SKETCHUP-UR-SPACE

Issue - September, 2014
www.sketchup-ur-space.com

TIPS & TUTORIALS

Making of Exterior Scene with Vray SketchUp HDRI - Arch. Dario Ilardi

COVER STORY

SketchUp Cloud Rendering

ARTICLES

Computer Assisted Design (CAD) programme for the 3D Printing

SKETCHUP-UR-SPACE
the first ever SketchUp magazine

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A letter direct from the editor desk highlighting on August edition

Hello friends!

Another fabulous edition of sketchup ur space is awaiting to be published very soon. In this issue a bunch of cool contents and tutorials along with tips and tricks from industry expert will be featured. You can start with the cover story presented by the team of sketchup ur space that focuses on the cloud rendering with sketchup. Sketchup is a great tool to provide solutions for cloud based rendering for animation, architectural & engineering industries. Be familiar with rendicity a tool that facilitates the designers to produce photorealistic image from sketchup models.

In article section there will be four informative articles on sketchup. All these articles are written by the editorial team of sketchup ur space. The first article evaluates the application and various aspects of sketchup's photorealistic rendering capability with Renditioner. Renditioner is a program specifically designed to perform within SketchUp, through a one – button easy to use format.

The second article explains what the obstacles are in 3d printing industry and how to get rid of these obstacles. The 3d printing industry is growing at a rapid space but still it is in its infancy stage and there exist some issues which are causing disruptions for the future development of the 3d printing technology.

The third article briefly describes the functionalities of engineeringtoolbox plug-in inside of SketchUp. This sketchup plugin is very useful to insert standard and customized parametric components to any sketchup model.

The last and final article highlights the impact of Virtual Reality technology and how it is integrated with various game engines to create the stunning game devoid of expert knowledge in coding.

In tutorial section, the readers will enjoy three exclusive tutorials. The first tutorial is presented by Dario Ilardi, the renowned architect that shows how to apply sketchup & v-ray for modeling and rendering of a exterior scene.

The second tutorial is about how to flip or mirror of any geometry with sketchup. The flipping or mirror is co-related with each other. One can also apply scale tool inside sketchup for flipping or mirroring geometry.

The third and final tutorial is about the advanced features of V-ray 3.0 which can speed up your rendering rendering process as well as the quality. Get some useful tips from the most recognized digital artist Vinnie LaCour.

In interview section the team of sketchup ur space has interviewed Warunyoo Songkran, an environmental engineer and director of a small engineering consultant company in Thailand. Mr. Songkran has shared his profession experience with sketchup and how he utilized sketchup in his engineering workflows.

Besides, in blog and news section, our readers will get some useful information on sketchup and 3d printing technology.

Hope our readers will enjoy this issue as usual.

If you have any queries concerning publication, subscription, troubles navigating the site, please mail us at rajib@sketchup-ur-space.com

Best wishes
Rajib Dey
Editor

Interview with Warunyoo Songkran - an environmental engineer and Manager of Virtual Design and Construction at Premier Energy

Please tell us something about yourself.

My name is Warunyoo Songkran. I am a managing director of a small engineering consultant company in Thailand (before that I worked for a company named Premier Energy (PME)). My expertise is the construction of large biogas harvesting systems. I have been using SketchUp for more than 3 years. Now SketchUp is the only one tool I use for my engineering work.

When did you first discover sketchup in your professional career?

I found SketchUp by accident 3 years ago. One of my friends came to see me and showed me one of his SketchUp model. I asked him many questions about this amazing program. One question I asked him is " Can we use SketchUp for doing design detail or some kind of construction drawings. The answer was " No". However I did not believe him and in that night I did my First SketchUp model. It was totally bad.

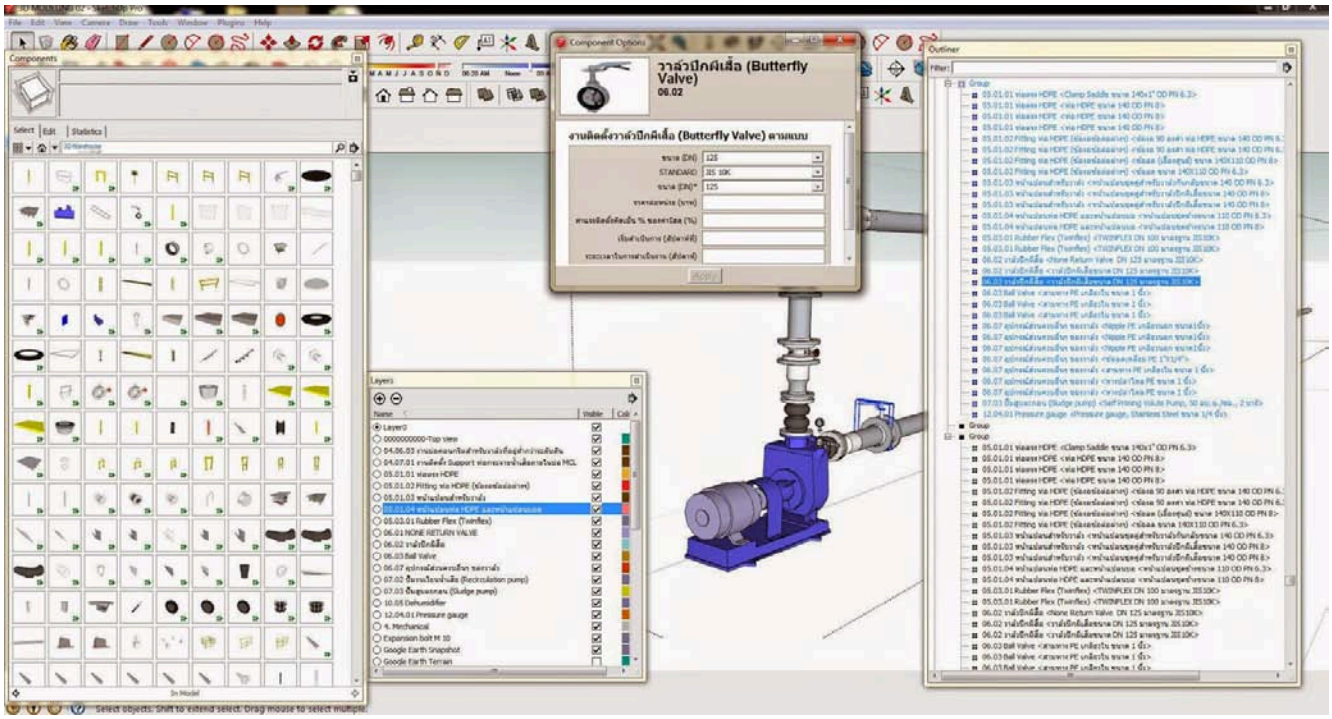
After practicing for weeks, I decided to show one of my work to my team. My long journey with SketchUp was started since then.

You had designed and constructed more than 12 waste-to-energy projects around Thailand. What was the most challenging project and how did you apply sketchup in this project?

Yes, But with all of my engineering teams.

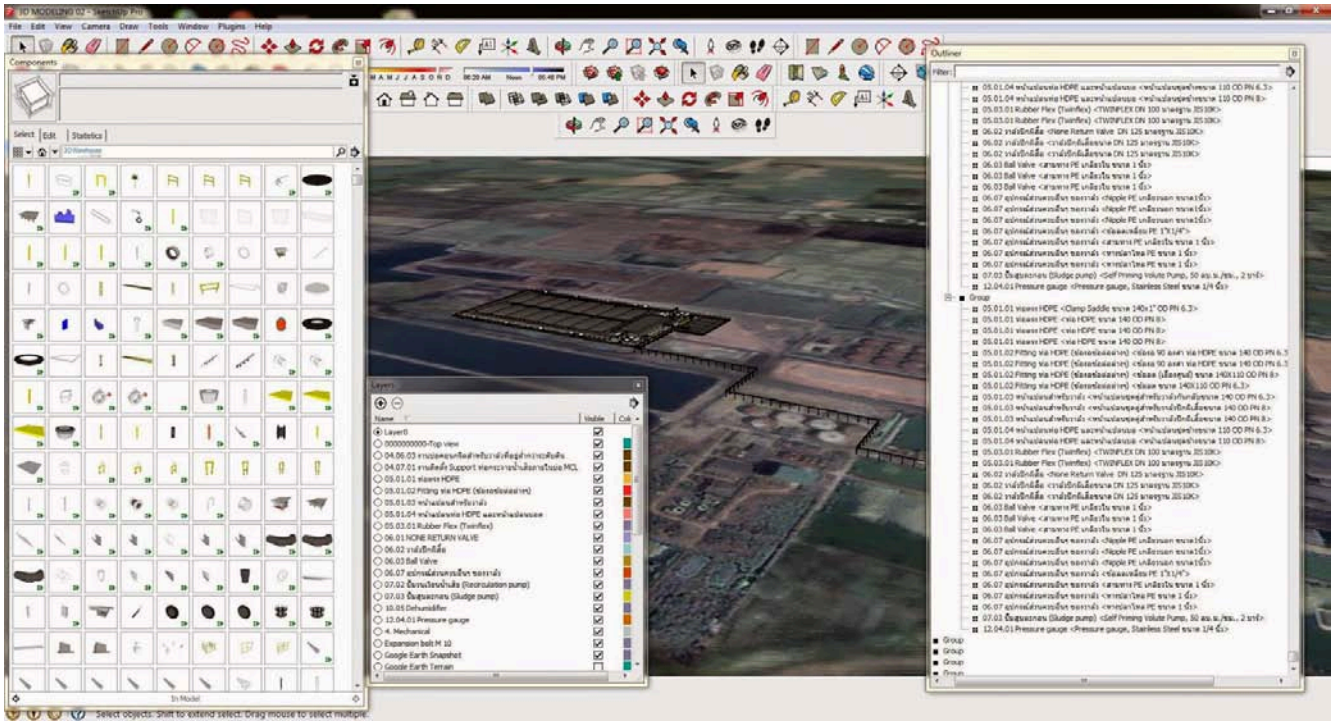
I wanted to apply SketchUp at every stage of my company work. I have tried several time to use SketchUp in all Stage of my construction projects but they were failed. However the most challenging project was the last project before I resigned from PME as Engineering Department Manager.

In this project I used my dynamic component databases to assembly the construction project prototype within SketchUp. This SketchUp model will serve as the studying model for everyone in my team to share their ideas to help preventing conflicts and problems when construction phase was started. Bill of materials was also created directly from SketchUp model. Because the construction plans and drawings were changed several time, SketchUp dynamic component database can help my team to handle this problem without too much stress and efforts (comparing to AutoCAD).



Sketchup is a useful tool for 3d construction modeling. Please explain.

3d construction modeling in my opinion is the process where all parties or individuals who are involved in the construction project use simple 3d modeling program to make what I call " construction project prototype". This prototype does not explain only physical characteristics of the building (or every kind of construction projects) but al so the methods and processes of the construction. BIM is tool hard for Thai engineers and contractors that is why I have chosen SketchUp which is more easy and fun (effective).



How sketchup and BIM are co-related?

BIM requires the combination of information with 3d model. Sketchup is similar to BIM in this way. Dynamic Component is information and 3d model. Moreover The latest version of sketchup can export IFC file to work with other BIM software.

The latest version of sketchup is sketchup 2014. How this latest version facilitates your workflow?

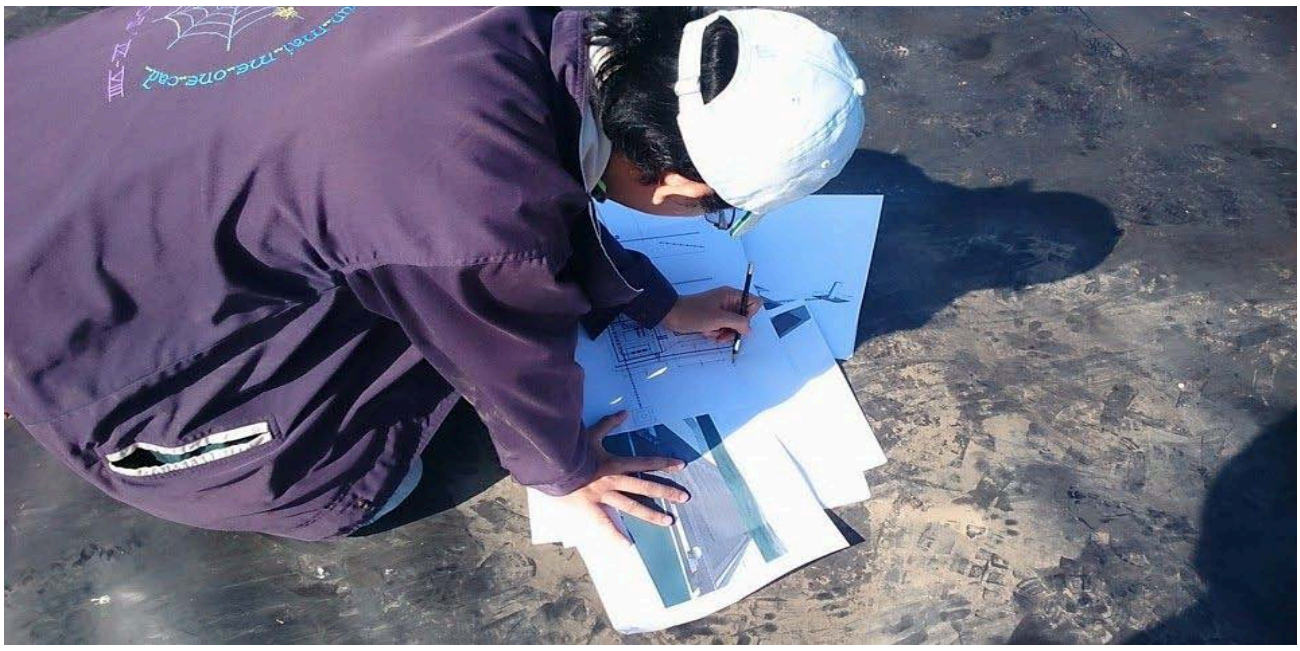
Actually, Sketchup pro 8 is enough for my work. Sketchup 2014 is more faster I think it helps my workflow in this way.

What improvements should be included in sketchup in near future?

I would like to see SketchUp to be some kind of 3d software that:

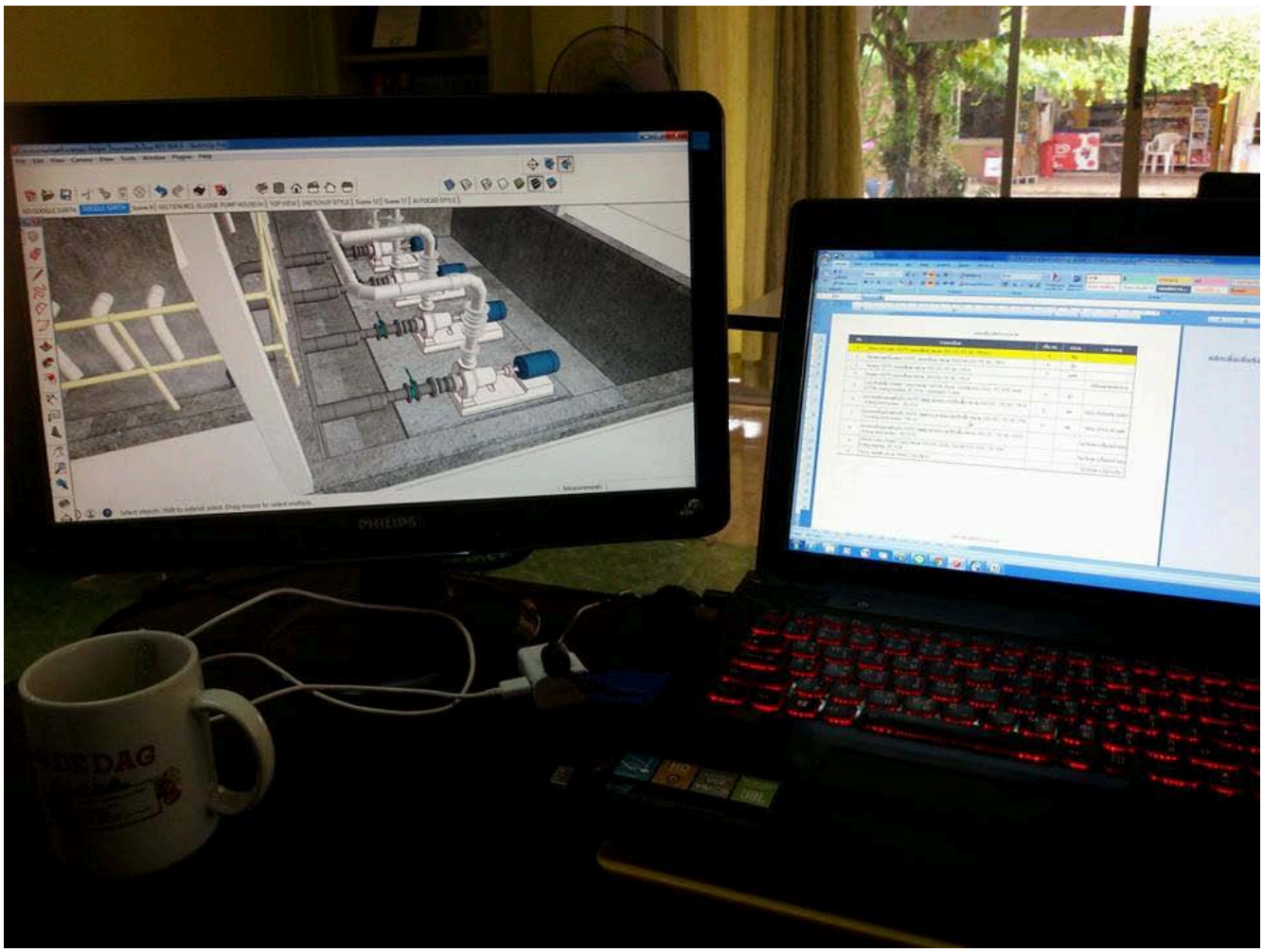
- Easy to use
- ery fun to use
- Very effective to use

It should not be like BIM software which is very hard to learn and use.



Besides sketchup, what other types of drawing programs you generally use in your project?

2d CAD

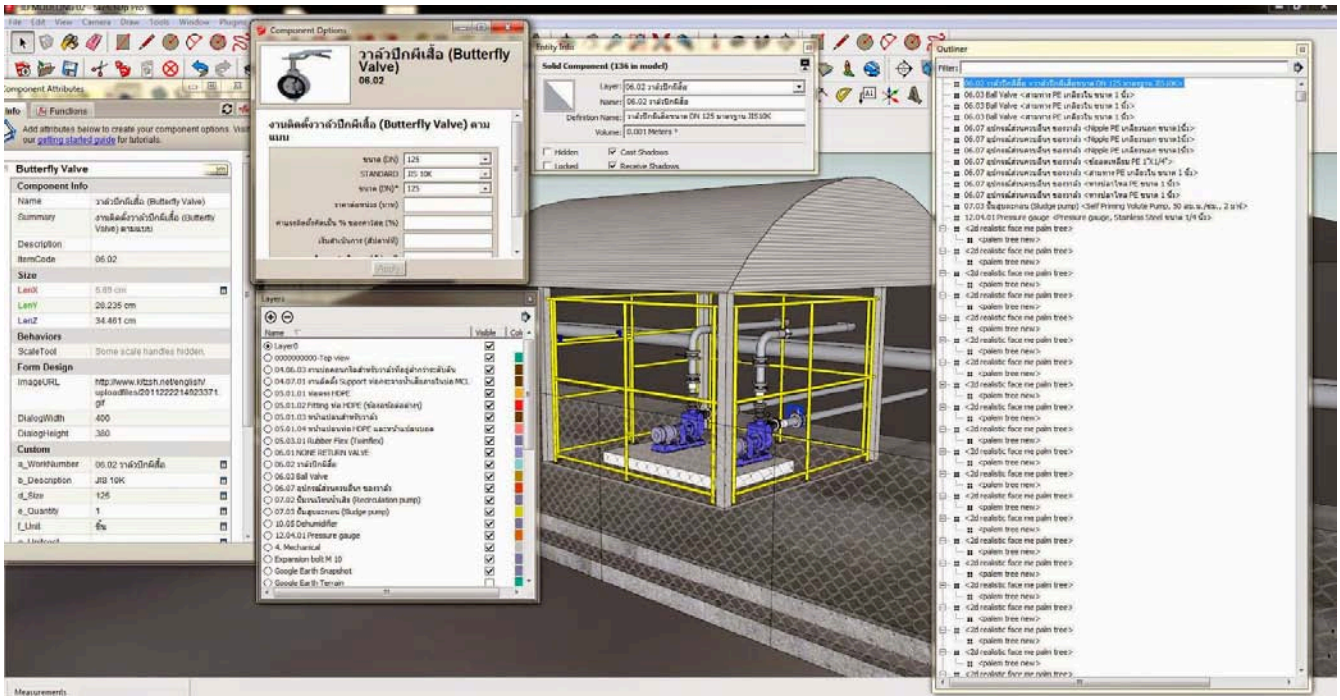


Is there anything else you would like to focus on sketchup?

Dynamic Component Database is very important for me so I am focusing on creating dynamic components for using in my projects.

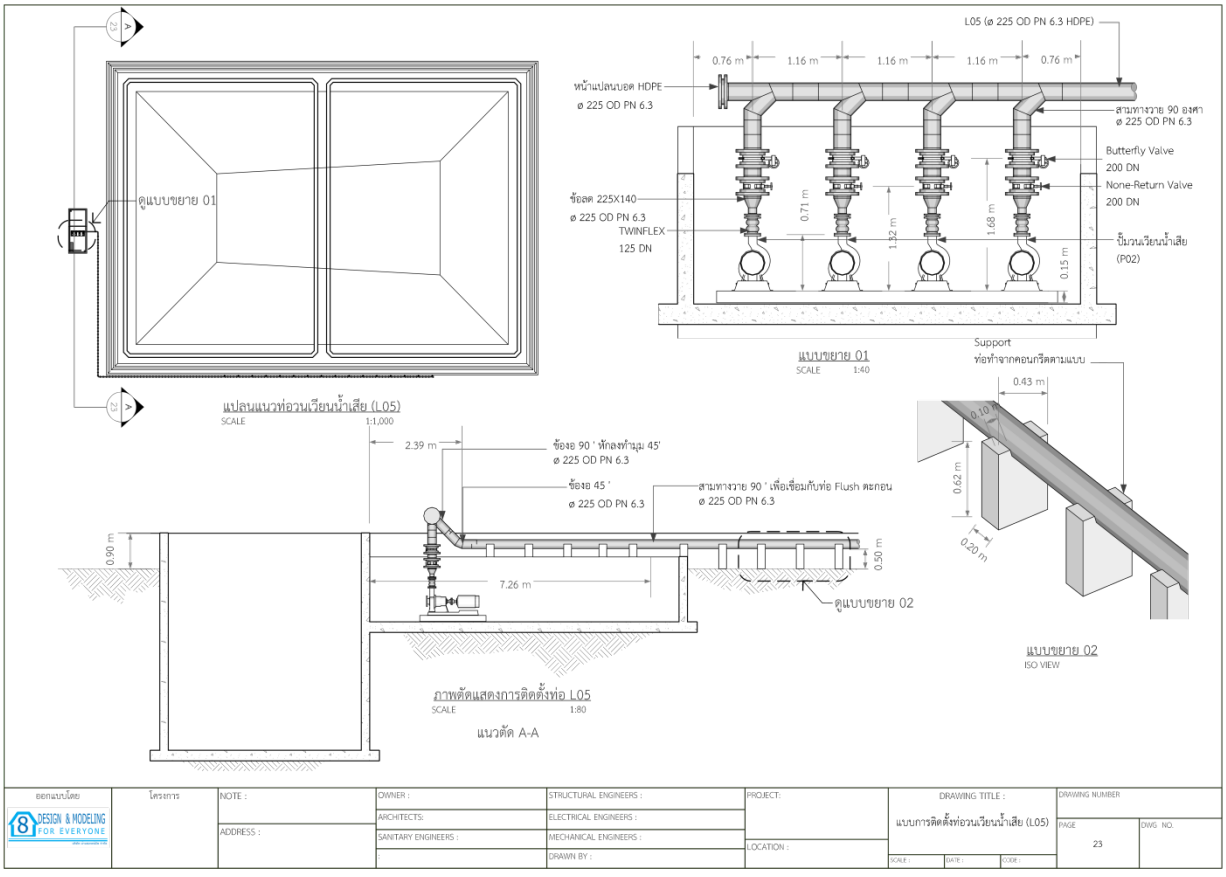
What's your suggestion for newbie sketchup users?

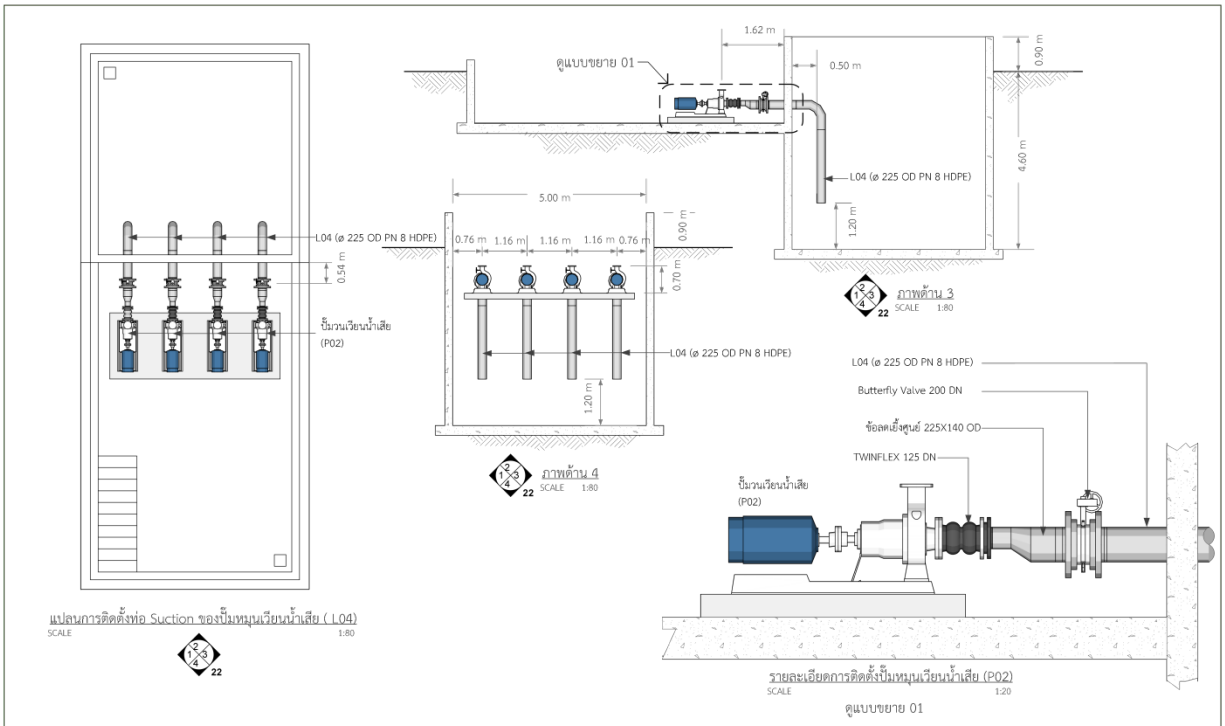
The real potential of sketchup for construction project is the dynamic component. Do not stop using sketchup until you can expert in using this dynamic component.



How do you evaluate Sketchup Ur Space Magazine?

Ur Space Magazine is the most English Magazine I read. I think is it cool that someone make very useful for everyone of free. Keep up good work.

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SketchUp Cloud Rendering

Debamoy Ghosh

Rendering the SketchUp model is a big thing. A photorealistic and photogenic rendering of the SketchUp models makes a difference in the eyes of customers. It looks great, superb.

Many problems may occur such as getting the work done on time without eating up the development window or spending a small fortune on hardware that you will only use occasionally.

However, sometime rendicity releases immense processing power rupture open for the companies that get to know the spikes in order to obtain High Performance Computing (HPC) capability.

Getting HPC is not very easy. Most of the companies do not have the in-house processing aptitude. They are depending on demand drive faster turnaround, no production processing queues and increasing top line revenues.

It is to mention that the rancidity team has a major experience in innovative computing research and major experience in animation industry.

The SketchUp users virtually tied together for unlimited rendering when additional capacity expenditure baring needless technicalities.

What is rendicity? What does it do?

It is very simple. The first step is to create content. The seasoned 3D artists along with architects and engineers makes the models with the computer supported design tools. These tools create description of scenes, which identifies the characters, and objects are visible, camera position, lighting, and other visual elements. One of these tools, SketchUp, is a 3D modeling programme used by architects, interior designers, civil and mechanical engineers, filmmakers and videogame designers. A freeware version, SketchUpMake, and a paid version with additional functionality, SketchUpPro, are available.

The rendicity is actually the tool that helps the designers to create photorealistic image from the models of SketchUp.

The photo realistic rendering perfectly present the material properties, such as reflection and light properties such as colour or soft shadows. This can make the difference to the realism of image or frame though the properties and behavior are tremendously tough and intricate.

We can describe it. The light can reflect in mirror, but spread from painted exterior. The perfect rendering takes a great deal of computer power.

Depending on the complexity of the scene, it can literally take days to render each frame on an in-house render farm.

If you are trying to render on your local machine, this processing load can make other work difficult or impossible.

Rendicity has developed software that helps to exponentially speed up this process and lets you keep on working.

What is cloud rendering?

Cloud rendering is outsourcing the rendering process to an internet service that accepts 3D scene descriptions and returns finished images. There are a number of ways that such a service can be provided. One way is an opaque high-level service that simply accepts the scene account and returns the frame with no control over the underlying rendering process. This approach has the advantage of effortlessness but at the cost of control.

The SketchUp artist does not have control over how long the rendering will take and many resources will be assigned to it. In addition, services such as these typically share a pool of rendering machines will the studios using it. Sharing resources with others can create you nervous in case your digital possessions, such as 3D models, pour out to other studios of the world at large.

Another approach is to create private pools of machines (orrender“farms”) for studios, addressing concerns about security and providing the studios with control over the resource usage. An important factor to consider is whether render farms should be regarded as semi permanent infrastructure, that persist for months at a time, or disposable items that can be created and destroyed within a short time frame (an hour or less). A related issue is the billing model: should the studio pay for the service using pre-pay, pay-as-you-go model or receive a monthly bill after the fact?

Rendicity offers private render farms. They are created automatically, on demand, and can be disposed of at will. The Rendicity uses a pre-pay model, as it is the best fit for the transient and disposable nature of Rendicity render farms.

You begin using the Rendicity service by installing the software and buying rendering credit (using a credit card). You then create render farms as needed to render scenes and dispose of the farms (and the associated cost) when finished. When your rendering credit is exhausted you simply top up again.

SketchUp has a built–in OpenGL renderer that let you see your model in 3D with shadows and illumination from the sun. OpenGL is a multi-platform application-programming interface, or API, for rendering 2D and 3D vector graphics.

While SketchUp let you place colours and textures on objects, photorealistic rendering add-ons let you make the most of these textures and reflective features and helps, they 'pop' off the page, which adds realism and impact. Nothing improves a rendered image more than attention to detail, and, for example, adding the correct type and intensity of reflection, to not only the main features in an image but also the smaller elements; helps push the result towards photorealism.

Features: The key consideration when rendering in SketchUp is "How long will it take?" Many users need their work rendered quickly, and that requirement brings up the crucial relationship between time and the number of machines required for a particular rendering job.

Rendicity can provide machines with upto 32 core processors and 244 gigs of RAM to tackle the toughest of tasks and for those with less demanding require Machines with three GPUs are very affordable.

It's worth reiterating the benefits of Rendicity's approach to cloud based rendering for SketchUp users. The first is privacy, you don't have to give a third party your assets.You have control and you don't have the risks associated with handing off your work.The second is scalability; Rendicity can provide access to literally thousands of machines instantly.

You make the decision between speed and cost. It is essentially the best of both public and private rendering solutions: You have the control and security of an in house rendering solution with all the benefits of instant, and essentially unlimited, scalability. Finally, there is the unparalleled ease of use. Only the manager needs training on accessing the cloud and making financial decisions, leaving the artist or design free to do what they do best.

SketchUp photorealistic rendering, its uses and features

Debamoy Ghosh

There are many plug-ins for Google SketchUp that provides high-quality photorealistic rendering – fast and easily. Renditioner works directly within SketchUp and lets you control the materials, advanced lighting components, environments, background images.

Renditioner is "one button" easy with 3 render options of Preview, Standard and Presentation. It is simple enough for novices and yet powerful enough for professionals. Powerful features are optimised in a jargon free interface. Simplicity paired with speed and working directly in SketchUp, means you can achieve design visualisation objectives more quickly. Renditioner offers 16 megapixel renderings for large-scale printing and powerful presentation of your designs.

Uses: Renditioner is a program designed specifically to work inside SketchUp, with a one – button easy to use format. With next to no setup time required, you can get straight on with producing and enhancing your renderings. Simplicity paired with speed and working directly within SketchUp, means you can achieve design visualisation objectives more quickly.

Create Moving Photorealistic Renderings! Small changes to material finishes, reflectance levels, or bumpiness can bring your textures to life. But emotional images often come from light and colour. IDX Renditioner provides pre-built lighting components that are easy to control. Change cone width, intensity, or colours, and highlight items in your scene or enhance a particular mood.

Features: Render modes - There are three preset render buttons for Preview, Standard, and Presentation renders. If you want you can change the values for those presets. You can also optimize render settings by setting the scene size (Room, Building, etc) and for advanced renders switch between lighting environments (Exterior, Interior, and Studio).

Control Environments - Click a render button and you'll see a background sky and ground plane that go with the lighting conditions (night, hazy, twilight, etc).

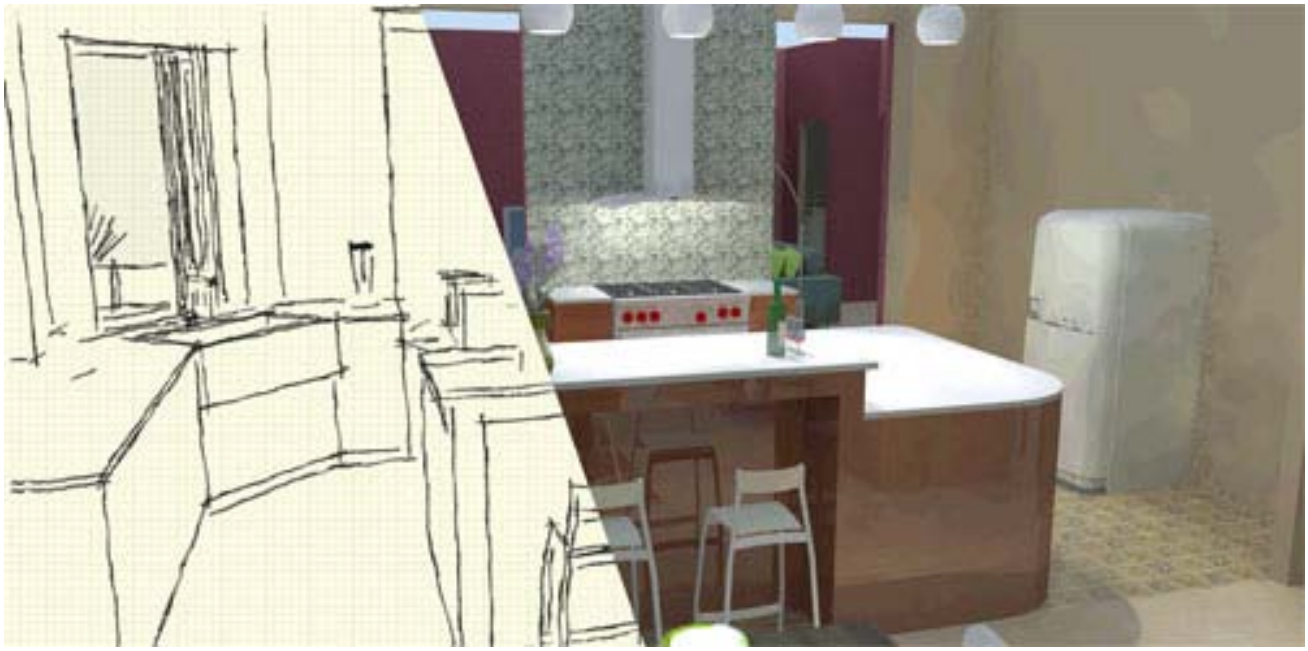
Lighting Features - Natural lighting is controlled by selecting a weather condition: clear sky, cloudy, hazy, twilight, or full moon are just a few. The SketchUp sun position can be over-ridden to position the moon or sun in a certain way. Artificial lights are provided, but it is simple to make your own from any component. One component acts like the light fixture, while a subcomponent acts like the bulb.

Camaras and Lighting

A. HDR-based Lighting: HDR, or High Dynamic Range based lighting, allows for better control of the lighting of an image or scene., by preserving image details that may be lost due to limiting contrasts ratios.

B. Predefined, Weather-based Lighting Schemes: New Renditioner Pro takes lighting further with extensive lighting controls. Choose from menus of predefined, weather-based lighting schemes including Preview Lighting, Fast Lighting, Interior Lighting and Exterior Lighting.

Lighting Controls: Twist control is available as an HDR-based lighting adjustment to rotate 3D backgrounds and associated reflections. Drop scenery effects – sky, shadow, light shadow, and reflection – includes controls for shadow quality, contrast, brightness and blur.



Some disadvantages of 3D printings

Debamoy Ghosh

The 3D printing is fast becoming a transformative force in manufacturing, the medical field and several other industries. While the excitement we are currently witnessing is partly justified, it is important to remember that 3D printing is still in its infancy and it has still many hurdles to pass before we can talk about a revolutionary force. As promising as 3D printers seem, their usefulness is still questionable. High costs, safety concerns, patents, and design complexity are all contributing to legitimate skepticism. Here are some reasons to avoid the hype around 3D printing. Yes, 3D printing stands to completely transform the way we make, replace, and transport products and will disrupt nearly every major industry. However, the technology is still geared toward passionate, motivated makers and hobbyists—not the average citizen.

We have compiled a list of some reasons 3D printing has not quite caught on yet and what is holding the technology back.

You cannot buy a desktop 3D printer today and make anything you want.

Awaiting the breakthrough consumer model: Widespread consumer adoption will depend on 3D printers dropping in price. Currently, printers less than $1,000 use a DIY-style kit that requires assembly of the machine itself and they often don't replicate the CAD designs accurately. But, relatively cheap 3D printers do exist. At $299, the Printrbot Simple is an affordable option, though it is very basic and can't print high-quality products. Also well under $1,000 is RepRap's open-source line of printers, which have to be assembled separately. The Cubify Cube is about $1,300 and probably the best desktop option since it connects to wifi, but its plastic filament can't make anything too sturdy. For the most part, anything bigger or better than, these costs well into the thousands (or even tens of thousands) of dollars. The MakerBot Replicator 2 runs at about $2,200, which was also the roundabout figure for a top-of-the-line computer in the 1980s. Until reliable, convenient, sleek 3D printers hit the market, the revolutionary effects of the technology will be stymied.

The 3D model is still far too difficult for most people. It will take you 2000 hours in CAD to learn make very complex shapes. Most people feel inhibited when offered a blank canvas on which they can create anything. Many 3D printed things in the news have the shape of something, but are not functional parts. If I take a piping bag, put in pate and squeezed out the shape of the liver I could probably call CNN for 3D printing a liver. But, this liver will not be functional.

Expense of SLS printers: Major patents on selective laser sintering (SLS) printers expired in January, so perhaps the prices of these machines—which run as high as $250,000 will decrease. When the patents on fused deposition modeling (FDM) printers expired, there was an explosion of open source FDM printers that led the technology to become a hobby. The best example was MakerBot, which launched as the most well-known FDM printer almost immediately after the FDM patent expired. SLS printers offer the ability to print with more materials such as glass, metal, plastic, and ceramic, but with the high-powered lasers comes a higher manufacturing price. It may never be as cheap as an FDM machine, and therefore may take a longer time to catch on in the consumer market, if at all.

Patents and legal murkiness: This year, many patents on 3D printers will expire, possibly creating more competition, innovation, and lower prices. However, there are still quite a few overlapping patents out there, however, which causes a lot of murkiness. During the last decade, the Patent and Trademark Office has received more than 6,800 3D printing patent applications. Since 2007, almost 700 patents have been filed annually. Another intellectual property issue comes with what the machines are printing. Right now, it's easy to log on to Shapeways and download a CAD file of just about anything. But soon, there will be lawsuits and competition between brands over knockoffs and copyright infringement.

The usefulness gap: Sure, plastic action figures, iPhone cases, and Star Wars-themed novelties are fun to design and print with a relatively affordable desktop 3D printer like the Cube, but they aren't exactly impactful on our everyday lives, nor are they convincing consumers the machines are a worthy investment. “There's no compelling application in the present time because anything you can print on a 3D printer, besides from things that are truly customized, you can buy at a store,” said Pete Basiliere, lead Gartner analyst for 3D printing. He said a compelling consumer application—something that can only be created at home on a 3D printer—will hit the scene by 2016.

That 3D-printed gun: Before the majority of Americans could wrap their heads around how 3D printing works, a man named Cody Wilson designed, printed, and successfully fired a 3D printed gun. The STL file was available for free on his website the next day, and 100,000 people downloaded it before the U.S. Department of State ordered him to take it down. Since an all-plastic 3D gun probably won't catch on, other companies are working on using SLS technology to print a metal one. So, in December 2013, Congress voted to renew an expiring ban on plastic firearms that could slip past metal detectors, though it didn't add any new restrictions on plastic guns. Philadelphia was the first city to ban 3D printed firearms. A Chicago lawmaker wants to make it illegal to use a 3D printer to make gun parts unless the user has a federal gun manufacturer's license. Wilson's plastic 3D printed gun showcased these loopholes in the law and caused an uproar across the country about the potential dangers of 3D printing technology. Whether you agree with it or not, the ability to easily print and distribute weaponry will surely cause skepticism about this technology for some time.

In today's crowded media, landscape simple messaging is the norm. This turns the media from a critical watchdog into a braying hound repeating simple messages repeatedly. Desktop 3D printers are in many cases unreliable when compared to other consumer electronics devices you own. Surface quality, strength, heat deflection & color of 3D printed parts are not adequate for most applications. Post processing means that there still is far too much labor involved. Industrial 3D printers are too slow, expensive, small & not productive enough. Many industrial optimizations such as conveyor belts and automatic processing of files or depowdering of parts have not been applied to 3D printers. Material costs are ridiculously high, inhibiting 3D printing development. Much of the analysis coming out by stock and other people about 3D printing is not based on any real understanding of the technology and is frankly hilarious. The 3D printing is a collection of many different technologies all better or worse at making various things. We are not collectively developing a Star Trek Replicator now. Company A is making a machine to make tea at home, Company B tea in the workplace, Company C is doing coffee etc. Why will everyone have a desktop 3D printer? We don't all use our own sewing machines to make our own clothes. There is no common parts infrastructure for 3D printer parts. No wide spread motherboard, CPU or case ecosystem. We don't have a postscript for 3D printing so "your 3D printed files are like a box of chocolates."

The 3D printers aren't that user-friendly: Setting up a 3D printer will need to be as easy as hooking up a traditional HP printer. The 3D printer needs to have fewer wires than a television and fewer buttons than a computer for it to become a household electronics, and right now, that's not the case. The printers use high-voltage power supplies and specialized equipment and parts. Some of the cheapest printers can't even connect to wifi and most have low resolution. Because of the hype around the potential and the cute plastic toys that they produce, 3D printers have come across as easier and more useful than they actually are. The best products that have been created—think tools, musical instruments, car parts—are made using huge, high-end printers that cost hundreds of thousands of dollars. Those sub-$1,000 machines that sit on a desk just aren't going to be as productive.

Complex design software: Downloadable files from Thingiverse and Shapeways are easy to get, but they are not moderated and therefore may not work on every type of printer. If you want to design your own file, you need a working knowledge of CAD design. Setting up the model and using the printer takes quite a bit of patience and time, which is another reason the technology has primarily been used by enthusiasts up to this point.

The 3D printers are still slow: 3D printers are great for mass customization, but are still too slow for manufacturing lots of objects. To change the manufacturing industry, the parts need to be printed in minutes, not hours. It currently takes anywhere from several hours to several days to print, depending on the size of the model and the quality of the printer. Receiving an order from Shapeways, the company that customizes and 3D prints a variety of products, can take up to two weeks, depending on the materials used.

Safety concerns: The FDM printers, which use a plastic filament, are relatively safe to use—they are often made for desktops and contain both the mold and the residue—but they aren't foolproof, and they reach very high temperatures. Powder-based printers are messy and potentially explosive depending on what is being made from them. They operate at

extremely high temperatures and produce waste. It's not something a consumer would want in their home office. Indoor air quality and the emissions from 3D printers, particularly SLS printers, are also cause for concern.

Mainstream 3D printing materials such as SLS and SLA degrade due to UV degradation, making parts ugly and brittle after a year in the sun.

The only 3D printing process that is food safe is ceramics. Many industrial 3D printing materials are proprietary and one has no idea what is in them. 3D printing is developing much slower than you think. Because you've been exposed to a lot of technologies in a short time frame it seems as it is going faster than it is. Many of the "3D printing organs" stories have not been based on publicly available research, but rather are funding requests via the media. Repeatability of 3D printing parts is very low when compared to traditional mass manufacturing technologies. Many nice and shiny 3D printed parts you've seen on TV require hours of post-processing to get them to look that way. At the very least, 3 3D printing Kickstarter projects have been pure fantasy. There are still no functional 3D printed shoes available, despite of what you may have heard. The "3D printing revolution" is a savvy rebranding of a decades old technology through social media and extensive spending on PR.

How to use Sketchup Engineering Toolbox

Debamoy Ghosh

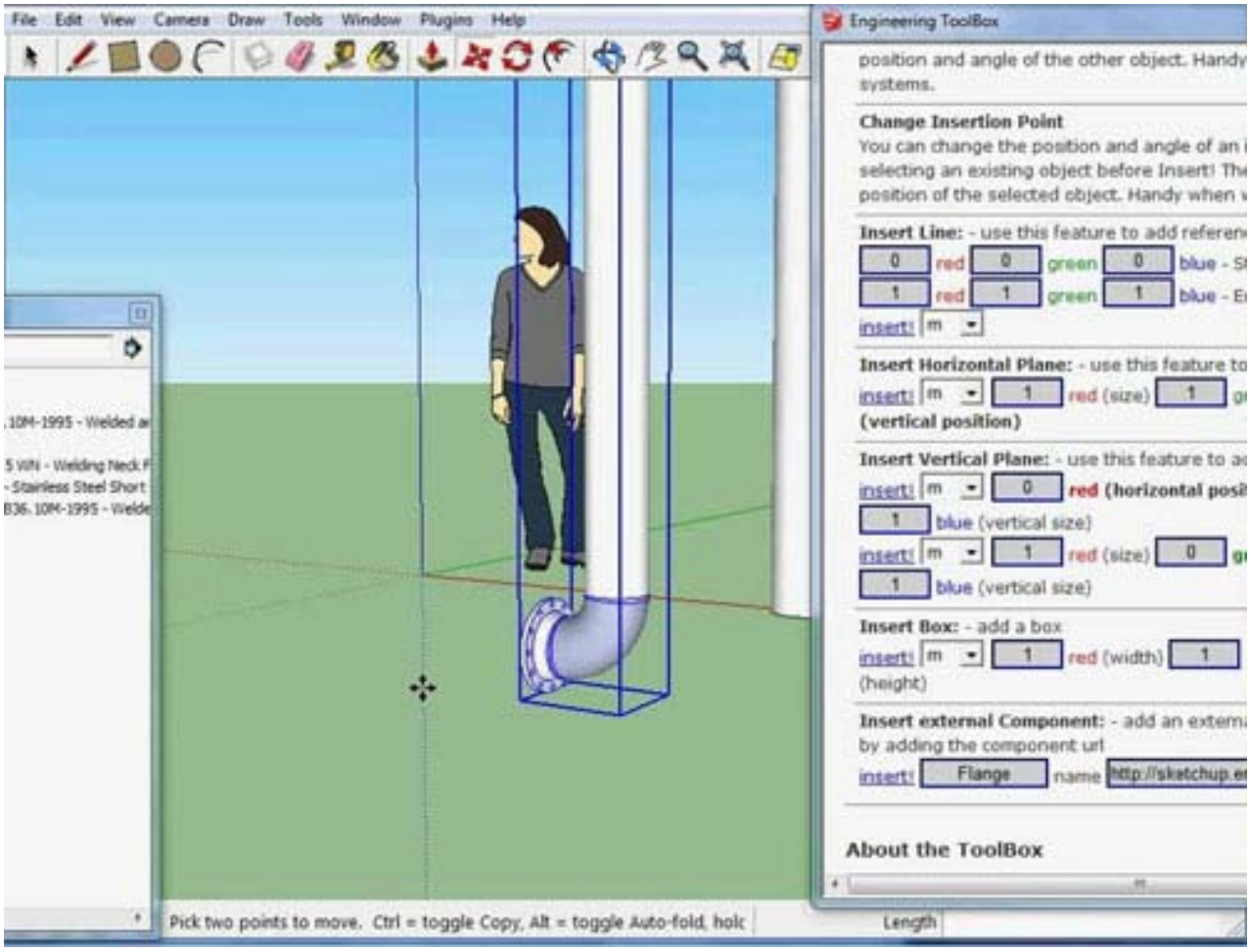
SketchUp Engineering Toolbox - adjoins standard and customized parametric components - like flange beams, lumbers, piping and more - to your SketchUp model. It useswww.sketchup.engineeringtoolbox.com. It is absolutely free and fun to use.

But it can be used with NO WARRANTY or LIABILITY. Those mmportant information should always be double checked with alternative sources. All applicable national and local regulations and practices concerning these aspects must strictly be followed.

New Components: Putting new component is possible just like more flanges, construction structures. The designer have name it, email us spreadsheets with component data. He has to use formats (rows and columns) more or less similar to existing components (if they exists) - and we will do our best to incorporate.

How the designer will add it?

Alt. 1 Sketchup Extension Warehouse



From Sketchup 2013 the plugin can be installed from the Sketchup Extension Warehouse.

Open your Sketchup installation, select the Extension Warehouse Button, search for "Engineering ToolBox" - and install!

Alt. 2 Download the Plugin File

Download engineeringtoolbox_tools_v1.0.1.rbz and install the extension from "Sketchup > Preferences > Extension > Install Extension", or download engineeringtoolbox.rb to your SketchUp plugins directory. ("Right Click" the link above and select something like "Save As")

Exit and reload SketchUp: Select the "Plugins" menu and the "Engineering ToolBox" submenu and a page like this one opens - and you are running!! The .rbz download is an extension and can be activated/deactivated in the "Sketchup > Preferences > Extension" window.

Note! that you can use the engineeringtoolbox.rb, in Sketchup 8 too. Save it to the plugins folder as desribed below.

For Windows user! Be aware that some browsers in windows saves the plugin file engineeringtoolbox.rb with a .txt extension. The extension must be changed to .rb.

Note! The SketchUp plugins directory is located somewhere similar to "C:\Program files\Google\Google SketchUp X\Plugins" on Windows computers, or something similar to "Macintosh HD/Library/Application Support/Google SketchUp X/SketchUp/plugins" or /Users/your_user_name/Library/Application Support/SketchUp 2013/SketchUp/Plugins on Mac computers. (Mac users look here!)

(X is the SketchUp version on your computer)

If you have problems with the saving permissions to the folder - try to download the file to your download folder - open two file manager windows - and drag the file from the download folder to the plugin folder. Change permissions if required.

SketchUp works with Linux under Wine. Since the engineeringtoolbox plug-in uses the SketchUp Webdialog feature implemented only for IE on Windows and Safari on Mac - IE on Wine is probably required. This is not tested and feedback is wanted.

How to use the Engineering ToolBox: After loading Sketchup and the Engineering ToolBox from the menu - navigate to the wanted component in the navigation menu above - and select "insert" to add the wanted component to your SketchUp model. **Note**! The SketchUp Engineering Toolbox is an online resource updated continuously. You need internet connection to operate.

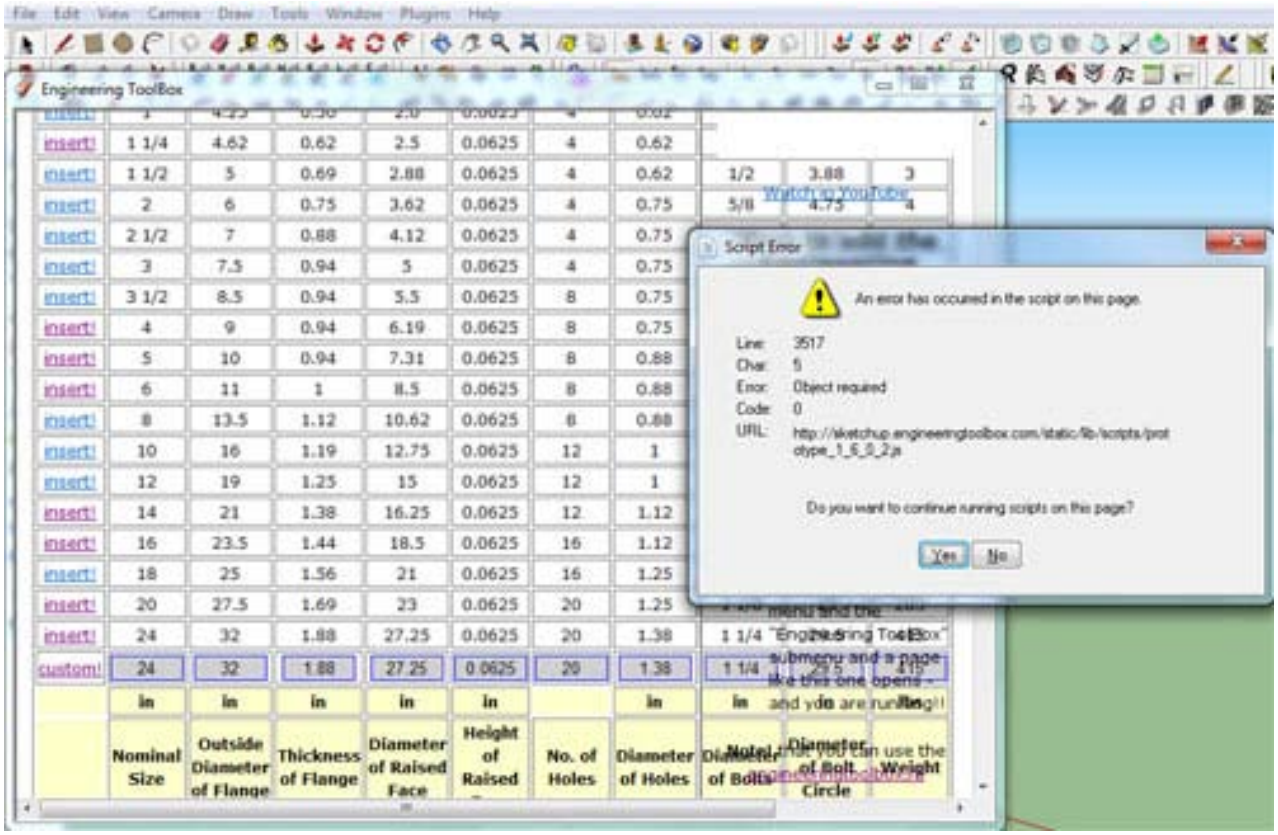
For some components parameters like length, color, offset and more can be modified before insertion. Customized components can be inserted by changing parameters in the dialog boxes at the end of the component lists - and clicking "custom!"

Selected objects in the model can be manipulated - rotated, moved, colors changed and more - from the Tools section. Assistant objects like lines, horizontal and vertical planes can be added.

If you are Mac User...

The SketchUp - Safari WebDialog issue with the OS X 10.9 (Maverics) is now solved -download the latest plugin/extension file.

The video will also help the reads.



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https://www.youtube.com/watch?v=FFkiwpMDOhk

AEC professionals now concentrating on video game domain

Debamoy Ghosh

The video games are actually the tool of entertainment and gaming, but sometime it has passed itself in to the field of improving efficiencies and information sharing in some of the most critical areas of the society.

For example, there has long been an overlap between gaming and military initiatives; the U.S. Army launched the America's Army game franchise in 2002 as a recruitment, training, and public relations tool. More recently, citizen scientists have made headlines by using Foldit, an online game interface, to model complicated protein structures that researchers had been attempting to understand for years.

The AEC experts have been trialing with game technologies since the early 1990s. The only virtual reality (VR) situation in survival were room-sized chambers housed in university, government, or corporate laboratories, and the hardware contains projectors and screens or — extremely cutting edge — stereoscopic eyewear known at the time as "eye-phones."

The virtual worlds depicted had the same blocky, pixelated graphics as video games of the day. However, the researchers were under way at the University of Washington's Human Interface Technology Lab, the others, that invited working the architects to recognize the overlap between the emerging fields of CAD and VR. At this time, VR technology has progressed to the point where moveable and small gadgets and boundaries are so affordable and accessible that they can be used in any office.

Changing the Game: In the mid-1990s, some video game developers starts to include easy to use level editors in their games. These tools users to make changes within the game environment. But the days have changed, the game has changed.

Today, contrary, almost all games are built upon game engines — whole packages of foundational code that provide the underlying framework of a game's mechanics and produce everything from its animation to its sound. Two of the renounced game engines that also have applicability in the architectural kingdom are Unity

3D and Unreal Engine. These programs have graphic interfaces, so designers can build games without being masters of coding, making the creation process easy to get to to more people.

Game engines have met with another developing technology: building information modeling (BIM). Developers are at present experimenting with uniting the 3D models produced via BIM software with the more immersive, practical environments that have so far been limited to the biggest-budget video games. The result is a imitation of the built environment that brings a new level of realism and engagement to designs, enabling architects, designers, and clients to see them in a completely new way.

Making the Virtual Seem Real: Rapid hardware development is taking place side by side with these software advances. State-of-the-art VR visualization technology consists of stereoscopic headgear or goggles that make wearers feel as if they are actually inside a particular 3D space.

The Oculus Rift is currently the leading product in immersive, wearable VR devices. Released to developers in early 2014 by Oculus VR, sales of the Rift developer kits quickly climbed into the tens of thousands and in March, Facebook CEO Mark Zuckerberg purchased Oculus VR for $2 billion.

Coming to an Office Near You?

Right now, the use of gaming technologies in the construction industry is mostly limited to personalized product demonstrations, but gaming applications are developing rapidly, said Harkins. At Peddle Thorp, de Plater uses immersive rendering as a design tool, moving BIM models from Autodesk Revit into the Unity 3D game engine so that those models might be experienced in a more realistic way.

Time and the Building Model: Immersive rendered environments are capable of doing more than accurately depicting designed structures and spaces and providing realistic walkthrough experiences. They can also facilitate real-time information exchange, providing benefits throughout a building's lifecycle. For example, with integrated sensor feedback, the model of an office building could show facility managers temperature data in context with desk occupancy and even relocation options.

The Next Level: Harkins predicts that related technologies will continue to merge with VR to create even more useful tools in the not-so-distant future. Consider motion-sensing hardware — the kind that has become familiar in game technologies such as the Microsoft Xbox Kinect, which allows players to control games via their voices and body movements instead of handheld controllers.

Computer Assisted Design (CAD) programme for the 3D Printing

Debamoy Ghosh

The computer aided designs (CAD) software programme enables a designer to shape their models. One of the best among is TinkerCAD. This is probably most easy and powerful programme. The essence of TinkerCAD is using basic shapes as building blocks to piece together and form designs with. TinkerCAD is compatible with all 3D printers that use the standard STL file format, and it also lets you easily export the files you've created to an external program or device if you'd like to work on it further and produce something a bit more complex. Best of all, it's completely free. Another useful programme is AutoDesk123D. It is a family of apps that let you to make CAD's in different categories and in various different ways. It works in different ways. 123D Catch is an amazing programme that generate #D model from photo. But if you want to design animals and strange creatures for animation, then the use of 123D creature is must. For designing electronic circuits CAD, 123D Circut is important. 123D Design is for basic design creation and 123D Make create unique 3D models from 2D slice.

In this respect, we need to discuss what **SketchUp** is. Invented in year 2000, the beginner-friendly Computer Assisted Design (CAD) software was operated independently, later was owned by Google (2006-2012) and currently is in the possession of Trimble Navigation -- a mapping, surveying, and navigation equipment company. The company provides a freeware version, called SketchUp Make. It also has a paid version with additional functionality, SketchUp Pro, which is available. The free version is easily downloadable from internet. So, the designer can use it freely and easily.

In this respect, FreeCAD needs to be discussed. If the designer have had a bit of experience with CAD then FreeCAD could be good for them. If not, you may find it a bit complicated. The site claims no previous CAD experience is necessary but compared to TinkerCAD, AutoDesk 123D and SketchUp it is fairly more complex.

3D Pen – a newest technology ahead

Debamoy Ghosh

The newest technology in the world of 3D modeling is 3D pen.

With the world's latest affordable 3D-printing technology, 3D pens, a designer can make solid drawings and craft impressive sculptures. But how can a designer use this marvelous tool?

If you are going to start new profession in full swing, then this small and smart 3D printing pen will assist you definitely. The pen, dubbed 3Doodler that can 'write' in three dimensions.

Experts says, the pen, which works something like a glue gun, allows the user to wave it in mid-air to create a three-dimensional rendering.

The 3Doodler plugs into an electrical outlet and oozes a thin strand of heated plastic, which quickly cools and solidifies, allowing the user to build an infinite variety of patterns and shapes.

It can create 3D designs on flat surfaces or in the air.

Spaghetti-like strands of ABS thermoplastic in a range of colors can be loaded into the back of the pen, and WobbleWorks says each one-foot strand of plastic can produce about 11 feet of moldable material.

This 3D printing pen has great potential and can be a perfect tool for stylists, architects, designers and anybody who are interested in 3D printing. We also continually have new ideas of how to restructure our 3D technology.

The prime features of the 3D pen are:

- It helps impressive art, jewellery, sculptures, and a variety of homeware.
- It helps traditional and digital artists looking to express their creativity on a new level.
- The children and parents are looking for clean and easy creative projects to enjoy;
- The hobbyists are looking to acquire useful tips, tricks, and working practices to make the most out of their 3D-printing pens.

The pen has some nice plus points:

- It is small in size.
- It is light weighted.
- Using is noiseless.
- It offers extreme portability.
- It is very comfortable to use.
- It has beautiful design.
- It has aluminum body.
- Filament 1.75 mm.

SketchUp - New visualizer 1.1

Debamoy Ghosh

The visualizer is an awesome tool for creation of clear, realistic images rapidly for communication with clients, contractors, and colleagues.

The image has the capability of thousand words to express in one moment. The picture says it all.

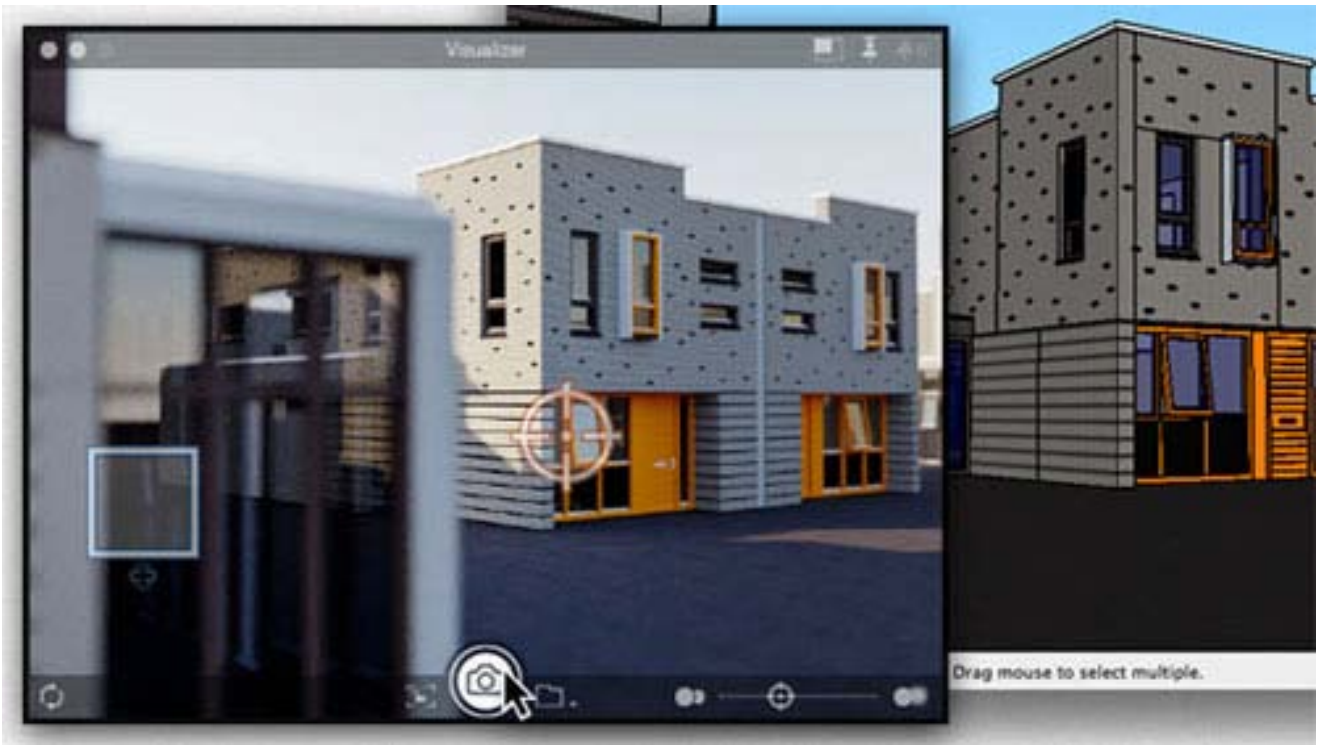
Sometimes a photo can show what a formal drawing cannot. How can we further maximize the utility and impact of our designs?

The designers must have noticed that the unshadowed-SketchUp-display had one thing that the Visualizer display does not have, that is dimension markings.

This post will show you how to quickly integrate both views together, so that you can get the best of both worlds when you need it. Here is an example:

Pixel-Perfect - To make a photo like this we just require applying a new subtle characteristic of Visualizer 1.1's new image size tool : Pixel-Perfect Alignment.

In Visualizer's window size controls, the top button sports a tiny SketchUp logo. When you click it, Visualizer's window will alter its proportions to match that of the SketchUp display. And if you hold down the shift key when selecting it, Visualizer will also match the SketchUp display size exactly : pixel-for-pixel.



If we save the Visualizer photo and also use SketchUp's own "Export 2D Graphic" ability, these two pictures will align perfectly and can easily be mixed to gain the combined strength of both views in a single photo.

Step-by-Step: If the designers are skilled with mixing SketchUp with picture tools like Gimp or Photoshop, you may already know everything you need already. For the rest of us, here is a quick systematic breakdown:

- For Visualizer, designers know what their need to know: shift-click the window size to get perfect alignment with SketchUp, and then press the shutter button to save that image when you are satisfied with the detail and color.

- In SketchUp, the designers need to tweak our display so that only the dimensions guides are shown. This is surprisingly easy!

Firstly, turn off SketchUp shadows.

Then, open the SketchUp "Styles" window from the "Window" menu, and follow along with these three step.

- To finish this up, we will need to combine them in an common image-editing program like Gimp or Photoshop. We will use Gimp in the example since it's free for anyone - the steps are nearly identical in Photoshop.
- simply combine the pictures as two layers. In Gimp we can get them both in a single step, using "File->Open As Layers..." and select both images before pressing the "Open" button.
- Open the "Layers" window, and you'll see your two layers. If the dimensions layer is not visible, just drag-rearrange them so that the dimensions are on top (red star in the illustration)
- Select that dimensions layer and change the Mode from "Normal" to "Multiply" (marked by the green star). Voila! Our dimensions are layered over the Visualized house.
- The dimensions will be in black. If you'd like a lighter touch, you can also edit the opacity of the top layer, as we did in our example picture at the beginning of this post (blue star).

Create a compelling design of your bathroom with Sketchup

Debamoy Ghosh

Before any designer starts the ultimate process to make a bathroom using the 3D design software, all they need to have a solid plan. However, SketchUp is the best software that can do this work.

One approach most often used by designers is adding your chosen items and design ideas to a mood board.

The will be some carefully chosen accessories in the washroom – a vintage 1930s mirror and the glass bonbon jars – are also objects that you would more usually expect to find in a living room.

The tranquility in colour scheme and accessories of the nautical theme is a popular trend and very appropriate and easy to achieve in a bathroom design.

How SketchUp can provide benefits for design?

There are some basic reasons that the designer should use SketchUp for design this.

- SketchUp is an amazing free application for creating professional (non photo-realistic) 3D models on the fly.
- It's a great application for someone looking to create quick mockups rather than worrying about notoriously complex 3D modeling applications that can take years to learn, which require various setting configurations like lighting radiance adjustments, multiple cameras, UVs, etc.
- You can share and import resources provided by many users of SketchUp, which helps avoid wasting time unnecessarily especially when someone has already sketched something to suit your needs
- The resources and support available for using SketchUp is quite vast, which includes an official Sketchup blog, Sketchup Products Forum, Warehouse of Designs, even related to Bathrooms and How To Tutorials on Sketchup Youtube Channel.

SketchUp Make is a free version of the three-dimensional modeling application. It enables you to plan and visualise projects on your computer; not as static drawings, but as models you can take apart, put back together, and view from any angle.

This video would make the designer believ that they could use SketchUp for innovative design.

https://www.youtube.com/watch?v=jb23enMOHyc

SketchUp layout for bathroom design.

https://www.youtube.com/watch?v=yI45ZJBzGRs

Making of Exterior Scene with vray sketchup hdri

Arch. Dario Ilardi

www.grafica2d3d.com
https://www.facebook.com/grafica2d3d

Modelling with sketchup 2014

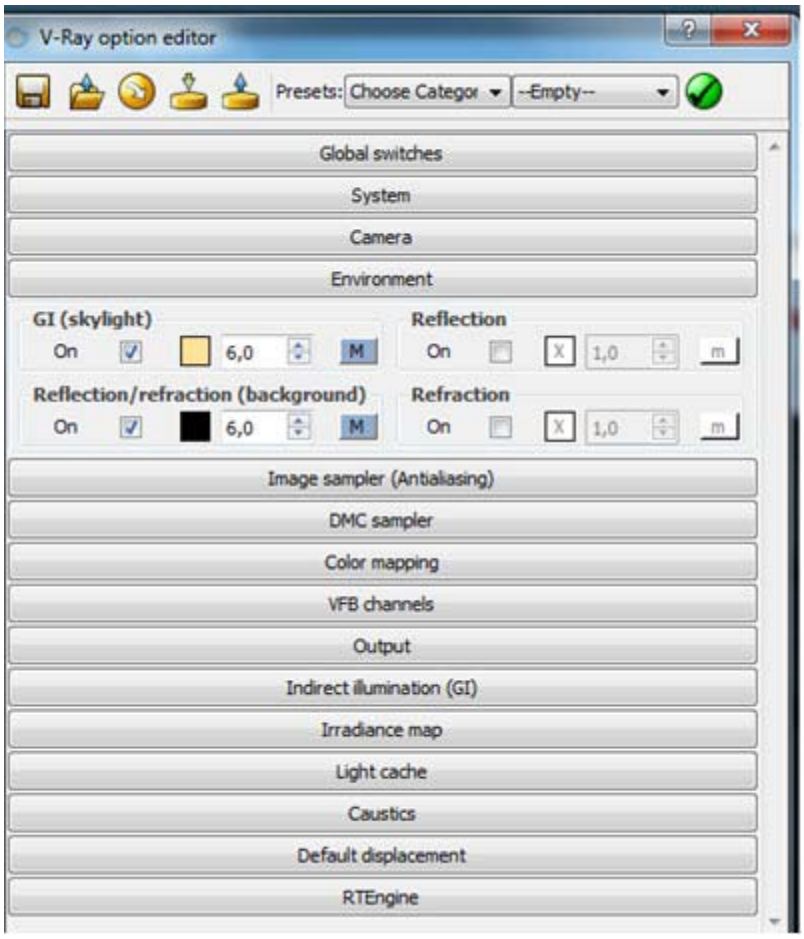
Render with vray 2

No postproduction

THE SCENE

SETTING RENDER

Environment HDRI Map

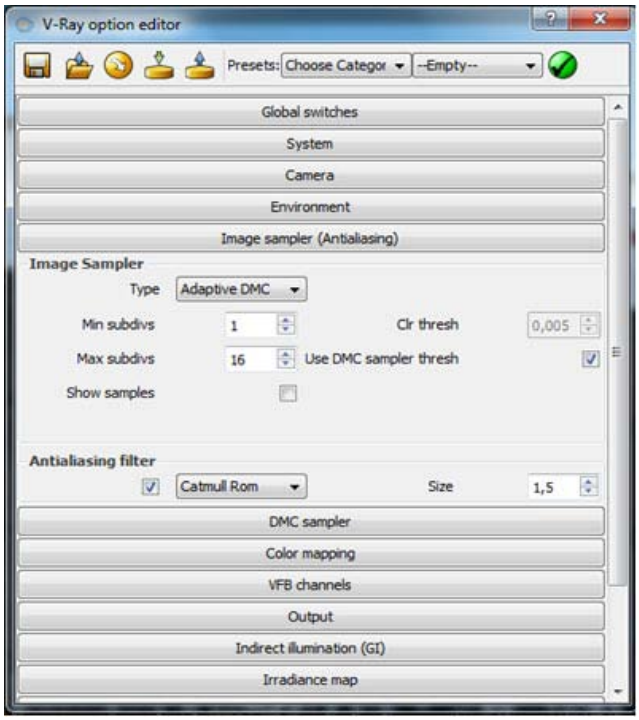


Setting Map GI SKYLIGHT

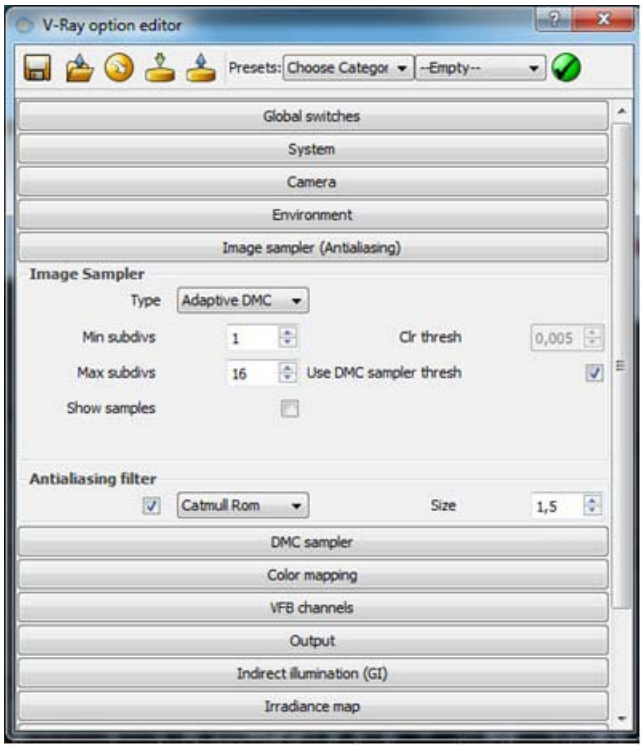
Map HDRI download

http://www.viz-people.com/portfolio/free-hdri-maps/

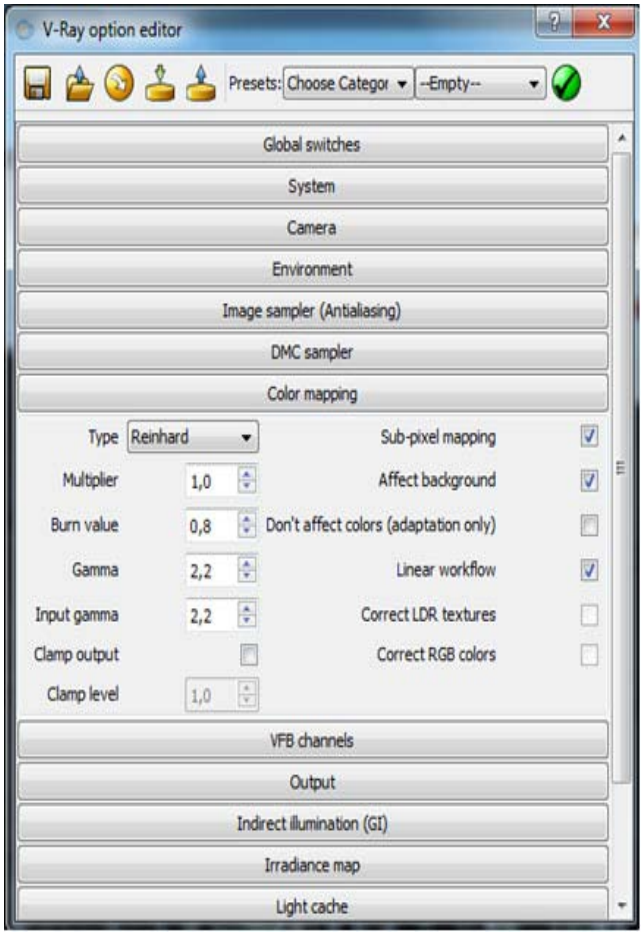
Anti aliasing setting



DMC sample setting

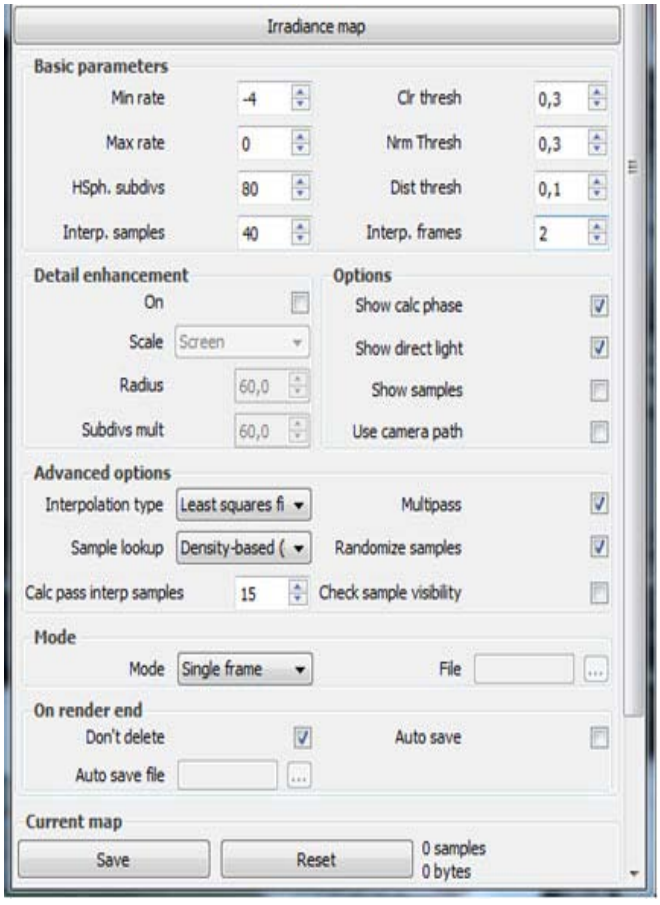


Color mapping setting

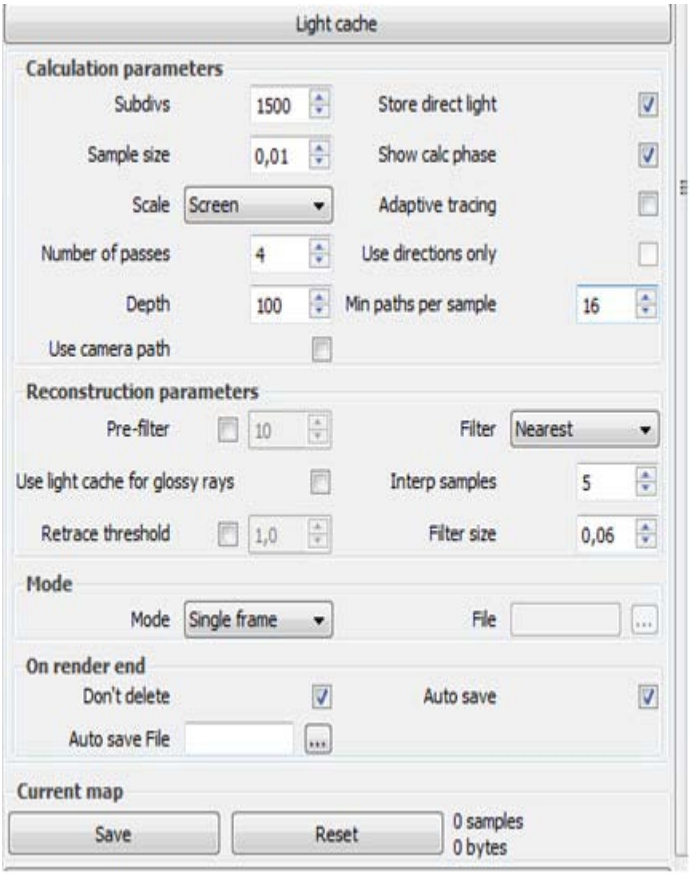


Indirect illumination GI setting

Irradiance map setting

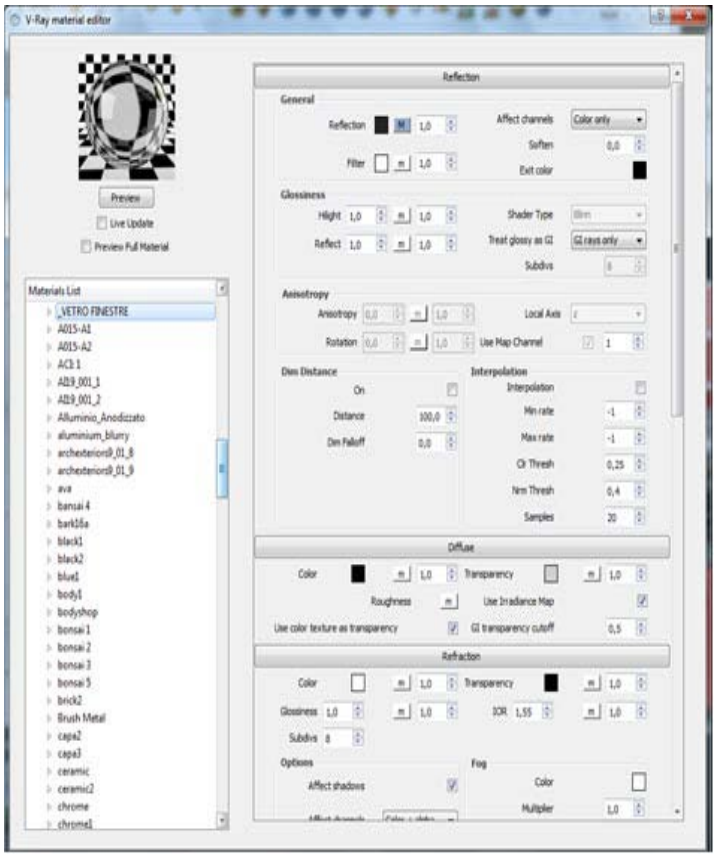


Light cache setting



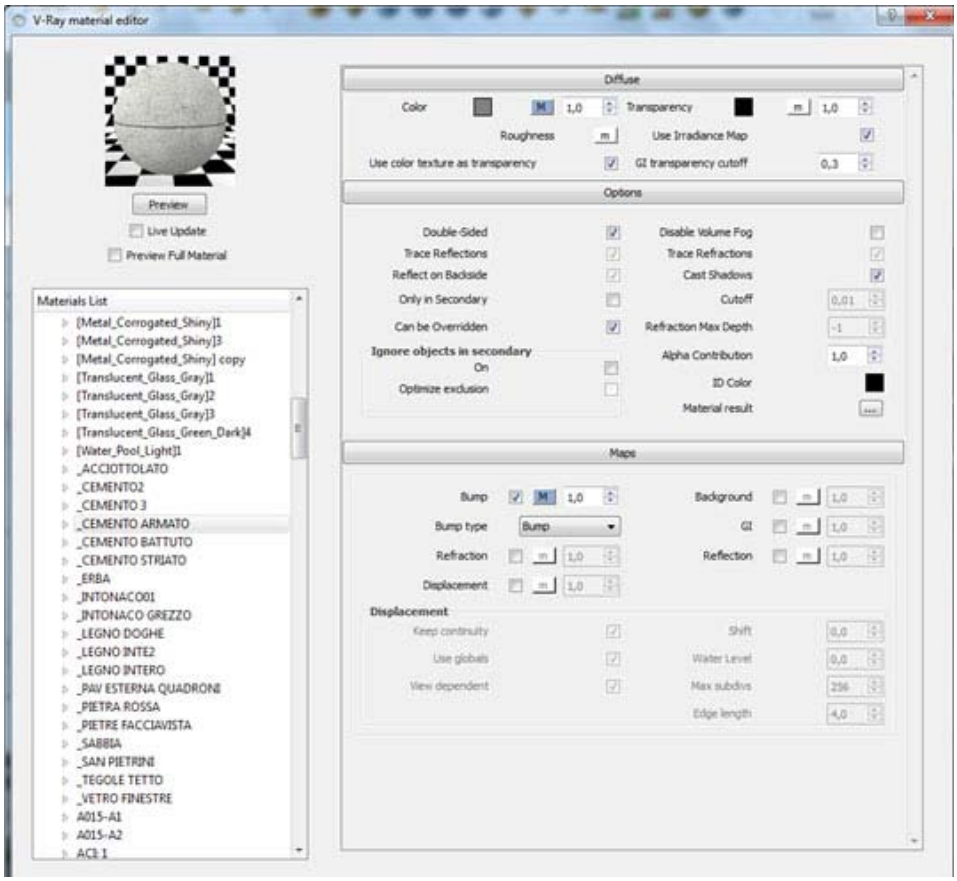
MATERIAL SETTING

glass windows

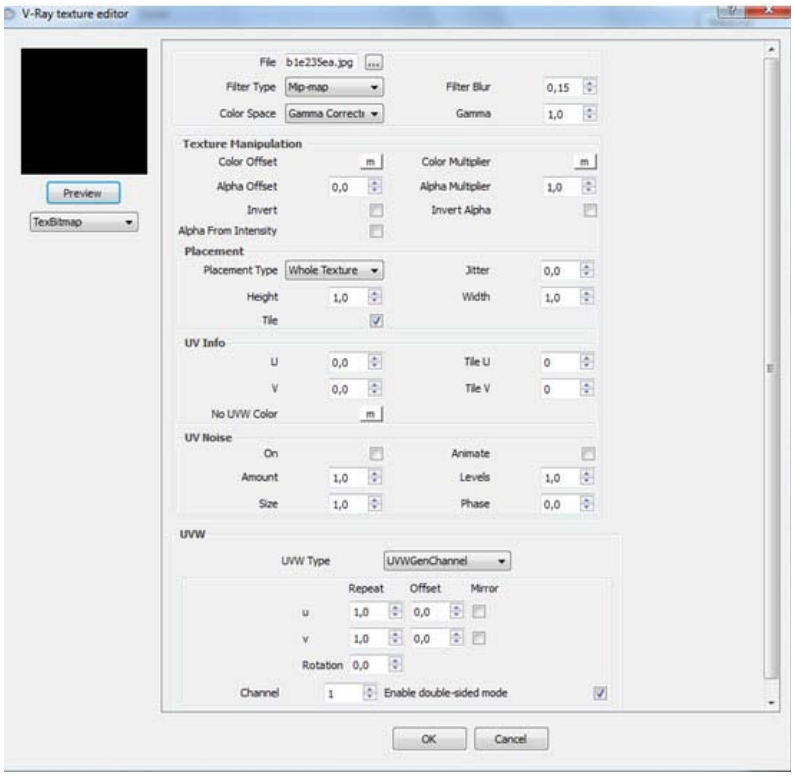


map reflection

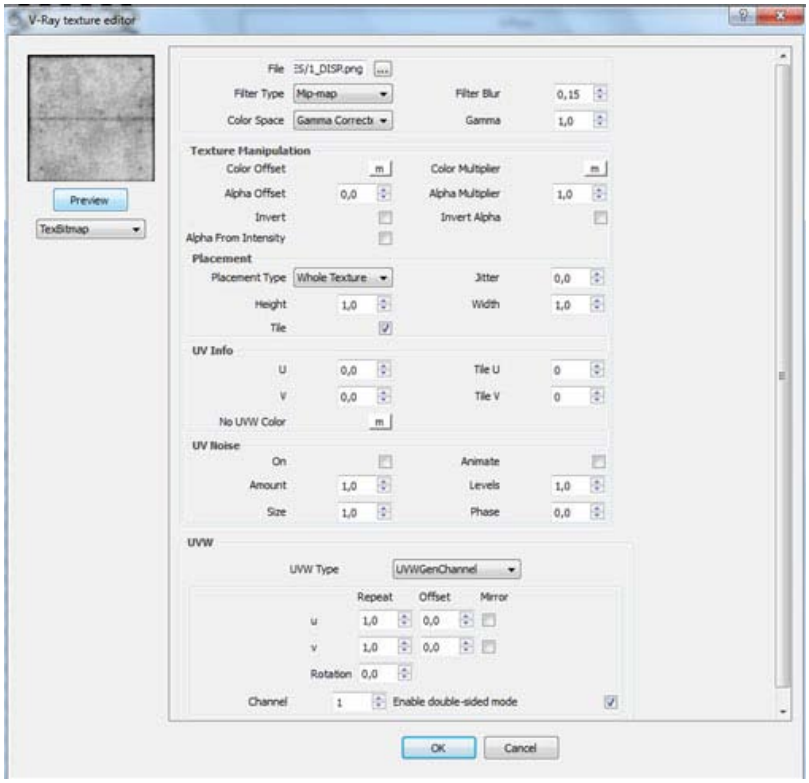
concrete



bitmap concrete



bump concrete



How to flip or mirror geometry with Sketchup

Rajib Dey : Editor-in-chief

With a flip process, one can create a mirror of any geometry. A mirror is useful for generating a mirrored copy of any geometry.

Flipping geometry: Flipping can be used while trying to produce a perfect mirror of your geometry. In order to flip geometry, pursue the following steps:

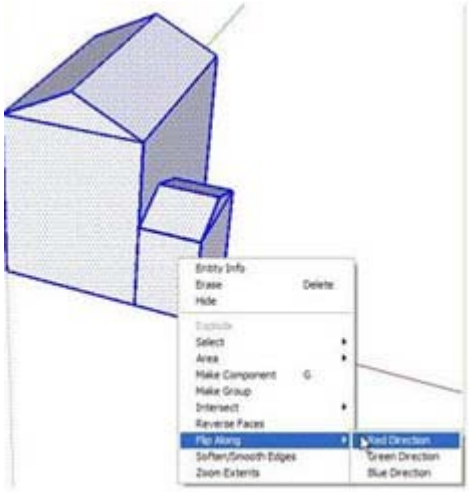
- Choose the geometry ready for flipping.
- Context-clicking on the geometry and the context menu will be visible.
- Opt for the Flip Along context menu item.
- Now select the path or axis for the flip. The following image depicts the geometry prior to flip process takes place.

Mirroring Geometry: The process for mirroring geometry is identical to flipping, but one can produce a supplementary copy. With mirroring process, one will be able to generate one half of a model and then replicate and mirror that half to produce the other half of the model. In order to mirror geometry, one should abide by the following processes:

- Choose the geometry to be mirrored.
- Replicate the geometry.
- Paste the copy.
- Context-click on the geometry and the context menu will be shown.
- Opt for the Flip Along context menu item.
- Now pick the path or axis for the flip.

One can also take help with the scale tool for flipping or mirroring geometry.

https://www.youtube.com/watch?v=amS2giRzPyc



Some useful tips to get the best result from your rendering with V-ray

Rajib Dey : Editor-in-chief

It is very challenging task for all the artists to provide a perfect realistic look in their 3d scenes. In this regard V-ray can be handy tool to arrange scenes & render them perfectly as well as particularly resolve and polish up the images. V-Ray 3.0 is the most improved version that contains a wide array of new toolset useful for augmenting your workflow speed as well as making the rendering quality better.

The renowned digital artist Vinnie LaCour has presented some useful tips focusing on some of the advanced features of V-ray 3.0

Latest UI synopsis: With V-Ray Quick Settings dialog, the users can avail their desirable render settings and these can be used in new scenes for having quick views effortlessly.

This dialog provides the users some fundamental settings to start with. There is a setting button with some options through which the users can get the render settings dialogue directly where the users can adjust some of the advanced controls. There also exist Basic, Advanced and Expert modes in the UI interface.

Scene Arrangement: Provide a little lights and a ground plane, and apply VRaySunlight and VRayDomeLight. For experimentation of lighting, one can include a V-Ray material to the supersede material slot and keep out glass objects.

Progressive rendering facilitates the users to envisage their renders swiftly devoid of retarding for a final frame. The users will be able to have a instant preview of their scene and they don't require to switch renders or modify settings. The Progressive rollout exists directly under the image sampler rollout and it includes the lowest amount and highest samples and maximum render time.

Final Amendments: V-Ray frame buffer is also significantly improved. There are new inclusions to the color correction and these are very useful to check color modifications as well as adjust independent materials devoid of re-rendering the whole image through the new Render Mask feature.

Opt for the Image Sampler rollout (V-Ray>Render Settings), change the Render Mask dropdown to Selected and pick the objects the users will prefer to tweak. Make some modifications to the materials used to those objects and re-render

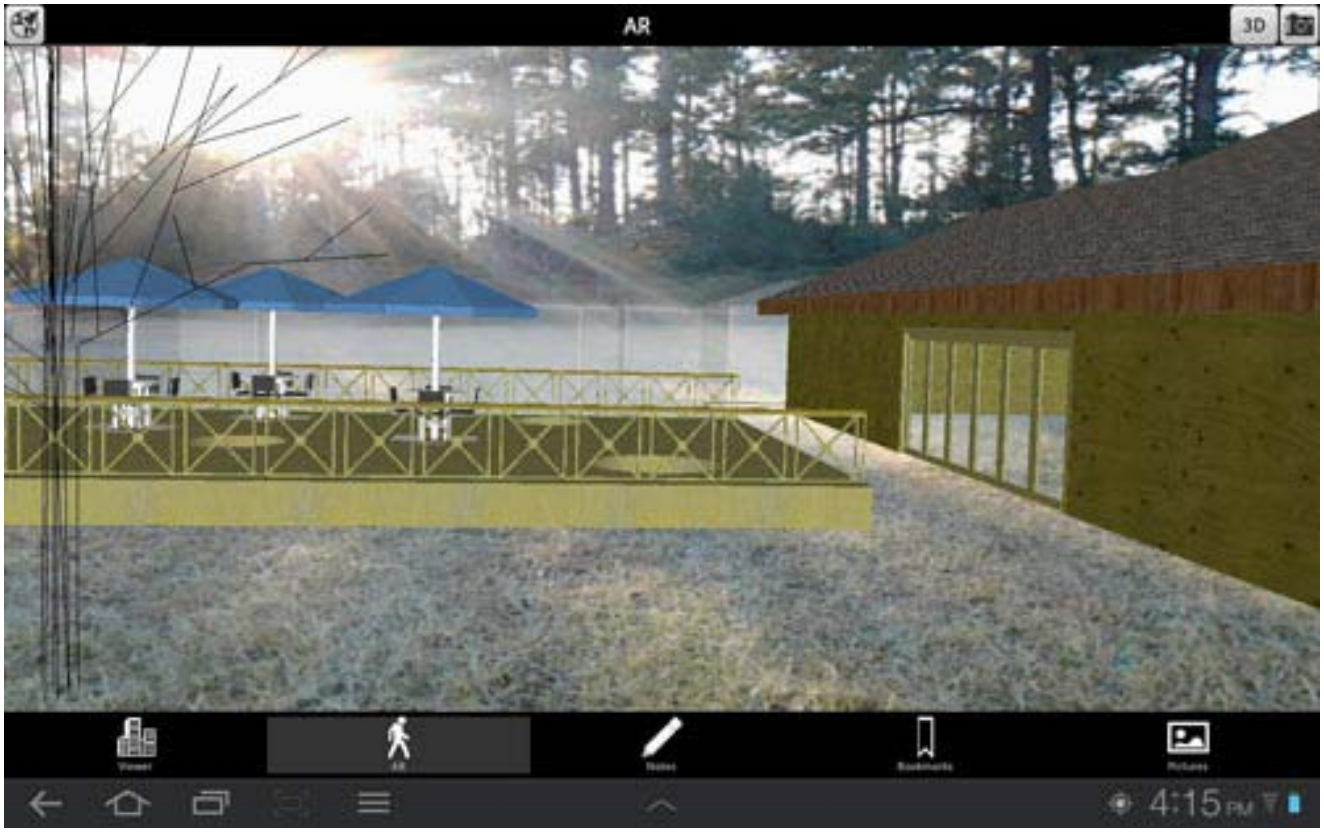
SightSpace view mobile augmented reality claims best new product award

Debamoy Ghosh

A leading service provider of 3D mobile Augmented Reality, recently proclaimed that SightSpace View, its Trimble SketchUp plugin and companion mobile app that quickly and easily deploys designs to mobile, has earned a Best New Product award from Worship Facilities and Church Production Magazine in the category of Best Website Software, Software Tools or Related Online Services.

SightSpace View was selected by Worship Facilities and Church Production Magazine editors, illustrious members of the WFX Advisory Board, and WFX management to join an exclusive group of organizations deemed the most noteworthy.

“We are honoured to be recognized by Worship Facilities and Church Production Magazine for Sight Space View because it confirms that it perfectly is augmented reality for everyone,” commented Dr. Errin T. Weller, president, Limitless Computing Inc.



“Sight Space View is an ideal way to visually connect church congregation members and enable them to experience proposed construction plans. By digitally connecting with a mobile audience, ministries can move beyond the walls of the church to facilitate communication.”

Church leadership uploads a design to the SightSpace View service and select options for design display in the mobile app. The View service delivers a unique QR code for sharing. Anywhere leaders place the code, such as on display materials or a website, the congregation will have a 3D mobile experience.

About Sight Space View Plugin and Mobile App

Sight Space View is a free plugin for Trimble SketchUp that works with a free companion mobile app (on Apple and Android), which overlays a design on the code whenever it is scanned.

Best way to clean 3D printer

Debamoy Ghosh

There are so many attractive technique to advance the performance, as well as strength and sturdiness, of a 3D printer. This is an up-and-coming industry, thus modernization, discoveries and improvements in the way things are done are continually being discovered. It's oftentimes the small developments, and ideas, which make the major divergence.

This is certainly the case with a little machine called the Universal Filament Filter, created by a company based in Sweden called Creative Tools. The main part is so small that it can be 3D printed within an hour. What it does, is help to clean and oil filament use in an FFF/FDM 3D printer.

Once the main part is printed, a minute piece of foam, or a sponge, should be cut to dimensions just about the size of the 3D printed part. This piece can then be pushed into the hole within the filter. Once this is done, you are ready to feed the end of a reel of filament in through the hole, making sure it goes directly through the sponge situated inside, and out the other end. It may make it trouble-free to cut off a little piece of filament on an angle, so that the end of the spool is sharp and can more easily pass though the sponge.

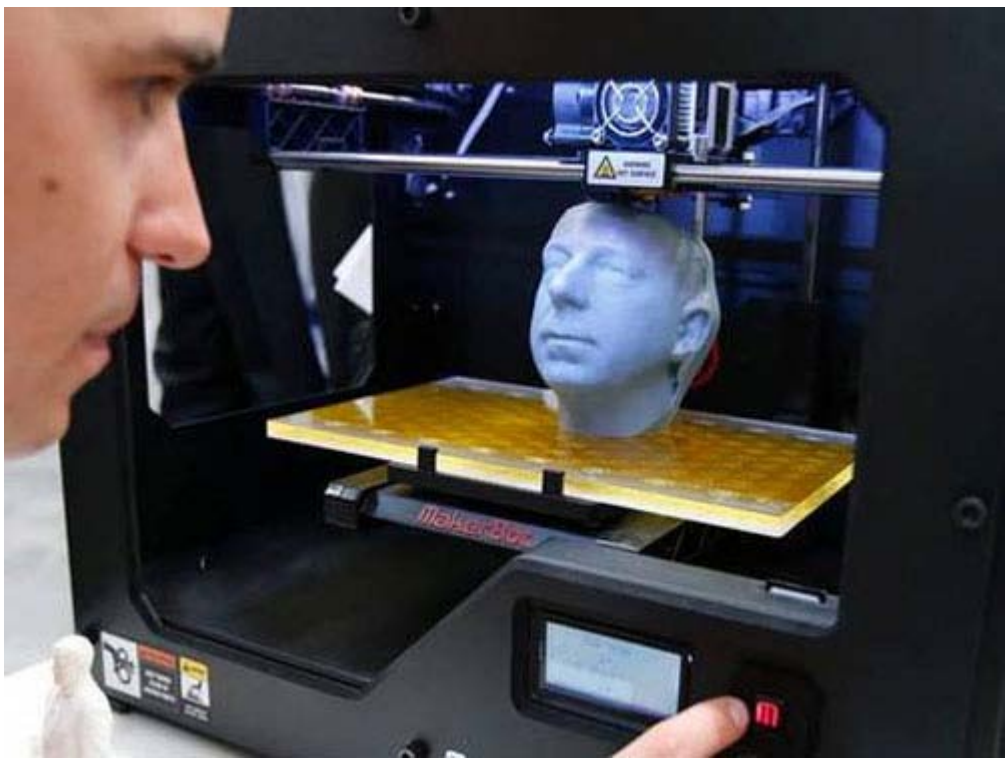
Now, just add a little bit of mineral oil, which can be found at almost any convenience store, to the sponge, and you are ready to go.

The filament filter should be placed somewhere in the area between the reel and the extruder, so that the filament which is fed into the extruder first passes through the filter.

What the filter does is oil the filament, while also cleaning any dust or other particles from it. In doing so, you will reduce the strain on the extruder's motor, making it last longer and perform better. In addition, the filter will prevent clogging of the extruder caused by dirty or dusty filament, an all too common problem users run into with desktop 3D printers.

This video will restore you more knowledge.

https://www.youtube.com/watch?v=rMDEsrgzC9M



How drones, digital photogrammetry & 3d printing technology can streamline the surveying process

Rajib Dey : Editor-in-chief

Recently some significant changes are taken place in geological surveys with the introduction of drones and Digital photogrammetry that can substitute the old manual process of 2d mapping with 3d printed models. Thus photogrammetry can automate the surveying process by producing complicated, 3D models.

Digital photogrammetry is the system of taking dimensions from digital photographs by applying remote sensing and speedy imaging to record exact positions of surface points in 2D and 3D precisely.

Drones provide immense benefits for obtaining data from regions (rocky cliffs) that are usually very tough for surveyors. Drones facilitate the surveyors to generate numerous points in quickest possible time.

Drones Imaging utilizes PhotoScan photogrammetry software to create the 3D models out of the images and data its drones produce. The images are formed with .obj format. The next level of exactitude entails 3DReshaper, which can fine-tune the 3D models and make them ready for printing.

Recently 3D printing has evolved in such a way that it can now be applied in line with digital photogrammetry and 3D modeling to create 3D printed models of the correlated data. Some leading 3d modeling programs like Sketchup comes up efficiently in transforming 2D- and 3D-survey data into functional 3D models. The advanced 3D printed is the part and parcel of this avant-garde process.

It is expected tha the 3D printing technology will advance at an alarming rate in near future and Drones Imagining can bring superior 3D printed models that will keep the accuracy of the present, smaller-scale ones.

Explore with various 3d modeling technologies & DIY activities with Delaware Libraries Inspiration Space

Rajib Dey : Editor-in-chief

The Delaware Division of Libraries declares the availability of Delaware Libraries Inspiration Space.

The Delaware Division of Libraries is a state based agency that proposes free access to theonline catalog; Wi-Fi; computers/internet; eBooks, programs/classes, community partnerships, and lots other for Delawareans.

Delaware Libraries Inspiration Space is an informal community learning environment as well as mini-makerspaces for all Delawareans. It is a collective, imaginative space where people can explore various technologies and DIY activities. Besides, it also provides the career opportunities facilitating Delawareans to get a job in the market.

Inspiration Space services can be accessed at all libraries all through the Delaware; the leading three locations are the Wilmington, Dover, and Georgetown public libraries. All public libraries consist of **laptops with 3D modeling, design, and coding software as well as programs on Coding, Digital Photography and MinecraftEdu**. Till now seven libraries possess 3D printers, green screens, and design software: Dover, Georgetown, Laurel, Lewes, Milton, Wilmington, and Woodlawn. For 3D printing, Delawareans can design an object with the help of any PC in a public library or from home, and then make it printable in one of these seven libraries which contain a **3D printer, Design, Coding, Entrepreneur software comprises Cura, SketchUp Make, Blender, Scratch, Adobe Premiere Elements, Adobe Photoshop Elements, MinecraftEdu, Quickbooks, Business Plan Pro, ReferenceUSA, and Learning Express**. Hardware comprises DLSR cameras, Green screens, Lighting kits, and Wacom tablets.

If any organization wants to create alliance with libraries, please contact the Delaware Division of Libraries.

For more information, contact:
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Magazine Details – The Creative team of Sketchup-ur-Space

Started in September 2010, Sketchup ur Space (SuS) was the first online magazine devoted to SketchUp, that unique, innovative 3D design tool from Google. It holistically covers features, events, news, updates, reviews and many tips and tricks.

Rajib Dey: 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

Manoj is enthusiastic helps to put the content of the SketchUp up 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.

Abhishek Mondal: abhishek@jobs2india.com

Abhishek is the designer-in-chief of this magazine with the help of his creativity Sketchup ur Space has gotten a classy as well as trendy look...

Debamoy Ghosh: debamoy@jobs2india.com

Pouring the confidence to budding 3D modelers is a challenge, which makes them believe that they can create a universe. I try to bring exciting stories that not only riveting read but put them the right technical path. After all, every right action needs believe and determination for fulfillment.