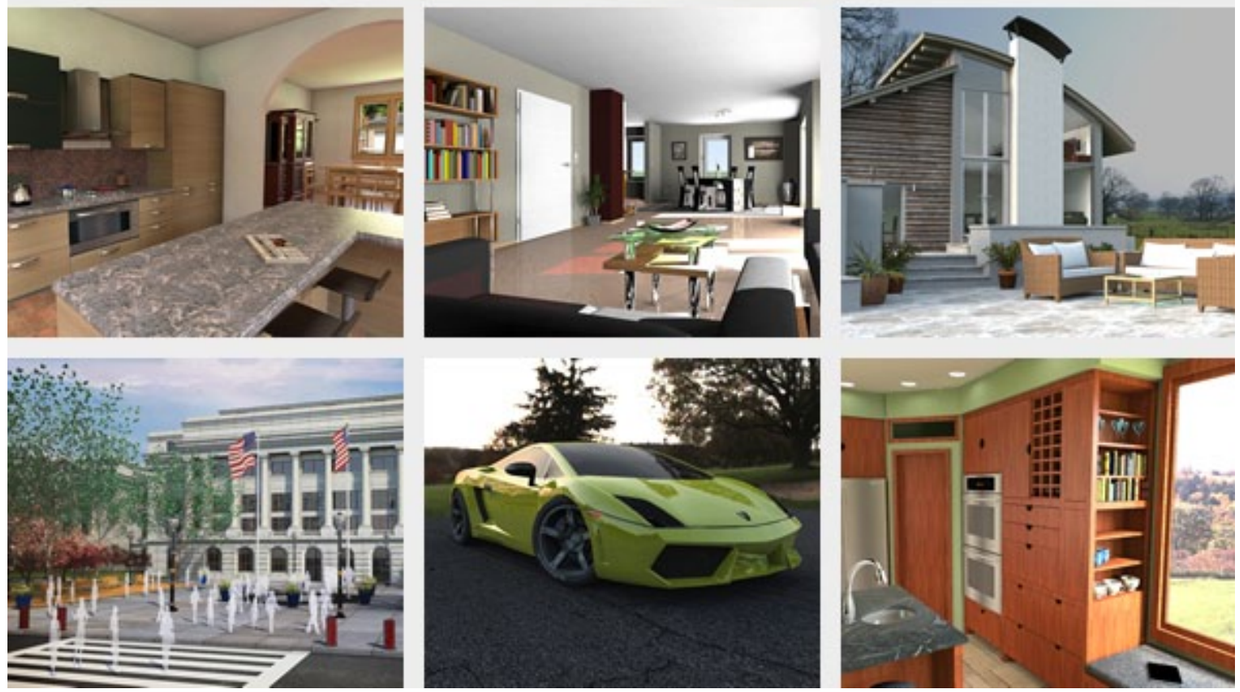
'***You can earn a complimentary license by helping us raise awareness of Inpaint an article or tutorial about Inpaint on your own website or sites like eHow, YouTube...***
Contact us and send us a link to the article or tutorial.Once we receive and have verified the link we will send you a complimentary license. Please note that you need to post unique content not already existing in our site.'

I hope you find this application interesting and useful!

- Mike Lucey

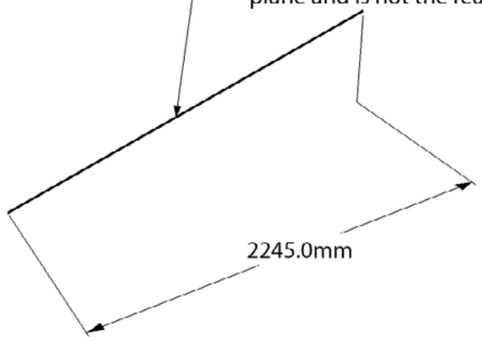






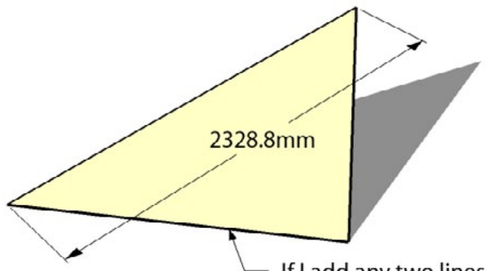
LEARN WITH LEMIRE **DIMENSIONS**

With a diagonal that is not parallel with any of the standard axes, it can be difficult to get a dimension that will give the real dimension of the line. The best you can acheive is this. However this is a projection on the horizontal plane and is not the real length of the line.



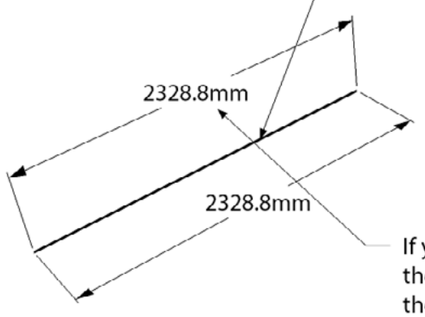
go to the forum topic

download the file



If I add any two lines to define a triangular plane with the line, I can use this plane to force the position of the dimension to be on that plane
[Some orbitting may be required]

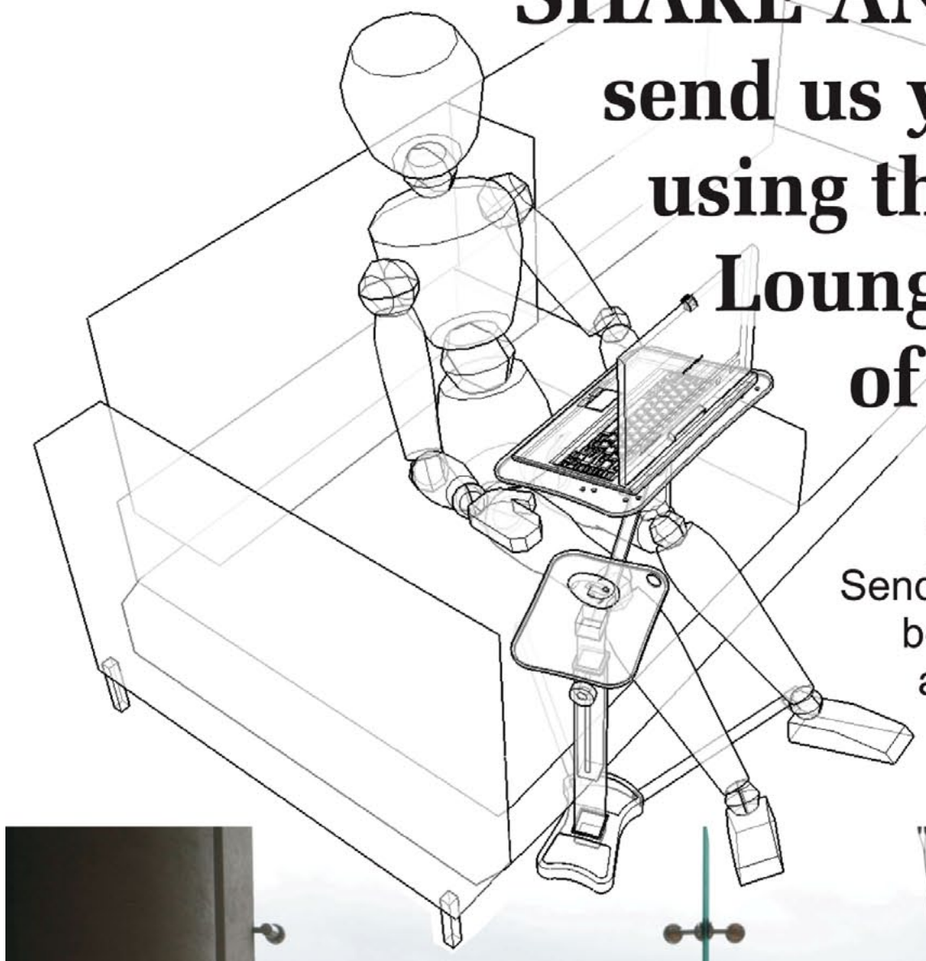
After that I delete the two added lines

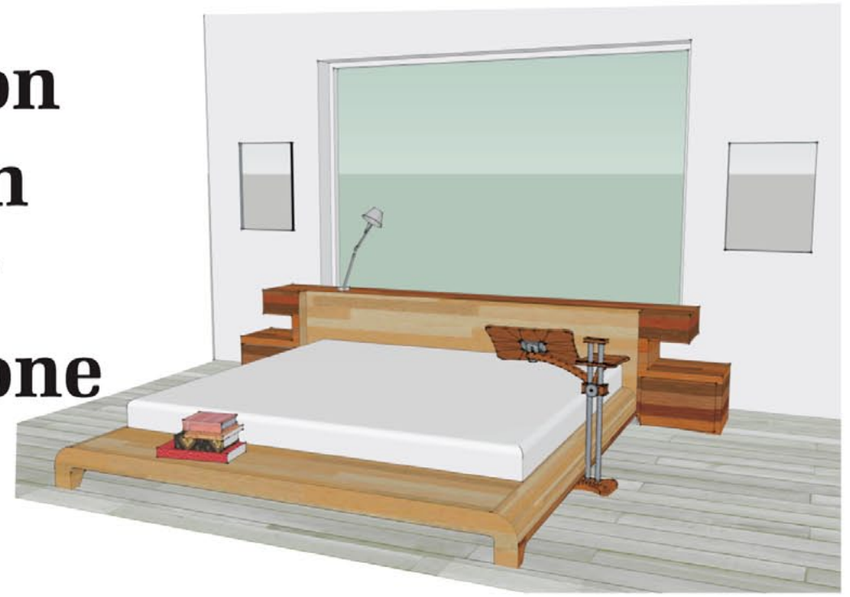


If you prefer, you may even rotate the dimension using the line as the rotation axis

Jean Lemire
Mechanical Engineer
Richelieu, Quebec, Canada

SHARE AN IDEA competition
send us your 3D simulation using the Lounge-Book or Lounge-Wood and win one of 10 laptop tables





You can find the skp product model on our site http://www.lounge-tek.com/share
Send your images and/or a navigable 3D pdf model to sketchup@lounge-tek.com before the end of May 2011, an evaluation panel will be composed by Lounge-tek and Sketchucation components. The best 10 models will be awarded with one of the 2 Lounge-Wood or 8 Lounge-Book Crystal units. All images and models will be published on the Lounge-tek site with your addresses and references.

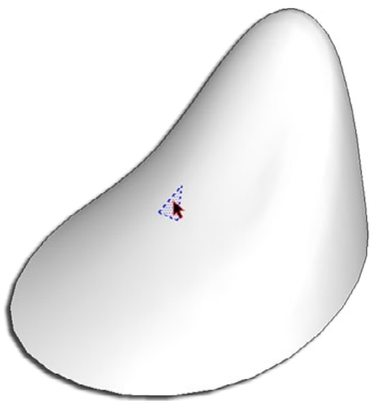
Tgi3D SU Amorph by Ocali Inc has been around for the last year. Lately we've seen a series of updates introducing new features and implementing some feedback from it's users.

I made use of the new 30 day trial to see what exactly is on offer for $149.

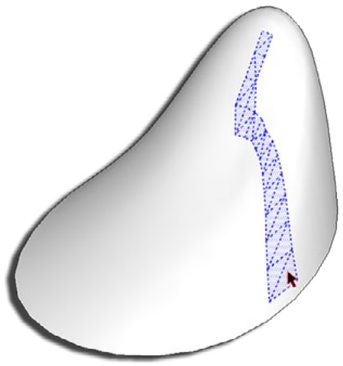
We'll start with the toolbar. You've 5 options to choose from - *Select*, *Move*, *Construction Point*, *Cross Section* and *Settings*.

The Tgi3D Select tool is similar to Fredo's HoverSelect plugin so you will immediately feel at home with this tool. It's extremely intuitive and has some clever features included that really speed up workflow.

So, what's so great about it? Firstly, '*single clicking*' a face selects it's face and edges even with Hidden Geometry turned '*off*' as you can see below. Pretty nifty feature...



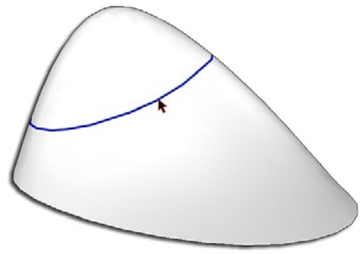
...but if you 'click and hold' over a face you can continue to paint your selection of faces.



Once you've your selection made you can '*right click*' and choose '*Tag Faces*'. Tagging faces allows you to make a selection and when you '*double click*' a tagged face all tagged faces are selected. Having to ability to select, tag and untag faces allows you to create custom selects for texturing or transformations. There are '*Selection Memory*' plugins out there but this tag/untag feature comes into it's own later.

'*Double clicking*' selects all faces and edges until a boundary or hard edge is met. This is the same a the standard SketchUp behaviour but if you've already a surrounding selection it limits to that selection. But you can also use the standard modifier keys (Shift or Ctrl/Option) to add and subtract from your selections with some very clever additions.

One of my favourite features is the Ctrl/Option left click on an edge or curve. It's basically like a '*Loop Select*' tool.



If you select on curves then all the curves are selected until they branch. It's a great timesaver!

In essence, the Tgi3D Select tool is the precursor of Amorph's capabilities.

"To appreciate what this does you need to know what lies under the hood"

Next is the Move tool. A completely different animal from the native SketchUp Move tool. To appreciate what this does you need to know what lies under the hood in Tgi3D SU Amorph.

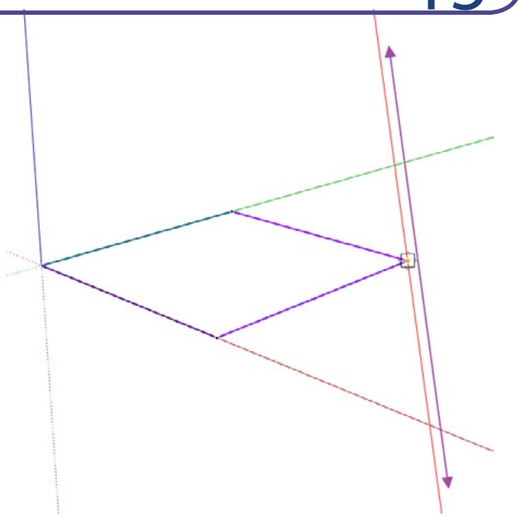
Amorph offers a plethora of options via the right click context menu. One of the most interesting is the '*Lock Vertex*' feature. This is like a snapshot tool for geometry.

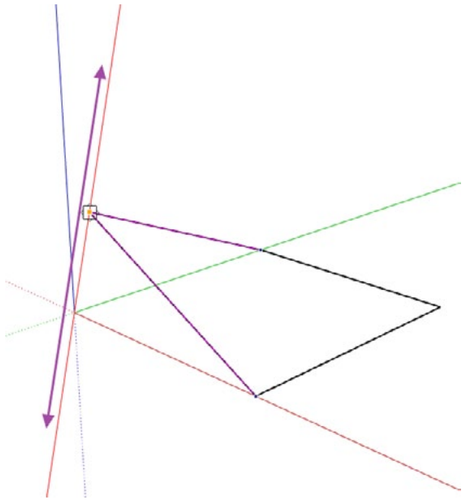
You can select your geometry and choose '*Lock Vertices*' and your viewpoint is used as the direction to which the Move tool constrains it's movement. It's like the standard inferencing engine but applied in any direction you choose. Even if you orbit away from that viewpoint the locking remains. This offers a level of accuracy to organic shapes that was previously impossible.

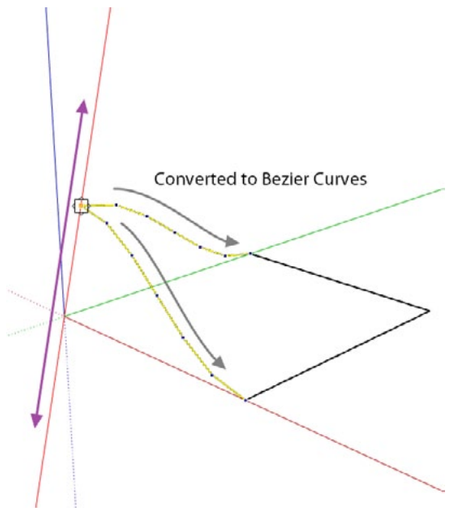
But there's more! The Tgi3D Move tool can convert lines to Bezier Curves by simply pressing Ctrl/Option.

In the images opposite you first see how I locked the vertices to a viewpoint then moved the vertex constrained to that viewpoint and finally how the line were changed to Bezier Curves.

These curves are assigned with 7 segments by default but you can easily resample this via the context-menu. You can also split Bezier Curves by simply double clicking at the vertex where the split is required.







So where can the '*Lock Vertices*' feature be applied? Anywhere really. If you use PhotoMatch in SketchUp then it's safe to say this will be your new best friend. If you work with Blueprints then you'll get a noticeable increase in modelling time. This '*View Lock*' feature offers something new in SketchUp that hasn't been done before. At first I found it quite confusing to get to grips with but now it's second nature.

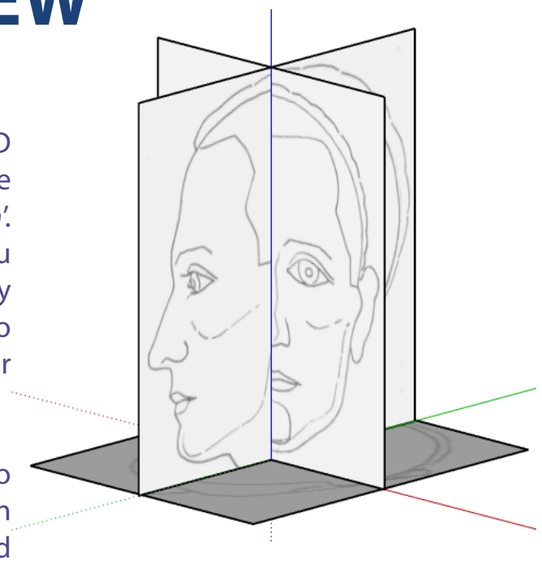
Whilst I've focussed a little on the view locking ability, the Move tool isn't solely tied to this. Used as standard it can move vertices via two modes. The first is based on your current view whereby you can move vertices parallel to your view. The other is to use a face as a reference for the direction of moment. Both these methods don't make use of SketchUp inferencing engine which makes it extremely easy to adjust vertices to suit.

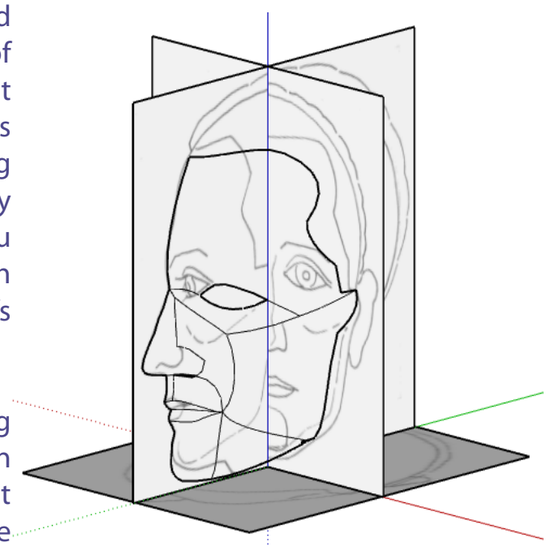
But the Move tool really comes alive with the '*Create Mesh*' feature. So, up to now, we've seen how the Select tool works well with geometry and the Move tool can create very accurate forms. Tgi3D Amorph can skin these forms via '*Create Mesh*'. This depends on how you created your geometry but you can skin in two methods, Classic Bezier and Smooth.

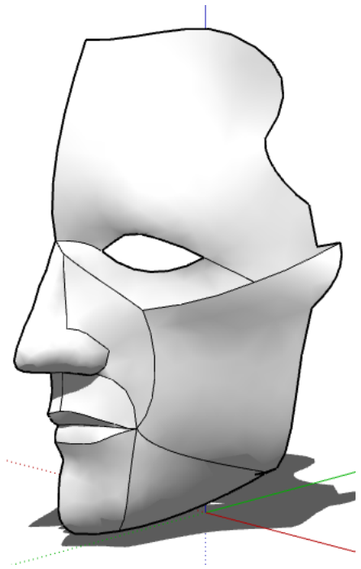
If you used the Move tool to create Bezier curves then the mesh is now primed for further adjustment and can also take advantage of the View Lock feature. But one particulary ingenious feature is the smoothing operations. By simply pressing 'U', 'Y' or 'D' you can transform your mesh using Tgi3D Amorph's smoothing algorithms.

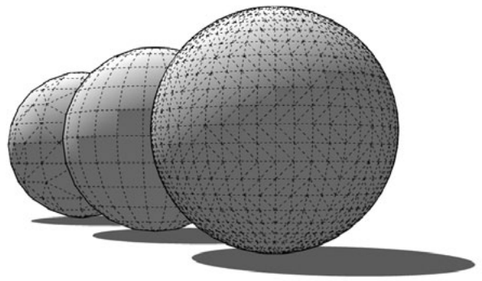
These smoothing operations work an absolute treat but it gets better. Because the smoothing is limited to 'hard edges' you get noticeable creases at these boundaries. But simply softening these 'hard edges allows Amorph to smooth uniformly.

In the images you can see how I created a framework using Bezier Curves and 'Lock Vertices'. Then I skinned these with 'Create Mesh'. It took literally minutes to model with relative ease.





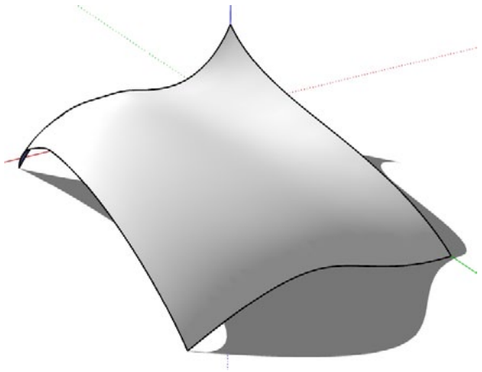




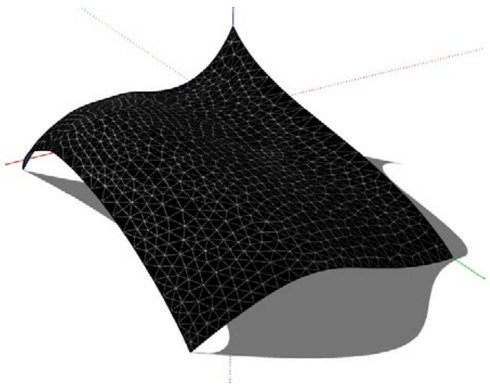
Now, there are further tools in the context-menu that shouldn't go unmentioned. You can triangulate, remove unnecessary lines, collapse geometry and slice. Each of these add further possibilities to an already growing arsenal. But there are three in particular that deserve some attention

Upsample and Downsample allow you to control the mesh density through customised parameters. Downsample in particular needs to be tweaked to get good symmetrical results. Whilst Upsampling I found produced super smooth results. But both these features uses Amorph's algorithm to transform meshes and it produces quite different results than Artisan's 'Smooth Geometry'. Better? Yes! Mainly because it retains the mesh size whereas Artisan reduces the mesh size to smooth geometry.

TGI3D AMORPH **REVIEW**

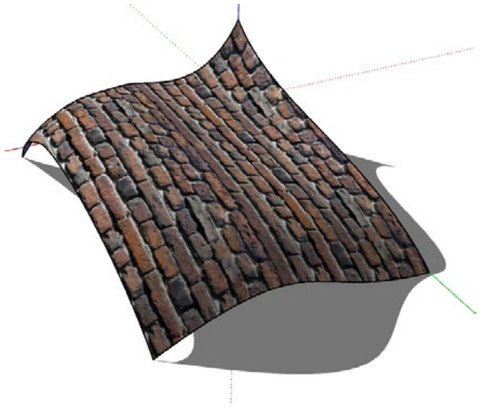


Then we have the Texturing tools. The big question is.... have Tgi3D cracked the UV mapping issues in SketchUp? Not quite but they have come pretty close. You've two mapping modes, 'Spherical' and 'UV Unwrap', but unless you've a image editor like GIMP or Photoshop you won't get any benefit from either. Once you've picked your face to texture Amorph applies it's own material to represent the UV mapping. This can then be edited in your image editor by overlaying your own texture and saving.



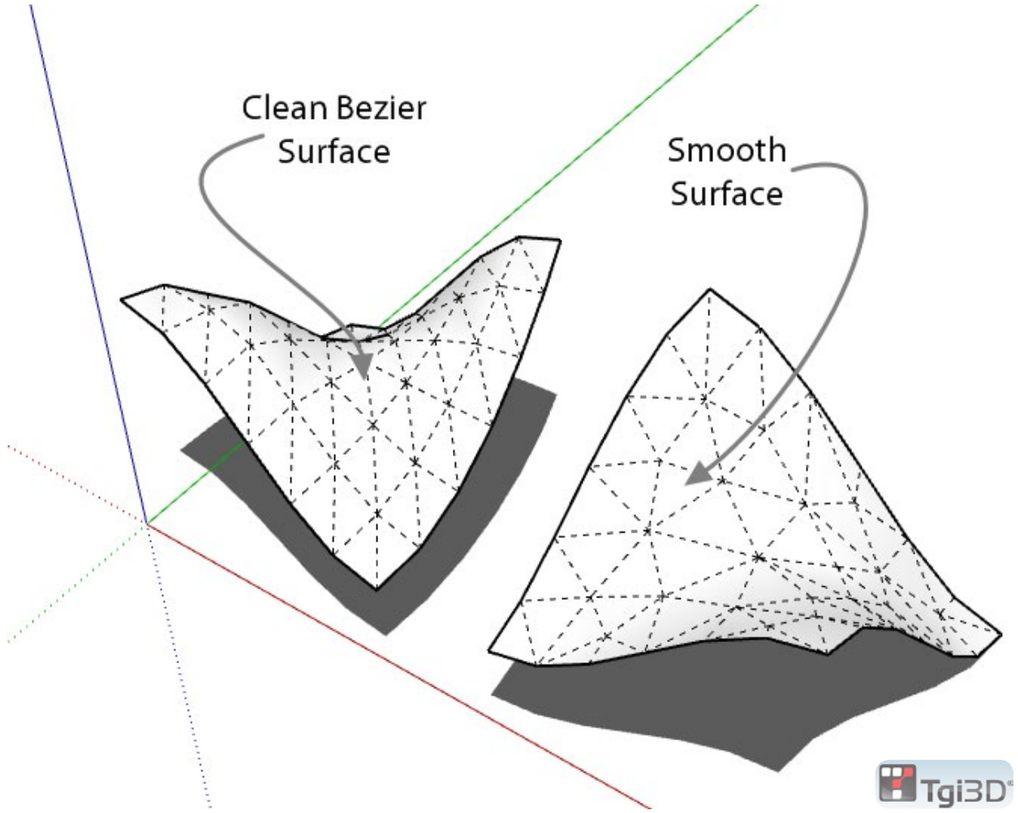
The 'Spherical' mapping mode works like a charm and so does the 'UV Unwrap' but not so much on organic shapes. It takes alot of practice to get a good workflow with the 'UV Unwrap' method. But if you work in chunks and build a series of overlapping maps it works flawlessly. That's where I found the 'Tag Faces' feature useful as I could select my faces, tag them, then create a texture map and then use the tagged selection as a reference for the next map.

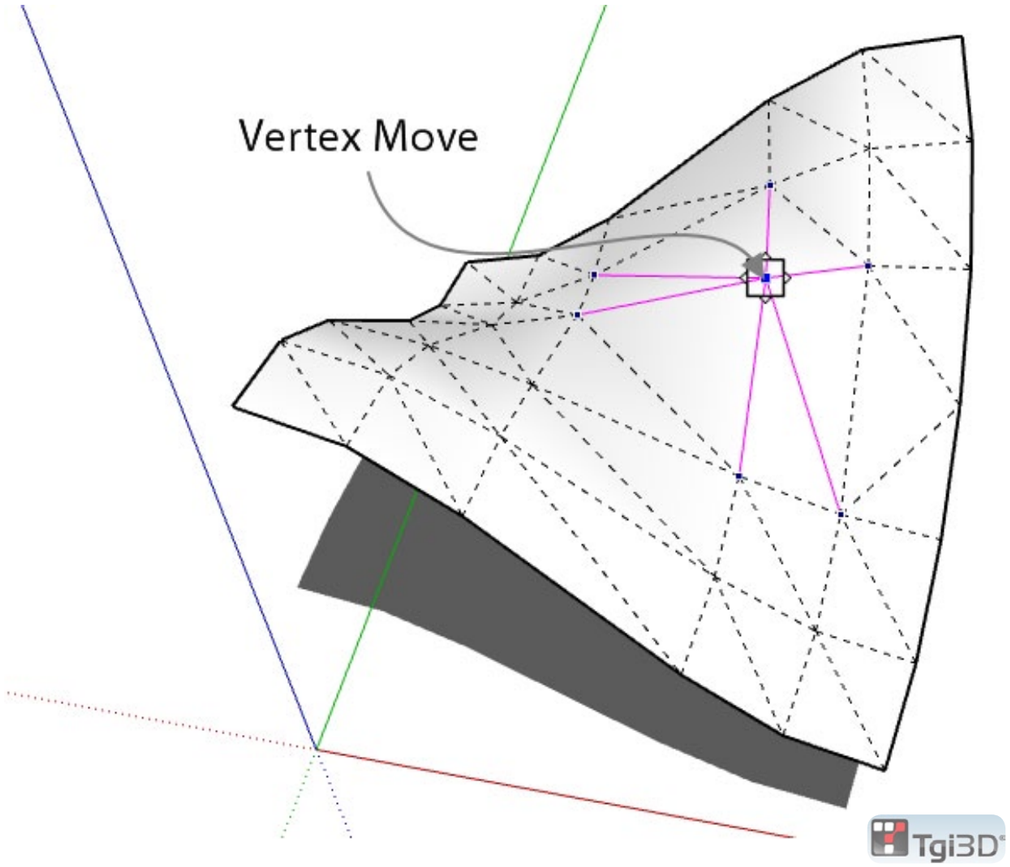
Once you have your mapping complete you can still make transformations to the mesh and not effect UV map by using 'Safeguard Textures' feature. This allows you to sculpt/deform your mesh and then restore the UV map.



All in all 'Create Texture' is tackling the much maligned UV mapping issues within SketchUp head-on. Whilst the jury is still out on whether or not Tgi3D have a total solution they certainly have set in place the framework to succeed.

Also, rumour has it that they've more plans for their Smart Texturing feature.....





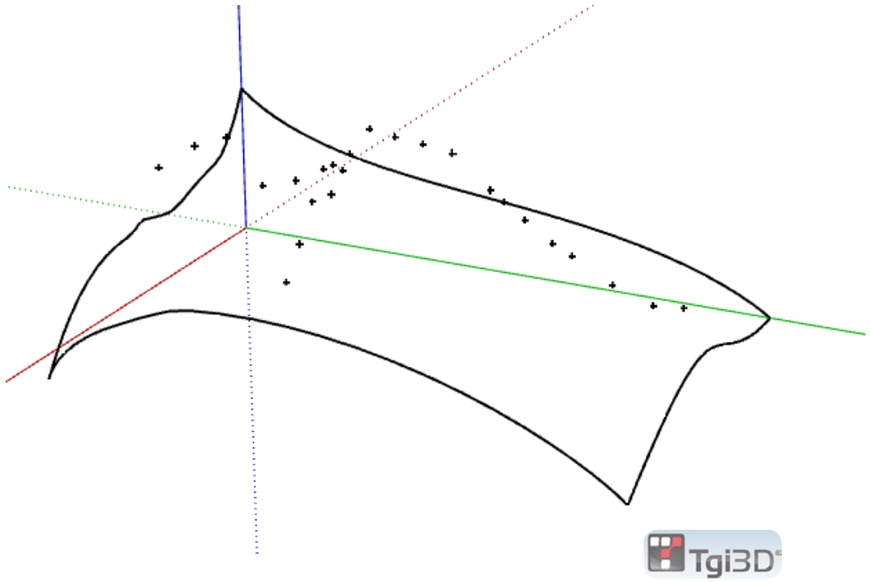
TGI3D AMORPH **REVIEW**

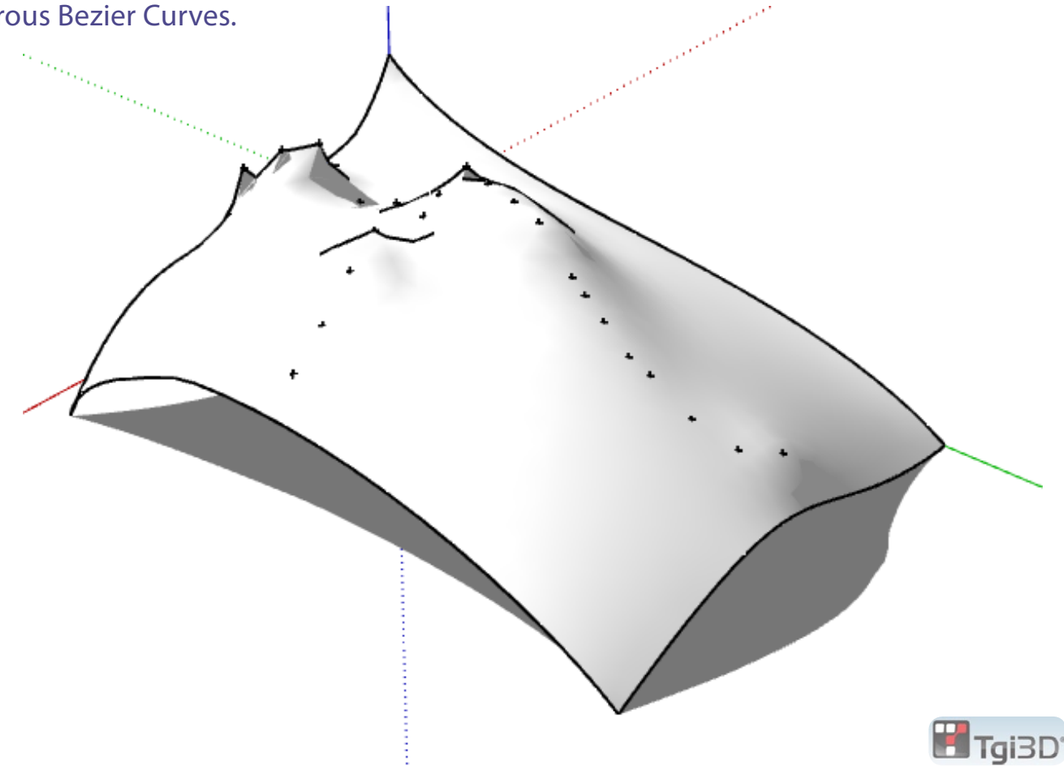
The final set of tools are Construction Point and Cross section.

Construction Point simply places a construction point where you click. Mainly used when applying the 'View Lock' method as these also have the ability to be locked, fixed and moved.

You can also use construction points as a 3D location for the 'Create Mesh' feature.

Actually I found this tool pretty useful when aligning meshes to images. It saved having to created numerous Bezier Curves.





Finally, we have the 'Cross Section' tool. It creates loops as you can see in the images to the right.

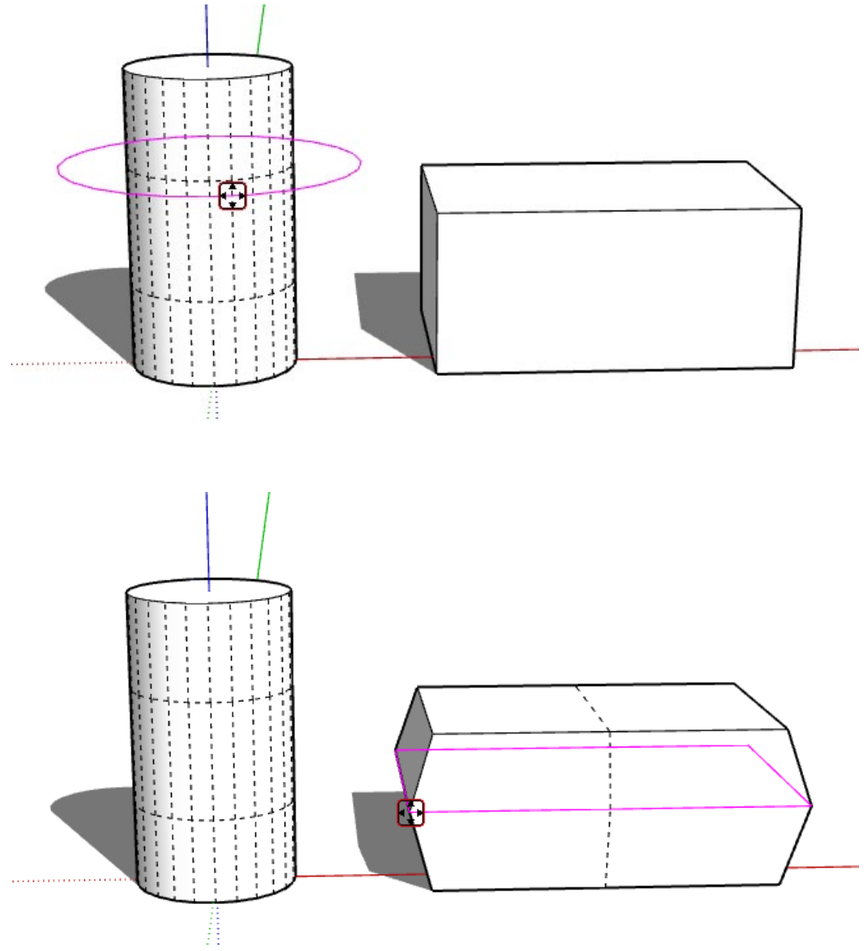
These can then be scaled by simply dragging in or out with the mouse.

But I found myself using it as a subdivision tool for proxies in Artisan.It works perfectly and it'll indicate on screen when it is unable to create a loop.

Not only that if you hold the modifier keys after placing a loop you can then drag that loop either up/down or sideways.

I absolutely love this tool! It's one of the simplest yet most time saving addition for me to have in my SketchUp workflow. But one issue I had was it doesn't inference endpoints or midpoints. If the team at Tgi3D are able to implement this it'll be a huge improvement to its usefulness. Even so it's still a great feature!

Tgi3D SU Amorph is a steep learning curve with so much in it's utility belt that you need to devote alot of time to learning it's nuances.



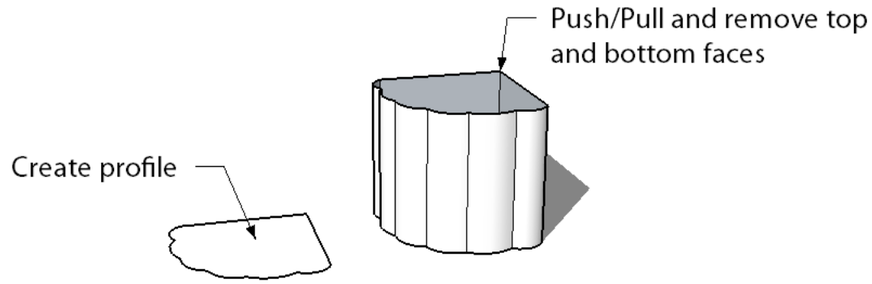
Since I begun this review Tgi3D have since released two updates which shows their intent on keeping Amorph in developement. In fact they've paid particular attention to members feedback at Sketchucation and now offer two licences for $149.

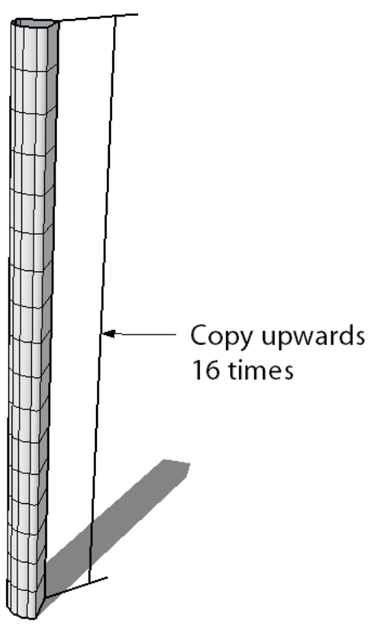
So, it begs the question, is Amorph worth $149?

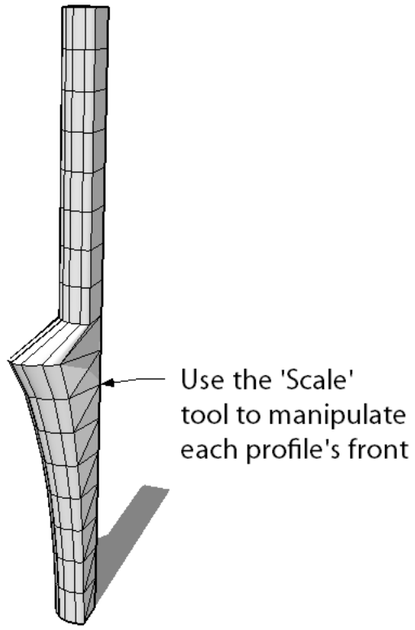
In my opinion, it depends on your ability level. This really is bringing a level of modeling accuracy to SketchUp that hasn't been so readily possible before. It's not like other plugins that offer great fixes or quicker methods. It's introduced a whole new method of modeling, a cunning set of tools and features that haven't been explored before. So this has tons to offer the intermediate to advanced SketchUp users.

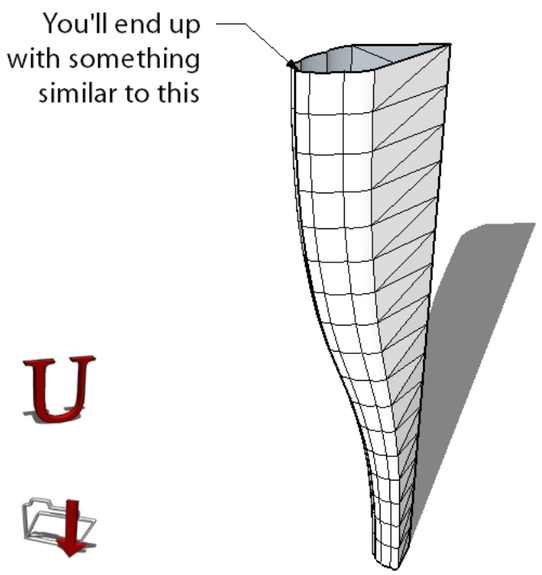
If you haven't already tried I highly recommend giving it a whirl. You won't be disappointed!

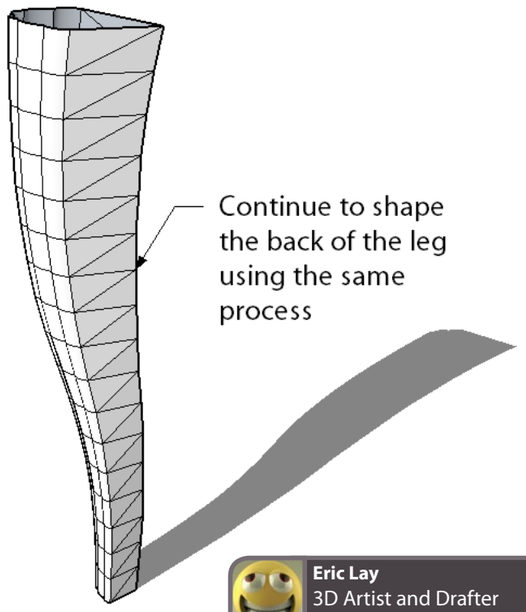
- Rich O'Brien

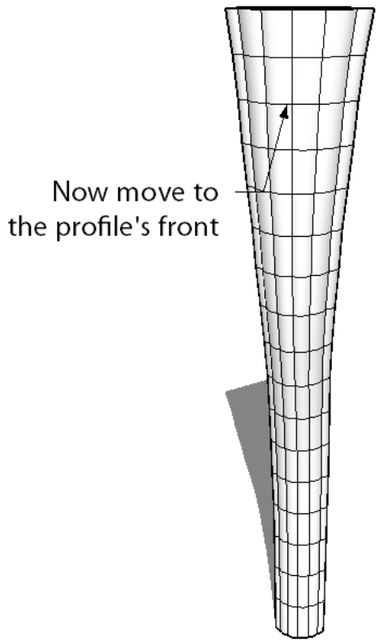


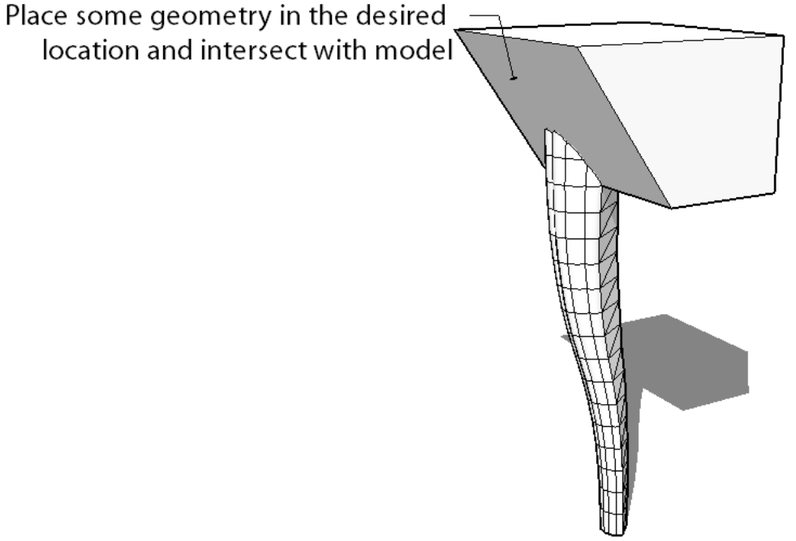


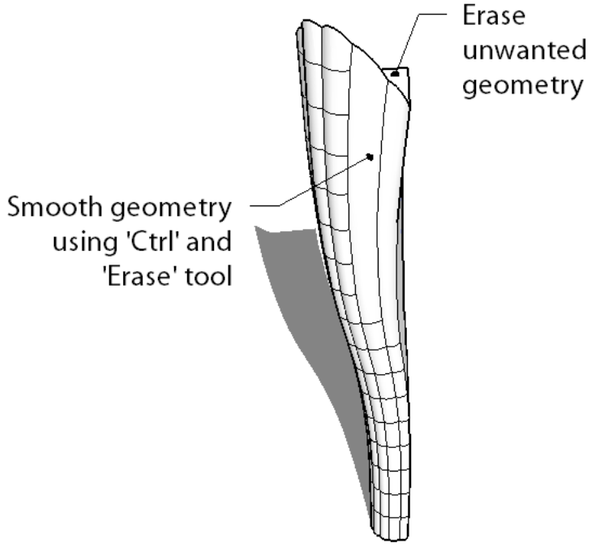


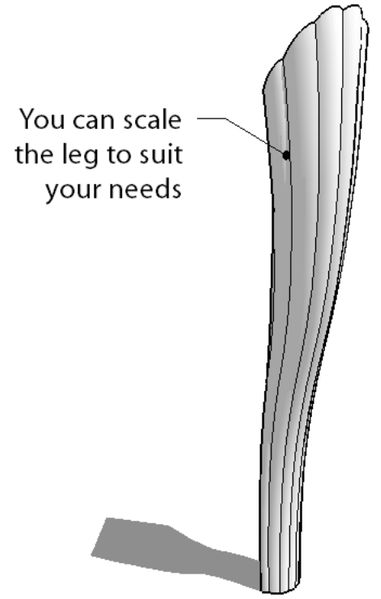












Eric Lay
3D Artist and Drafter
Huntsville, Alabama, USA

Google building maker

Google's Building Maker is just over a year old now. A few months after Building Maker was launched, I visited my capital city Budapest, Hungary on Google Earth and I was surprised that within the boundary of the available Building Maker imagery, it is almost completely built up. When I was trying to model a couple of buildings to get my Google Geo 3D Developer certification, I was really happy to find two shabby buildings not yet modeled (somewhere near a railway station in the outskirts of the city). Over Building Maker's baby steps and on the occasion of him having been working on Building Maker for a year now, we have asked Product Manager Bryce Stout of the Google SketchUp Team (yes, "that" well-known "Bryce" from SketchUp 6) how the team and himself would evaluate the success of Building Maker and in the meanwhile we also hoped to get some sneak view behind the scenes – as much as it is possible at least. Here is what Bryce answered to our questions.

What was the first idea that lead to the development of Building Maker and whose idea was it?

Our overarching goal for Google's geo products is to construct a virtual mirror of the world and allow everyone to contribute information. Building Maker grew out of the huge compilation of imagery for Google Earth, Maps and Street View. It was a natural step to find a way to reconstruct the world in 3D from all the imagery we had available. Also, since Google is a web-based company, it made a lot of sense to create a web-based tool for modeling buildings from photos. This allows anyone with a web browser and the Google Earth plugin to contribute 3D buildings.

What was the process that made it possible to add Building Maker?

Building Maker is basically photogrammetry – the process of extracting information from photographs. If you have a bunch of photos and you know generally where those photos were taken from (the camera's position), you can essentially measure objects by identifying common points in different photos. This is what the process of aligning Building Maker primitives accomplishes. The other crucial part is automatically creating textures for the 3D models. We attempt to select the best view for each building surface and apply the best imagery to the model.

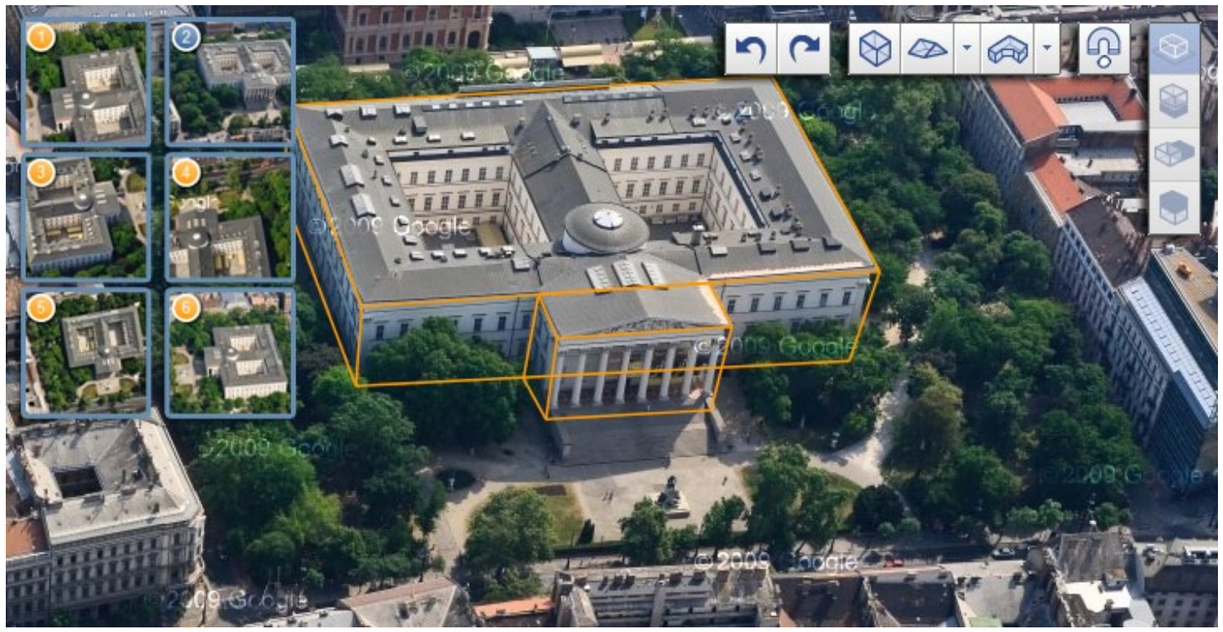
What was your own role in making Building Maker?

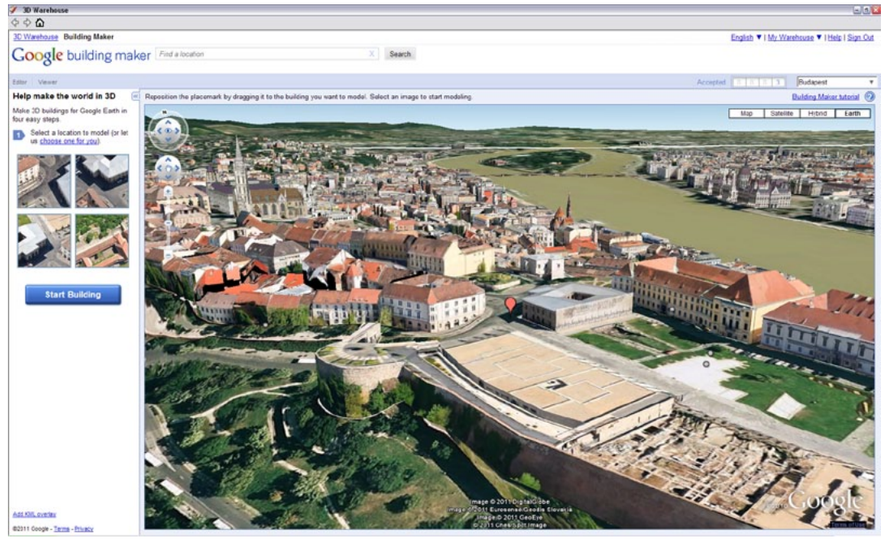
Building Maker launched in November of 2009. While it was being developed, I was working on SketchUp so initially I wasn't very active in its development. I became Product Manager for Building Maker around March of 2010 and have helped with many of the new features we've released over the past year such as: User added images, Street view imagery support, the connection to SketchUp 8, map markers in the location picker, duplicate building, model counters, and our new search field.

It's obvious that there are places where imagery is available and there are places where it isn't. Had this kind of data already been existed when you started to think about Building Maker or did it need to be created only when the idea came?

We had some imagery as we started to develop Building Maker. We are acquiring more imagery as it becomes available.

"Our overarching goal for Google's geo products is to construct a virtual mirror of the world and allow everyone to contribute information."





How popular has BM become and can you also provide some figures like how many BM models are in the Warehouse (vs. how many manually added SketchUp models)?
While I can't provide exact metrics around how many models have been built using Building Marker, I can say it has been pretty successful and popular in its first year. People can see the number of buildings for each city as they are working. As new models are saved you can actually watch the number go up. In general, Building Maker is a great tool for introducing people to 3D modeling. Just about anyone who can use a mouse can start creating a 3D model in just a few minutes.

Do you have different acceptance criteria for BM models than for SU models? With the integration of the 3DWareHouse and SU, do you review them more strictly now?
Building Maker has always been integrated with the 3D Warehouse. It's our first step toward cloud storage of 3D models. When SketchUp 8 launched in the fall of 2010, the 3D warehouse allowed Building Maker models to be downloaded as SketchUp files. This allows buildings to be started in Building Maker and the geometry+imagery to be brought into SketchUp for further improvements.

There is not a different acceptance criteria or standards for Building Maker models per se. Building Maker models are photo textured automatically so they have an inherent advantage over SketchUp models where people have to manually create their own photo textures. We do realize that the texture quality is often lower than what most SketchUp users create. As a result we are working hard on improving the texturing capabilities of Building Maker. We are also working on obtaining more and better imagery for Building Maker which will help improve the quality of Building Maker models.

There are several SU modelers who would take their time and tweak BM models even if they were made by others. However those models that have never been in the WH, are inaccessible for download and tweak. Are there any plans (or rather: would it be possible) to make this data accessible?
The warehouse is for sharing 3D models and we do encourage people to improve upon each other's work and collaborate. We would like to allow people to edit other peoples models but have yet to implement this capability. Allowing people to make edits and improvements as the world changes is the key to keeping our representation of the world up-to-date and accurate.

How do you personally evaluate the success of BM (both technically and as for the 3D browsing experience)?
There are several facets to the success of Building Maker. Obviously, the number of people using the product and the number of models created are two things that are tracked closely. The broad coverage that Building Maker allows our internal modeling teams to produce is another aspect of its success. Its very important from our perspective to have good model coverage in as many regions as possible. This will allow us to do very cool things in the future. One final aspect of success that I personally value is that Building Maker opens up 3D modeling to a whole new audience. While it was being developed I expected most modelers to use a mix of both Building Maker and SketchUp. This isn't the case though. Lots of modelers only use Building Maker. Its good to know that it can stand on all on its own as a 3D modeling tool.

- Csaba Pozsarko

TEAM SketchUcation

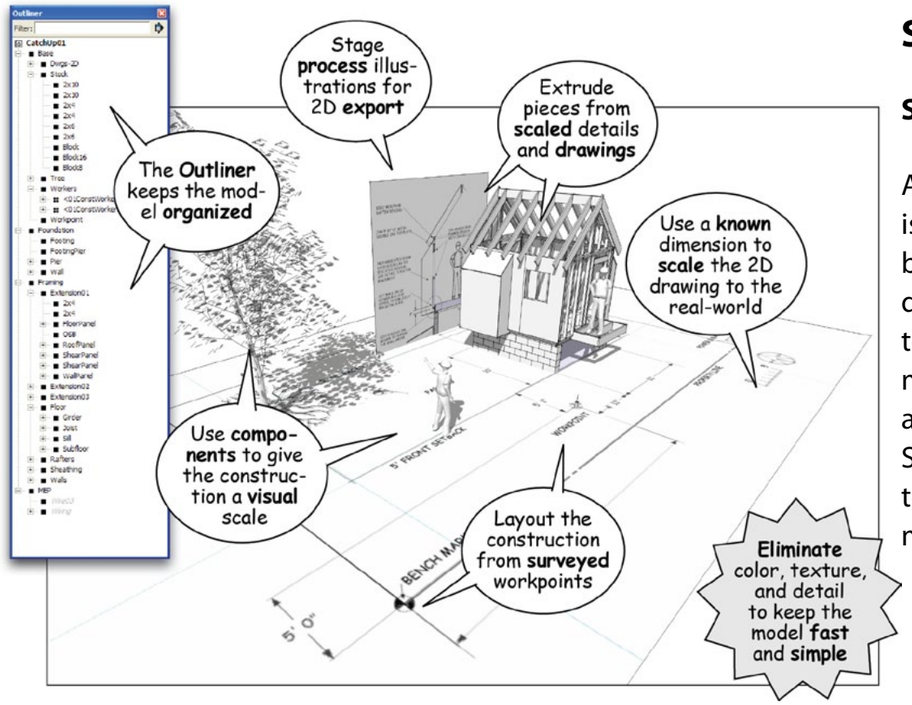
Need some SketchUp help with a project and would like to hire an expert? Here at SketchUcation we have a diverse membership that are expert in the use of SketchUp in many fields:

- ***Architecture***
- ***Engineering (Mech & Elec, Civil, Structural etc)***
- ***Archaeology***
- ***Landscape Architecture and Design***
- ***Interior Design***
- ***Woodworking***
- ***Furniture Design***
- ***3D Vis / Presentation***
- ***Movie Production***

We are also fortunate to have a group of highly skilled programmers in our midst!

Contact Mike Lucey, **mikel@sketchucation.com** describing what your needs are and he will endeavour to put you in touch with an expert in the required field of expertise.

Construction **Modeling #1**

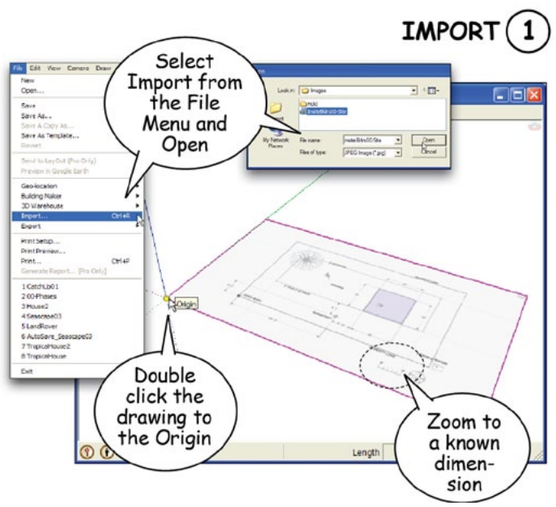


STEP 1:

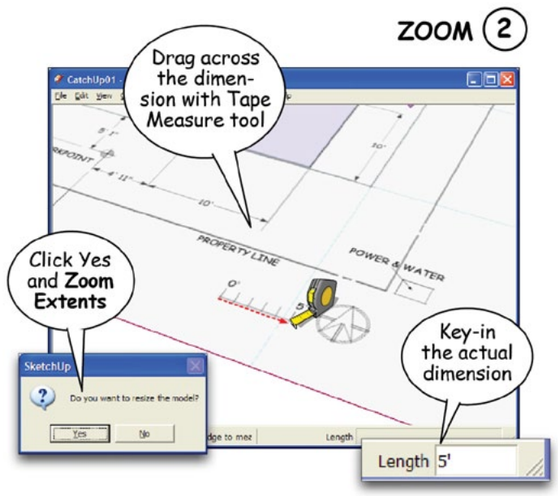
SCALE THE JOBSITE

A construction model is a process model, built to be assembled, disassembled, and staged to communicate the means and methods of a construction. As such, SketchUp is not a design tool, it's a construction management tool.

1. Import a site plan. Begin building the project house by double clicking the 2D site plan to the Origin of a new SketchUp file.



2. Zoom into a known dimension. Drag the Tape Measure tool along the dimension, key-in the actual dimension, click Yes, and Zoom Extents.



The construction modeling series continues next issue with the layout and excavation of the small wood frame house shown on the 2D site plan. You can also check out this YouTube video for more on importing 2D drawings.

- Dennis Fukai

catchup

If there's one thing we love at SketchUcation it's feedback!

We're committed to delivering CatchUp to our community as often as possible.

So if you have any suggestions or wish to contribute feel free to contact...

richob@sketchucation.com

catchup

SKETCHUCATION COMMUNITY NEWS

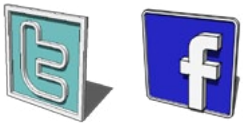
NEXT ISSUE.....

TGI3D PhotoScan

Rendering Tutorial

Lumion

and much much more!



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