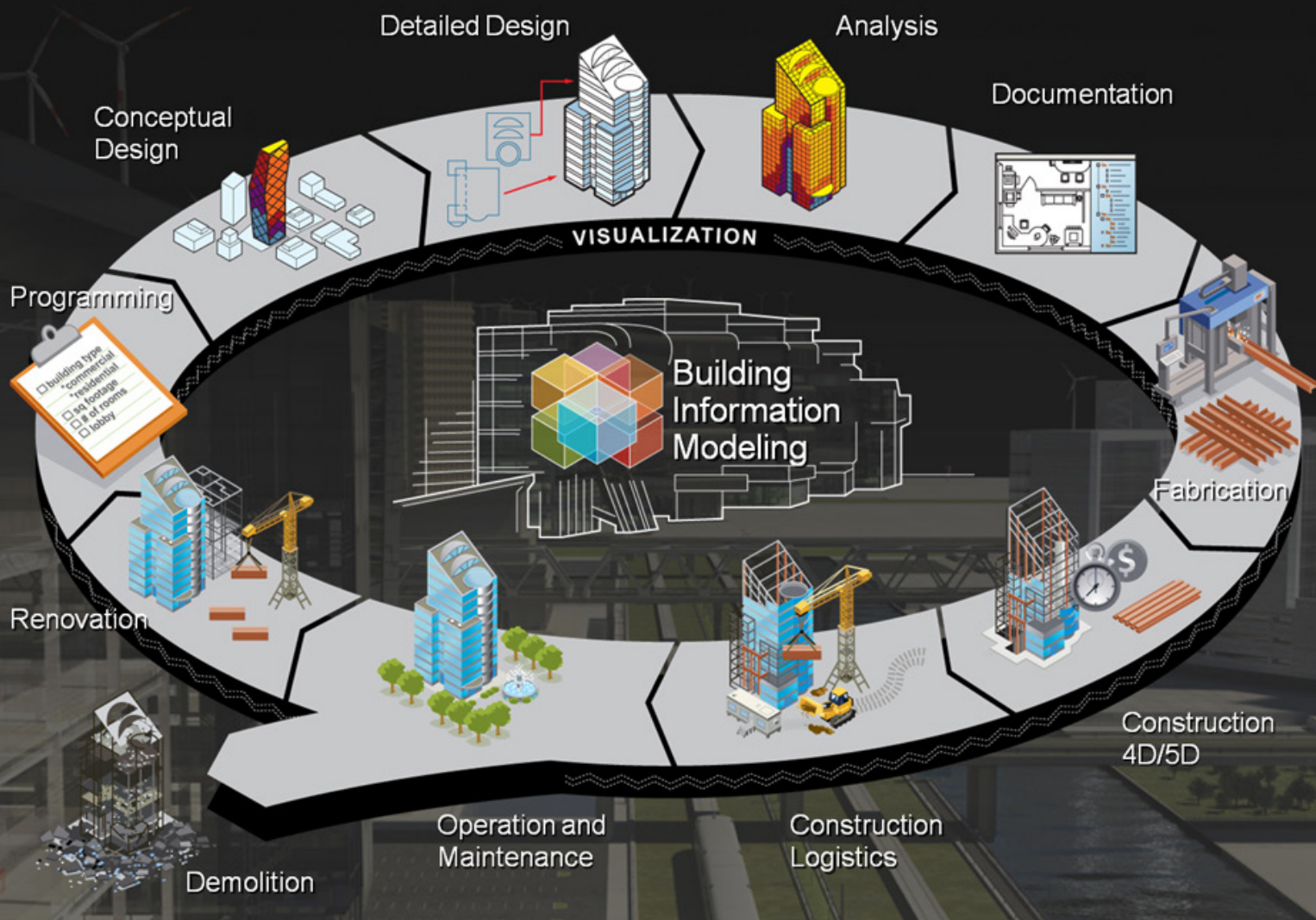
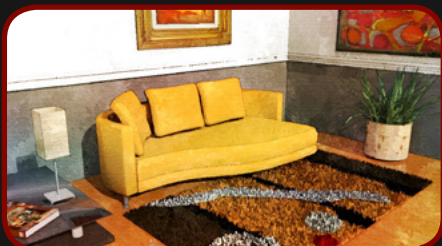


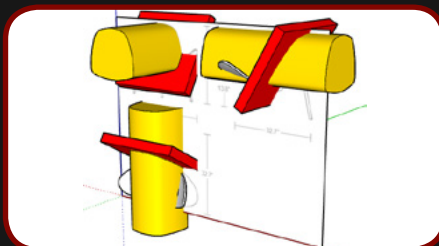


BIM + WiKi = Future?



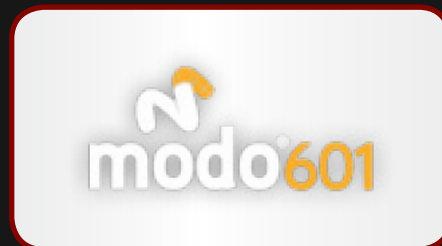
Make Fur

**Learn how to use
Make Fur to bring
your interiors to life**



Hans Wegner

Complete step by step tutorial on modeling a Hans Wegner chair



Modo 60I

In depth Review with SketchUp workflow

Chairs, fur, materials and BIM

We have a bumper edition month with some stellar uses of SketchUp in store.

Eric Lay returns with what can only be described as epic. A true masterclass in modeling.

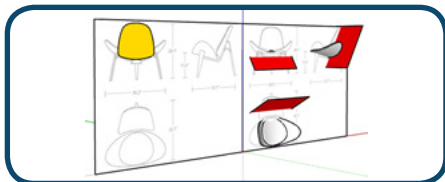
Adriana Granados show us how to use Make Fur for interiors and Duane Kemp shares his experiences using Shaderlight.

Mayor Mike Lucey takes us

through the BIM process and why it needs to evolve.

Plus all the usual news, reviews and sneak peeks.

Enjoy!



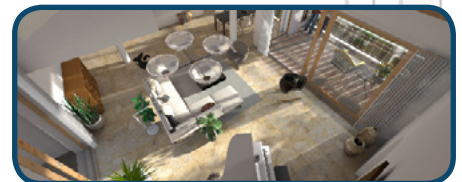
HANS WEGNER

04 Eric Lay returns with an epic tutorial in furniture modeling. Masterclass from Massimo Siracusa.



CARPET FUN

21 Using MakeFur to simulate textiles. Adriana Granados walks you through generating rugs in seconds.



KEMP CASESTUDY

25 Duane Kemp's incredible journey with Shaderlight. From still images to animations.



JOT TOUCH

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MODO MOJO

22 The ins and outs of Modo 601. A look at Luxology's latest release and why it is breaking new ground.



WHAT IS BIM?

28 Understanding BIM. Mike Lucey's overview of BIM and SketchUp going forward.



image by Michalis Zissiou



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Hans Wegner CH07 Lounge Chair - 1963



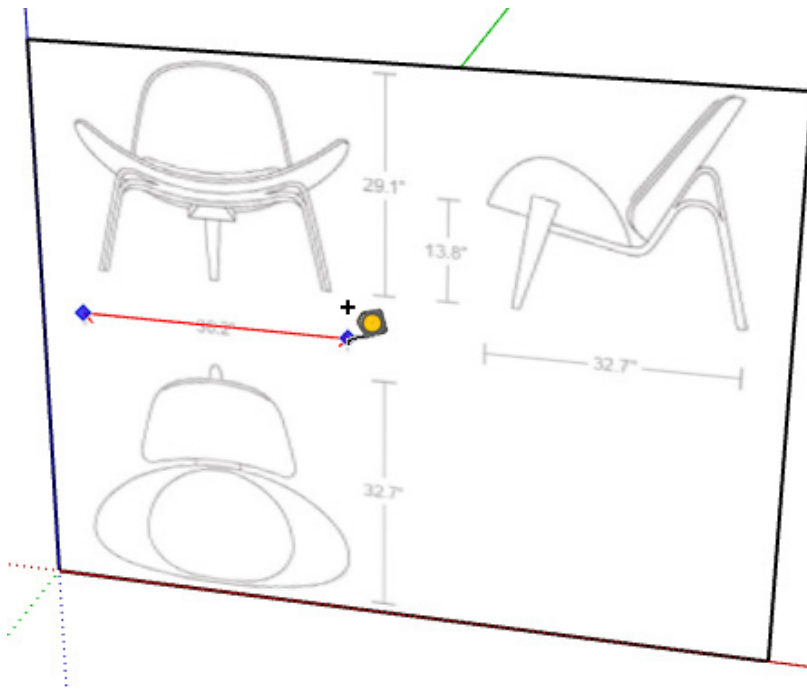
To model any item it is helpful to have good reference images. For this chair I have many images showing different finishes and upholstery options. I also have the side, top and front profile with measurements which helps tremendously. All of these were found easily online. This is a beginner/intermediate SketchUp modeling tutorial.

If you closely inspect this chair you will notice that there are no compound curves to the wood. This will make modeling the chair fairly simple.

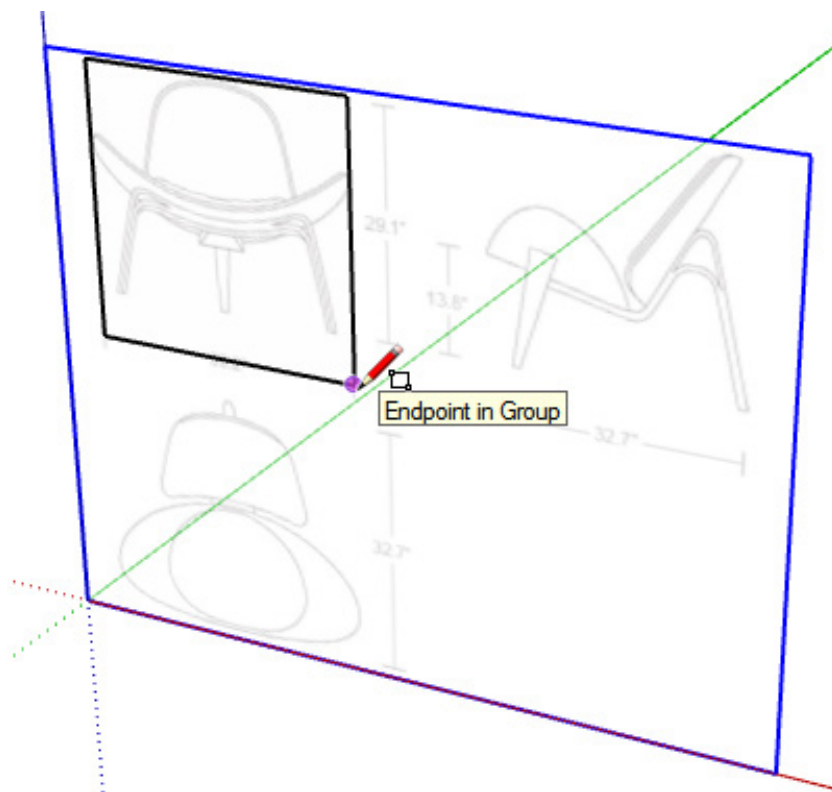
You will need the [Joint Push Pull](#) plugin which can be found on SketchUcation and you will also need the [Tools on Surface](#) plugin.

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Start off by importing the image into SketchUp and scale it to the correct size. The easiest way to do this is to use the tape measure tool. Pick a dimension on the image, preferably the longest, click on one end of the dimension then click on the other end. Now type the dimension listed in the image and SketchUp will ask you if you want to resize the model, click yes. Your reference image is now the proper size to model to scale.

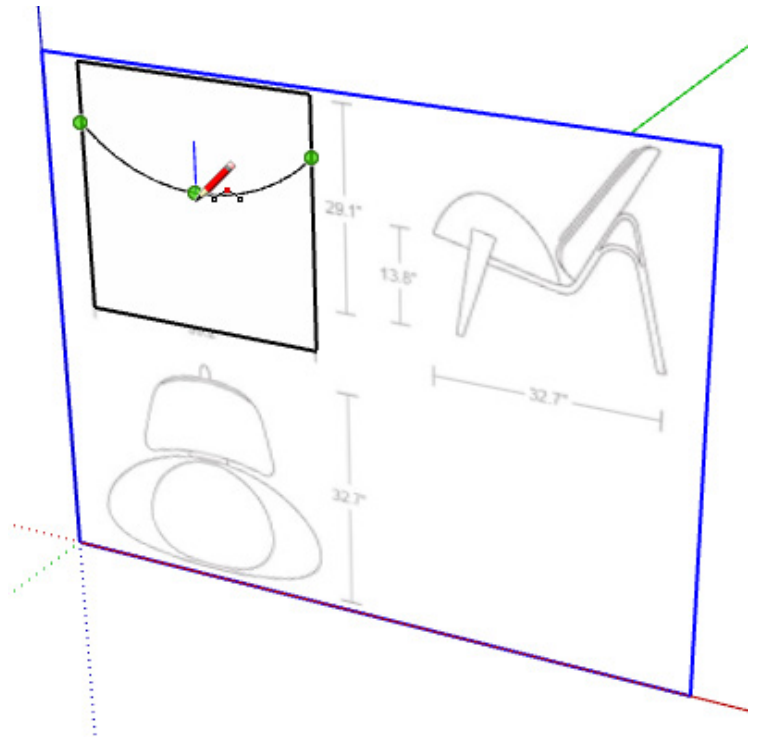


Click on the X-Ray view style and draw a box using one of the dimensions. Here we will start at the front of the chair. This box will allow us to align the edges while laying out the chair.

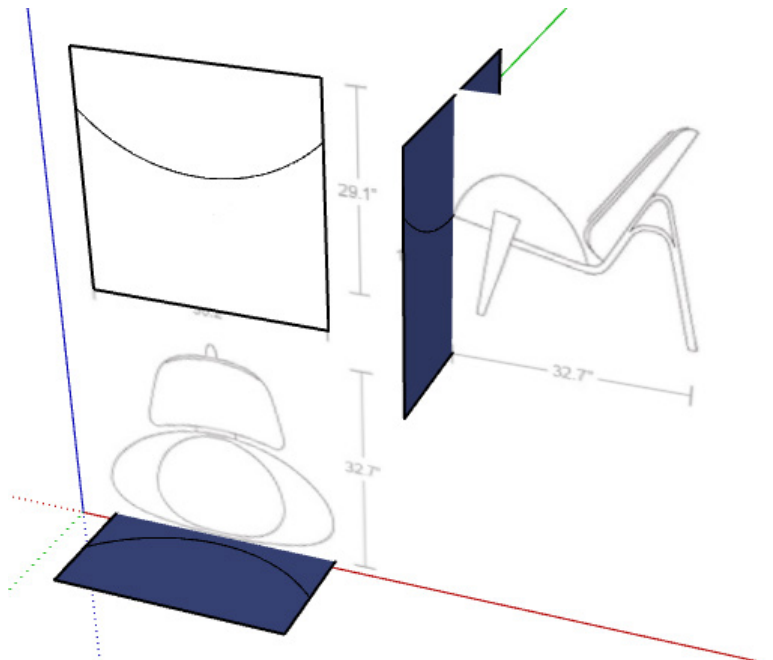
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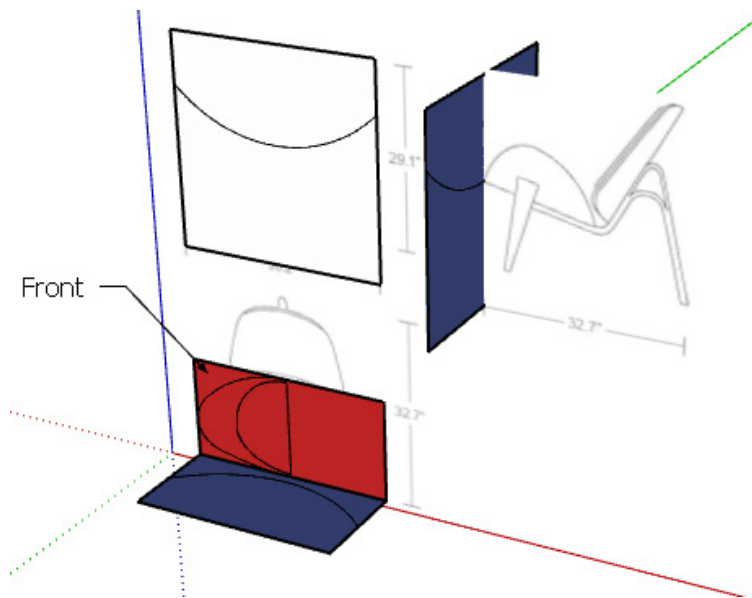
Start off with an arc for the front of the seat. For this model I am going to make it a fairly high polygon model so when you click the arc tool make sure to type 48 in the VBC (Value Control Box) before you draw the arc. Click on one side of the box then perpendicular on the other side. Finish the arc by drawing the bulge. You can eyeball this part then move the arc up or down to line it up the way you want it.



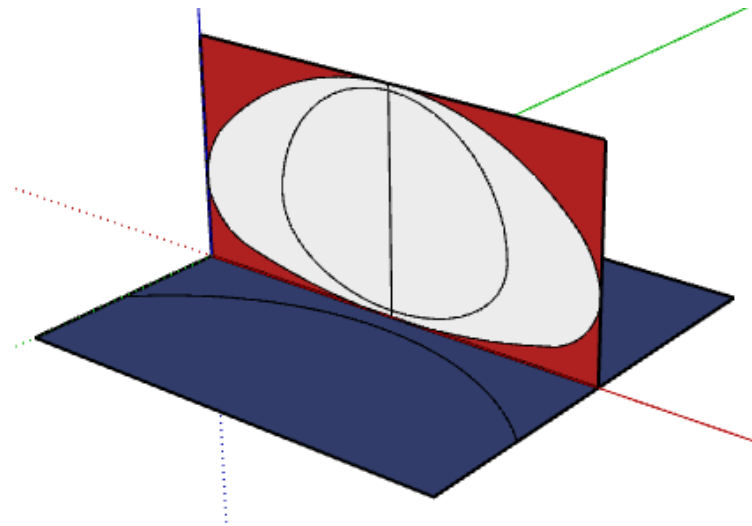
Now make your box with the arc into a component and name it "SEAT". Copy it to the right and rotate that one 90 degrees and move it to the front of the seat on the reference image. Do the same with the top view, rotating the component copy and placing it at the front of the seat.



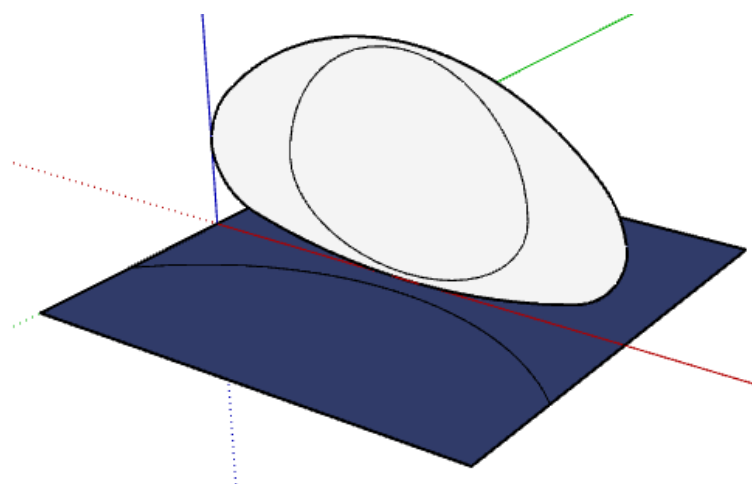
This will allow you to manipulate your modeling on 3 axis giving you better control over the desired shape.



Now trace the seat shape by drawing another box around it and using the arc tool. Draw half of the shape then you can mirror it to the other side. This may take some trial and error as the shape is not a regular shape. There are many plugins that could help but I find the arc tool the easiest to work with. Again, for this example I am using a high polygon count so I make sure I adjust the arc segments before I draw.



After drawing the profile of the seat on one half, copy it to the side, **use the scale tool** and scale one side, flip it to the other side until you see -1 in the VCB. Or scale it a random distance and type -1 to finish the “mirror” of the geometry. There are a couple mirror plugins that work well too.

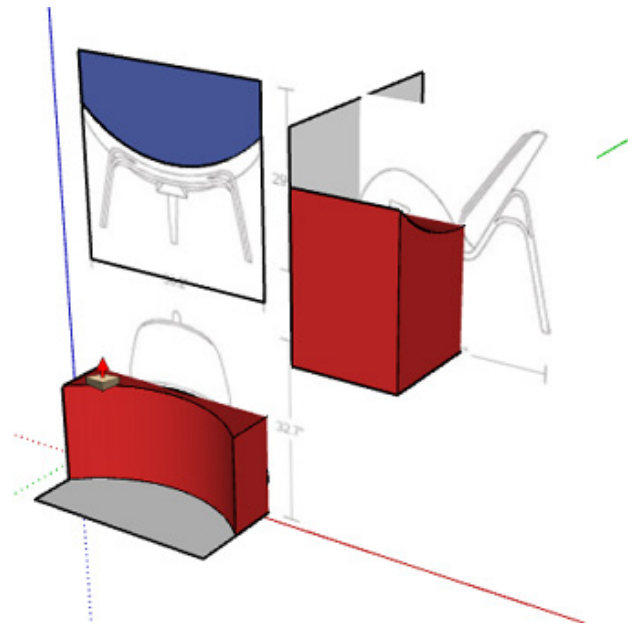


Erase the dividing line and surrounding square.

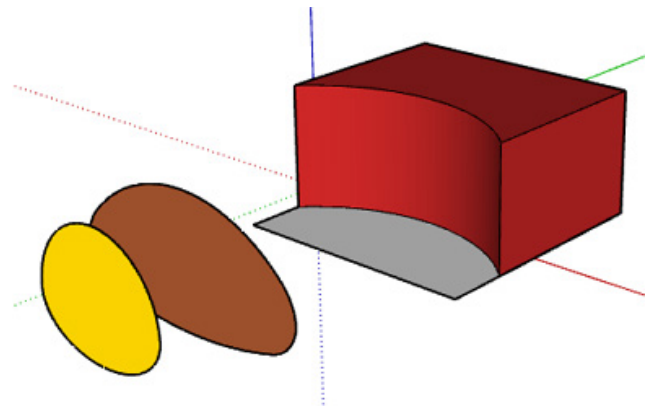
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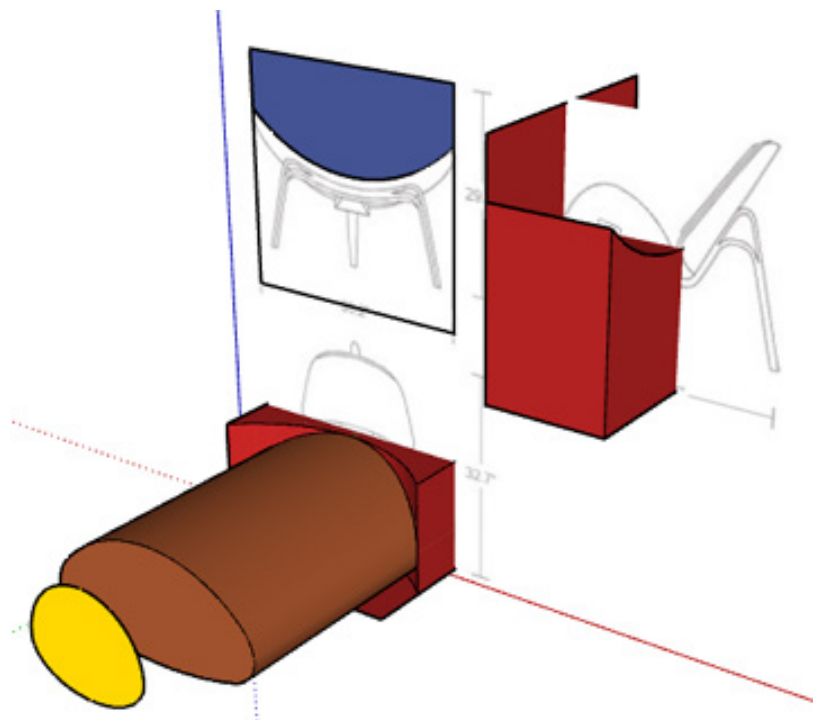
Edit the bottom component and use the push pull tool. Pull up the bottom part of the square until it is aligned with the back of the seat profile you just created. You should notice that all three components have been altered which is what you want.



Move the seat profile outside of the component, away from the reference image. Separate the inner shape, cushion profile, and the outer shape. We will use them separately to mark the seat component.

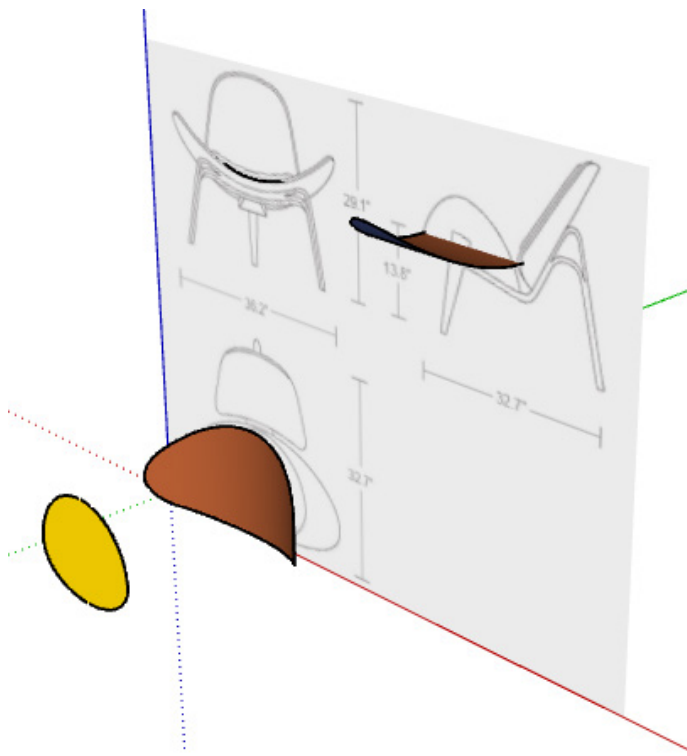


Push the outer profile through the component. Edit the component, select the curved face, context click and choose “Intersect Faces - With Model”.



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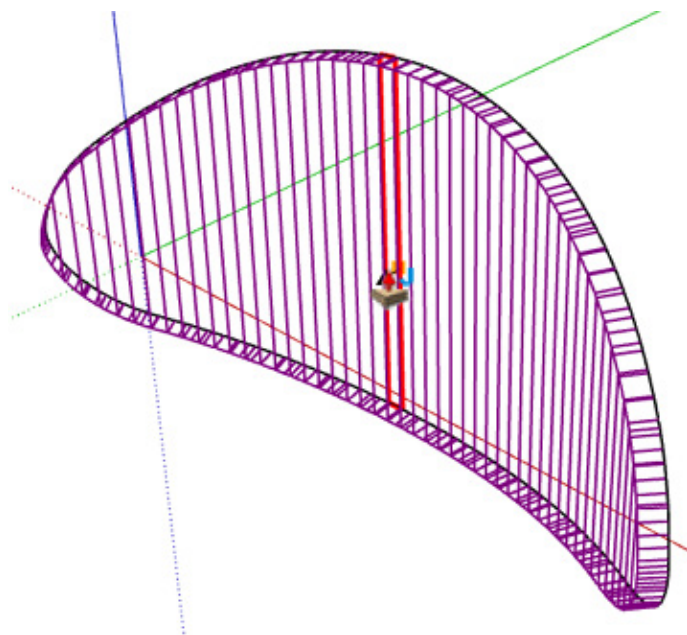




Erase all the geometry except for the curved seat shape. Close the component and erase the shape you used to intersect with.

Now to make the seat thickness. The easiest way to do this is to use the “Joint Push Pull” plugin. Select the curved face, activate the Joint Push Pull tool and then click on the face. Start to pull the face away but before finishing the thickness press the Tab key. This will bring up a dialogue box.

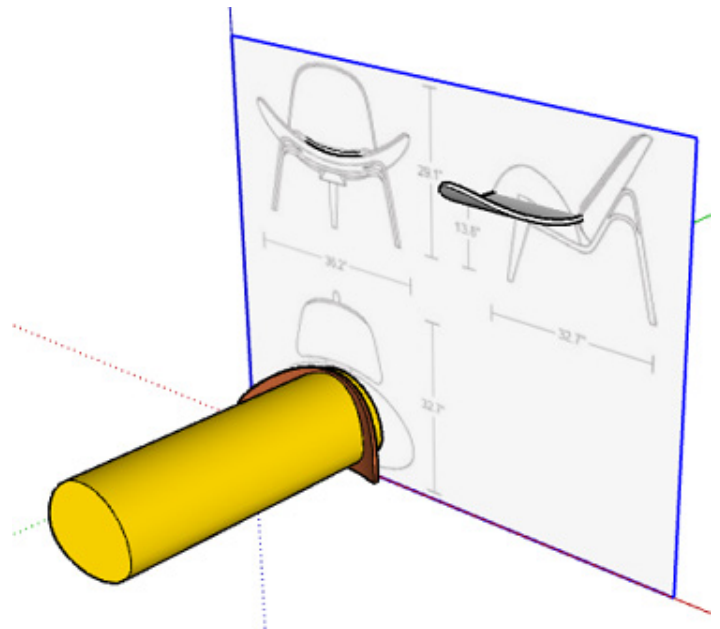
For “Finishing options” choose “Keep original faces”. Continue pulling the face out and type $\frac{3}{4}$ ” in the VCB. This will set the thickness. Then press enter and the plugin will finish the extrusion. You might have to manually fix a face or two but most of the time this plugin works fine without it. Use the eraser tool and hold CTRL to smooth out the edge around the seat.



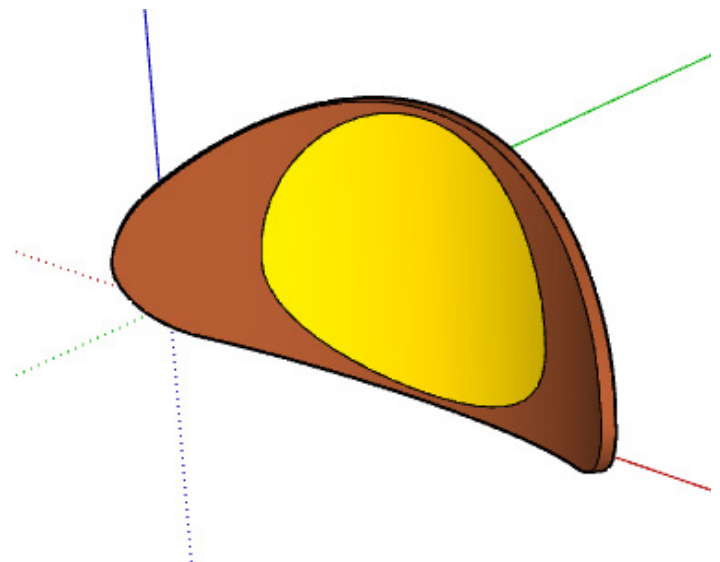
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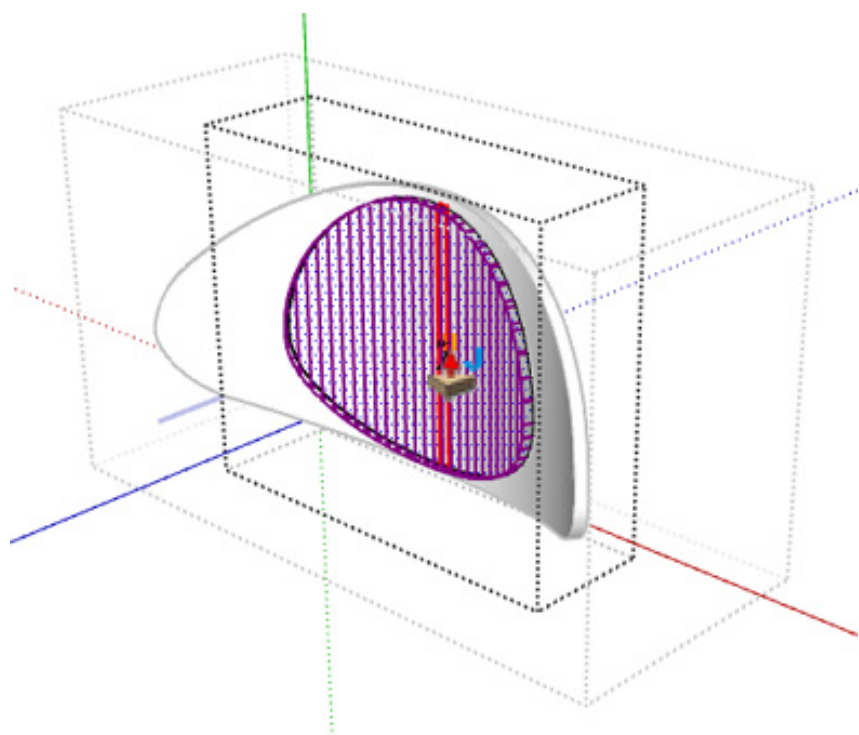
Now for the cushion. Push the remaining shape into the seat then edit the seat component. Select just the inner face of the curve and intersect with model like you did before. This will create the outline for the cushion.



Erase the unwanted geometry and you are left with just the seat and the cushion outline.

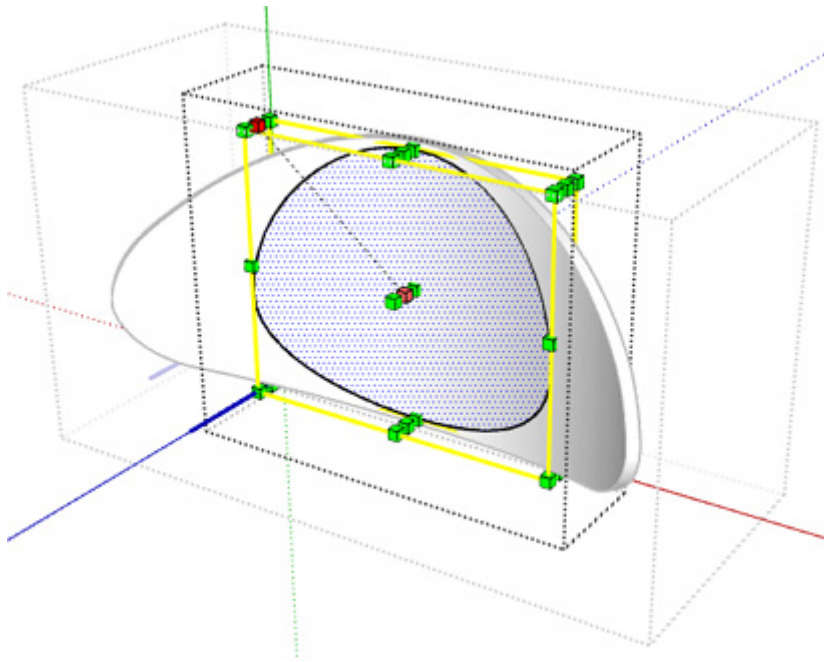


Edit the seat component, select the cushion face inside the seat and make it a component called "Seat Cushion". Now edit the seat cushion component, select the face and activate the Joint Push Pull plugin. Start to pull the face away but before finishing the thickness press the Tab key. This will bring up a dialogue box. For "Finishing options" choose "Erase original faces". This will create a thickness and erase the face you started with as well. Continue pulling the face out and type 1/8" in the VCB. This will set the thickness. Then press enter and the plugin will finish the extrusion.

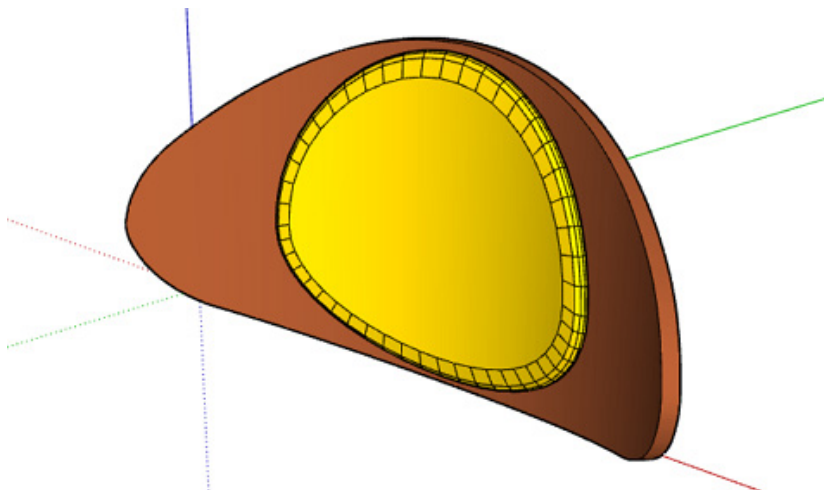


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Now select the face you just created and press the scale tool. Grab the center grip on one of the sides and then hold control. This will scale the face about the center of the selection. Move it out 1.01 then do the same thing for the top middle grip. Scale it 1.01.



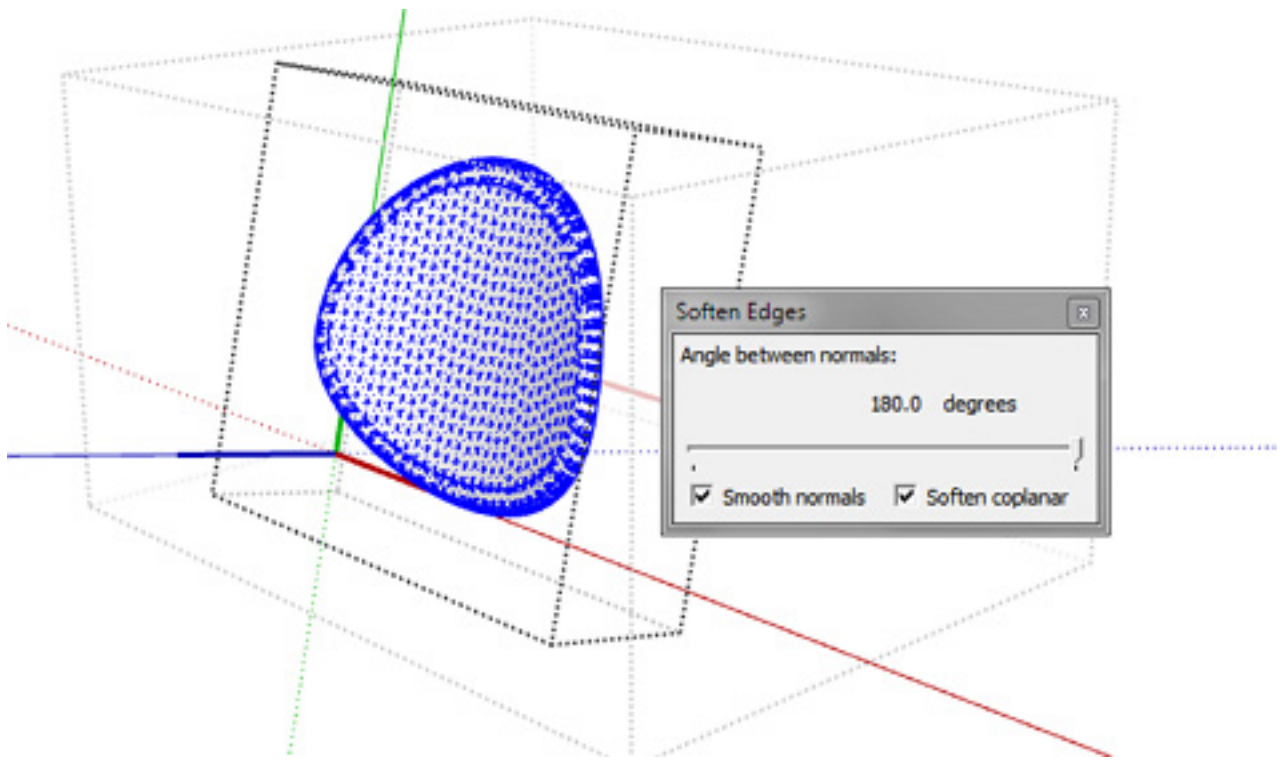
With the face still selected activate the Joint Push Pull plugin again. Pull the face out another 1/8" and leave it there.

Repeat this step again and then scale the face about the center by .99 on the side and top. You can see the cushion taking shape now.

Do this a couple more times using Joint Push Pull and the scale tool until you have the cushion shaped the way you want it.

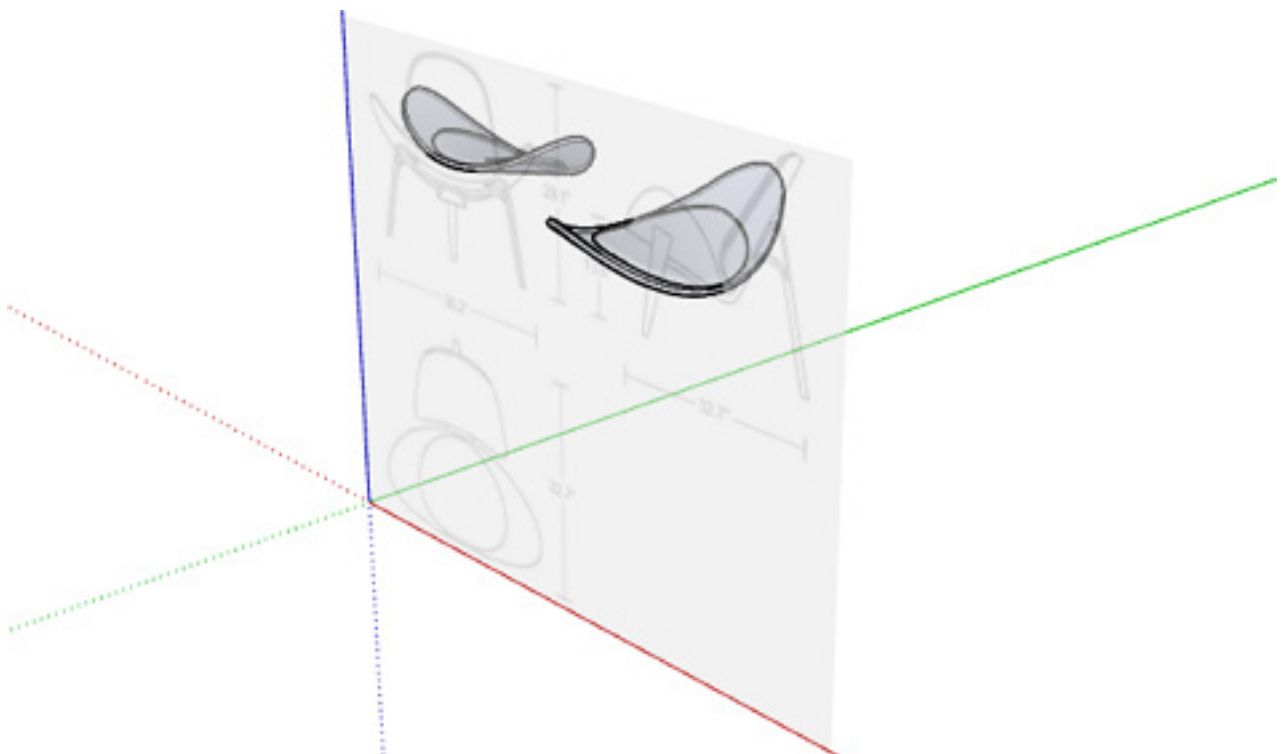
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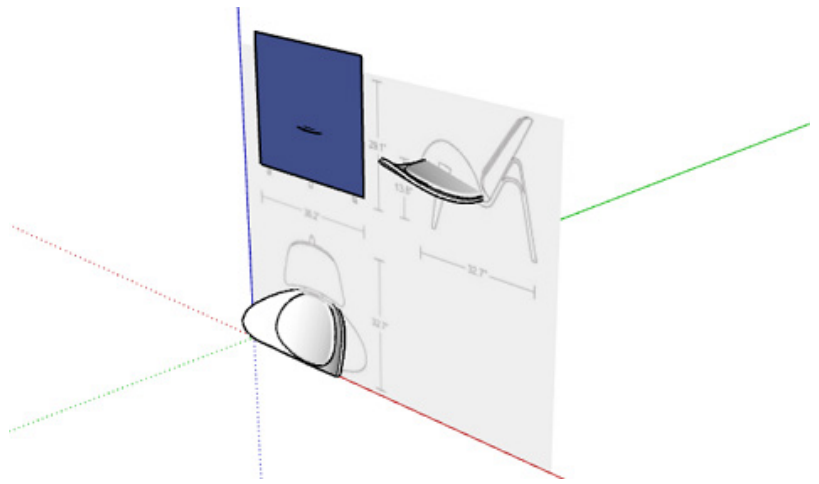


Now select all the geometry in the Seat Cushion component and soften all the edges. You can do this in one easy step by turning on the Soften Edges palette under Window/Soften Edges. Move the slider all the way to the right and check “Soften coplanar”.

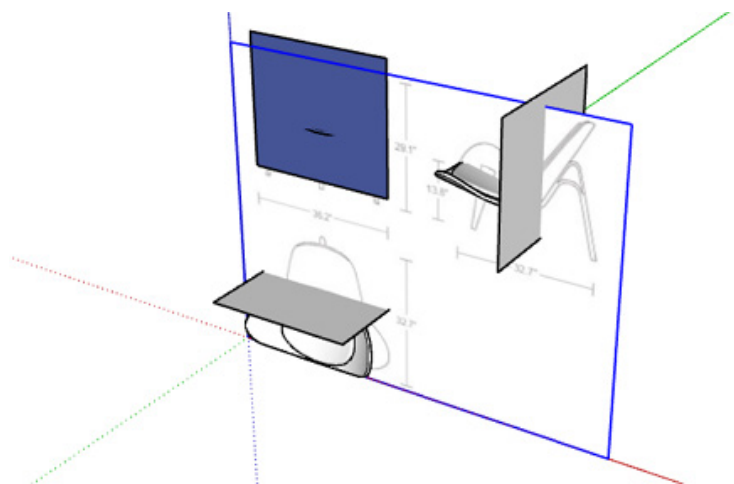
Now close the bottom component and edit the one on the top right, the side profile. Select all the geometry and rotate it from the front of the seat down. You might have to turn off the X-Ray view at this point to better see what you are doing. Match the seat angle on the side profile. All three components should have changed again. If you had just rotated the component without editing it, only one would change. You are now finished modeling the seat and seat cushion. Let’s work on the back now.



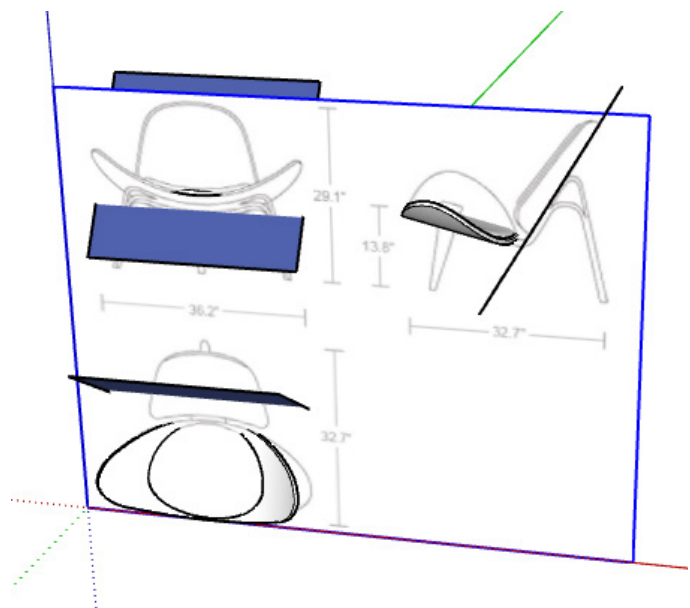
Start the back the same way you did the seat by using the reference image, clicking on the X-Ray view style and drawing a box. Go ahead now and make it a component called “Seat Back”.



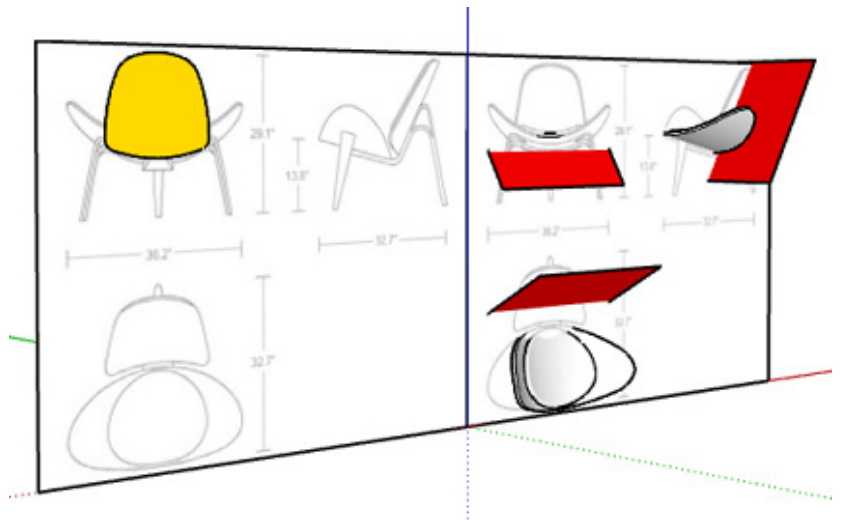
Now copy it a couple times and rotate it appropriately aligned with the other views just like you did with the seat. The top left view won't line up with the seat at this point but that is fine, we will correct that later.



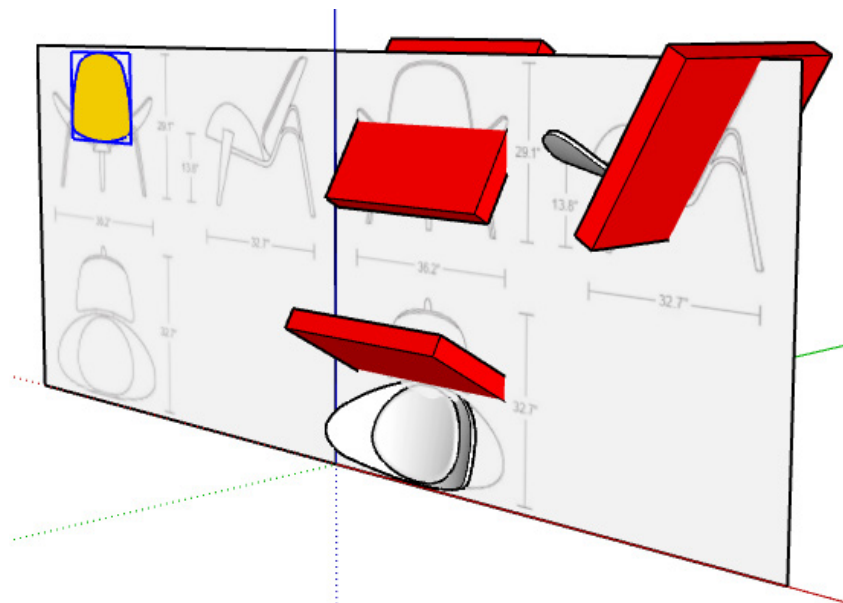
Before you draw the profile for the seat back, edit the seat back component and rotate it into place. This is backwards from the seat we did before but the angle of the back is much greater so this way will be more accurate. You may need to enlarge the box



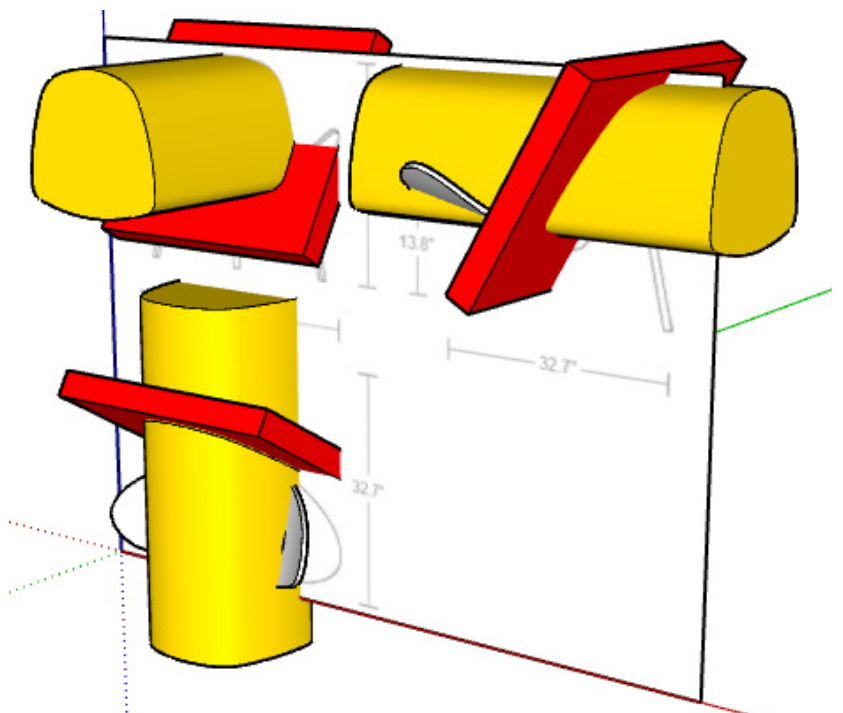
Now draw the profile using parallel projection on the reference image. You might want to copy the reference image off to the side for this as the seat and back could be in your way trying to draw. This may take some trial and error and a bit of guess work at the bottom.



Edit the seat back component then use the push/pull tool to give it the thickness of the chair back. Use the reference image in the upper right.



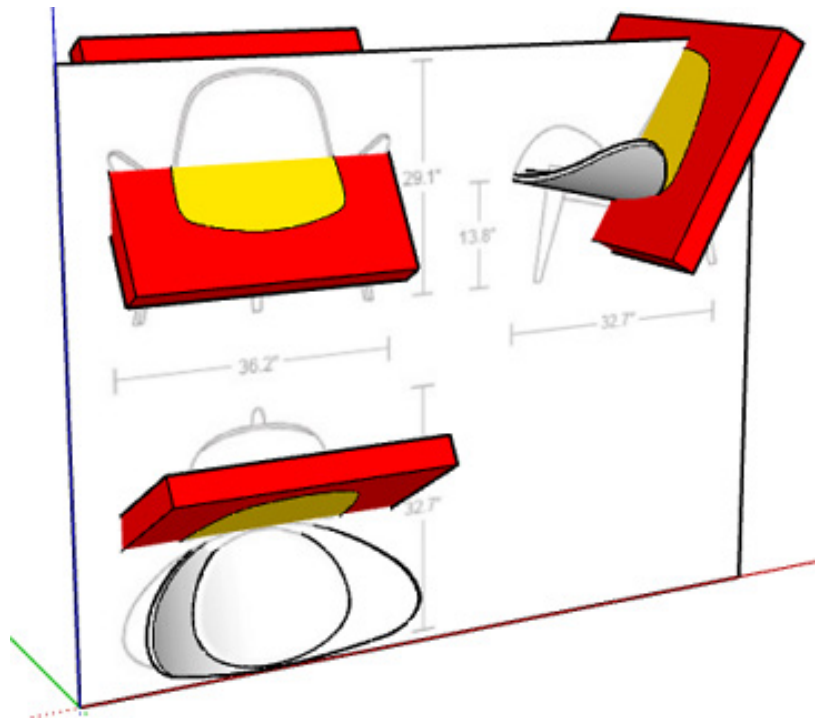
Move the profile for the chair back down in line with the seat back components. Select all of the geometry in the profile and cut the selection. Ctrl-X on the PC. Then edit the seat back component and paste the geometry into it. Ctrl-V. Push/Pull the profile through the seat back then intersect it with the front face. To intersect it only with one face select the profile you push/pulled and select the face you want to intersect. Then context click and choose Intersect Faces / With Selection. Otherwise if you do With Model you will intersect everything that face touches and in this case will create extra geometry you don't want.



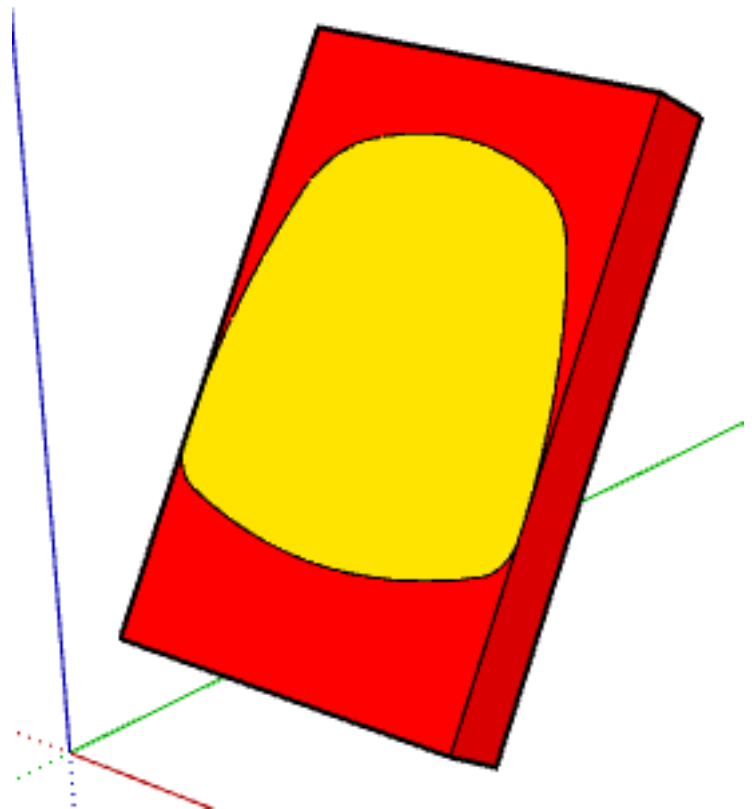
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Now erase the unwanted geometry and you are left with the profile on the front face.



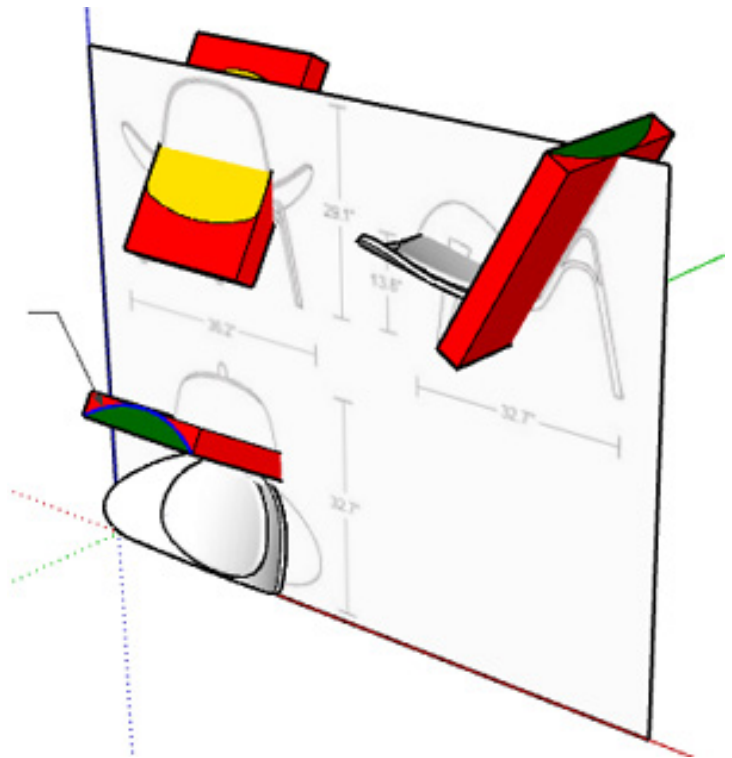
Push/Pull the sides of the seat back until they touch the sides of the profile. This is important that you get the exact edge or vertex on the side, otherwise you will get an odd result later.



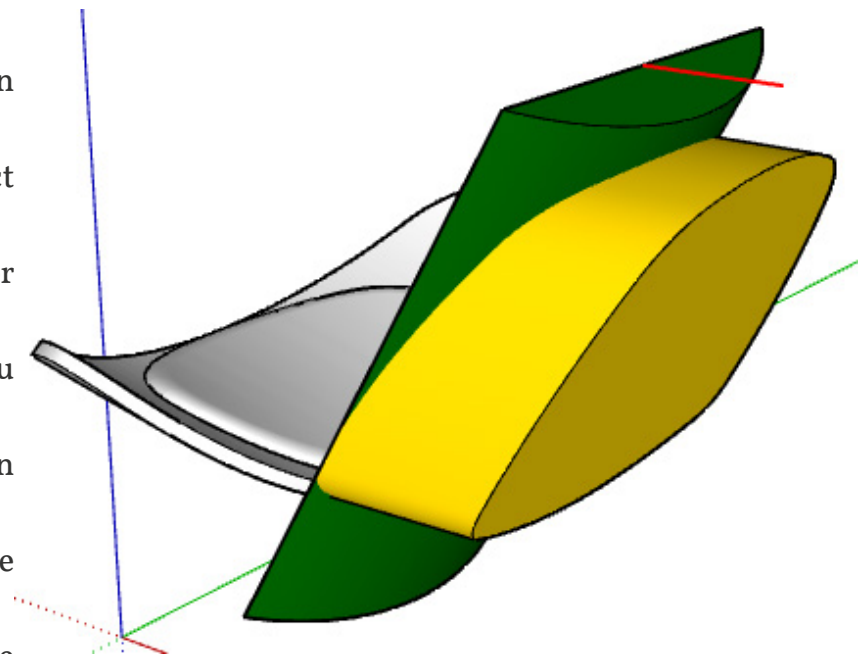
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On the top of the box create an arc from the corners and the bulge will be the entire depth of the rectangle. Remember we set the depth and width already so this is an easy arc to line up.



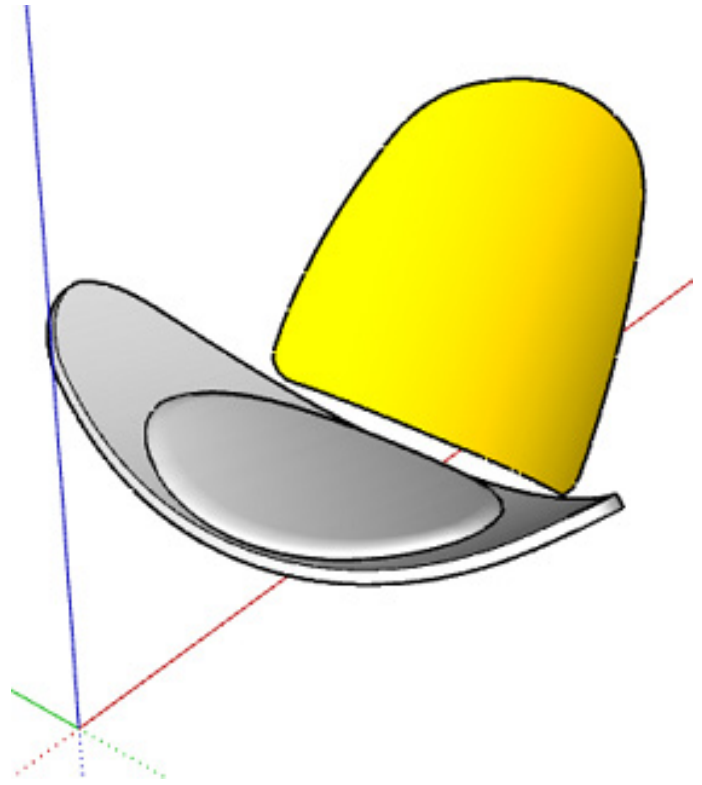
Now push/pull the back arc to the bottom of the box. Draw a reference line “on axis” from the back face. Then using the Joint Push Pull plugin select the profile face and click the Vector Push Pull tool. This is critical as you want the back profile to line up “on axis”. Click one end of the reference line then drag along it to finish the vector push pull. Make sure it goes all the way through the back.



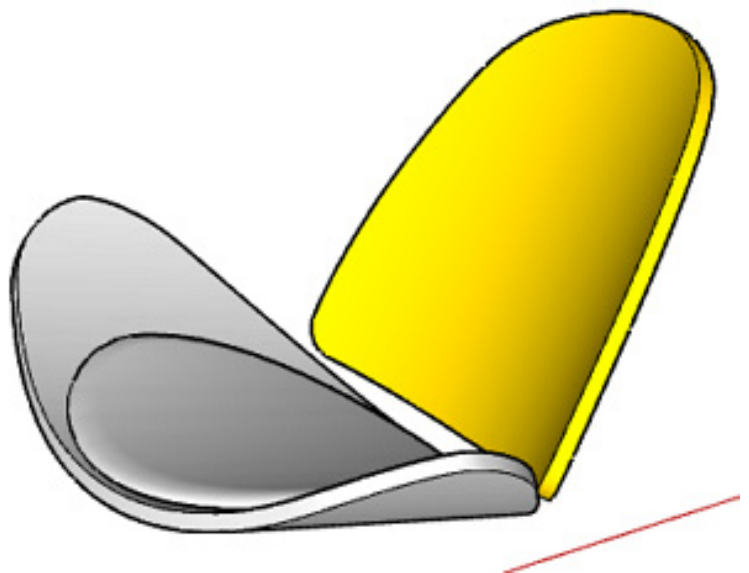
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Then select it all and “Intersect With Selection” and erase the unwanted geometry.



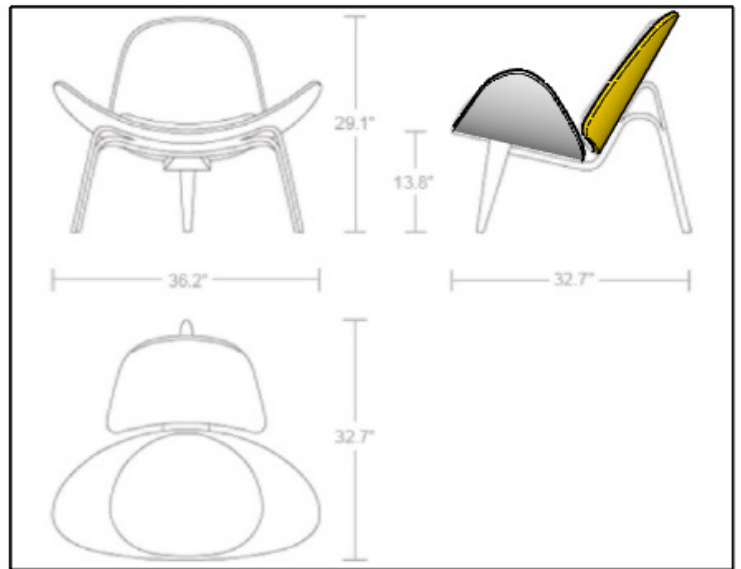
Now thicken the seat with the Joint Push Pull plugin. Thicken it by $\frac{3}{4}$ " like we did the seat. You might get a couple of reversed faces so take some time to do any cleanup necessary. If you were doing less polygons on the arcs there would be less to fix but the model would not be as smooth. Then soften/smooth the faces.



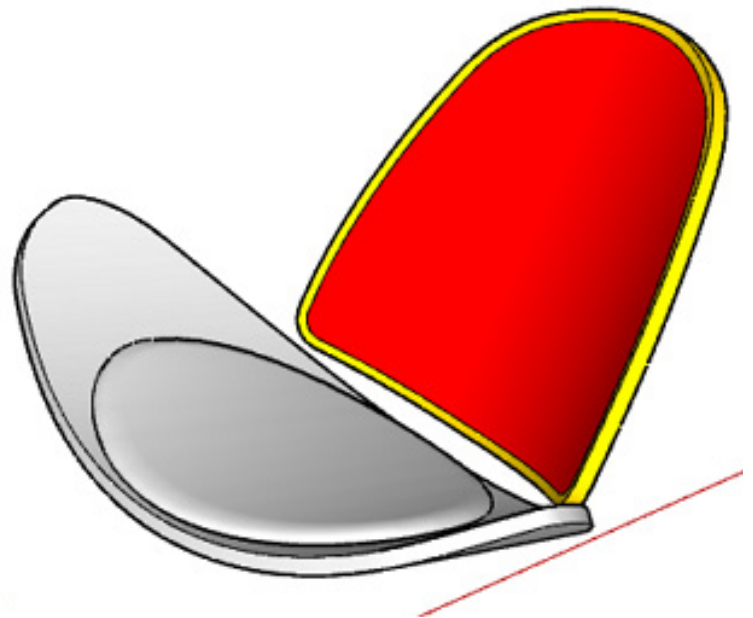
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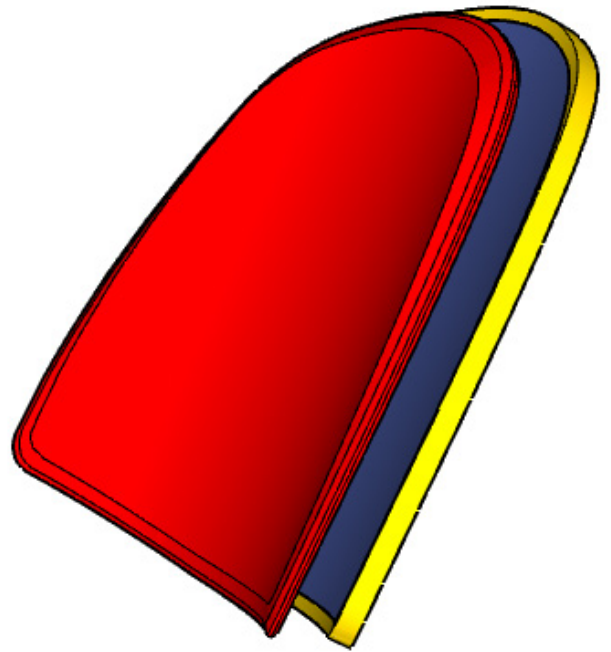
At this point if you look at the other two sets of components, the top and front they don't line up with each other. Go ahead and delete them keeping only the top right components. After we build the cushion for the seat back we will copy and align the front one to model the legs properly.



For the seat back cushion your profile will be inset the same shape as the seat back. To do this on a curved surface use the Tools On Surface plugin. Select the seat back face and click "Draw Offset Contours On Surface". Click the face again and start pulling inward. Type ½" into the VCB and press Enter.



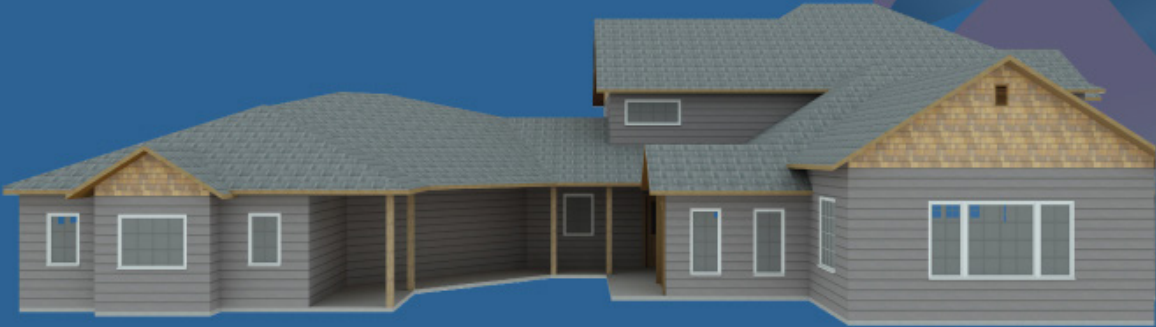
For the cushion now follow the same steps as with the seat; make the face you just offset a component, Joint Push Pull out 1/8" then scale the surface. Repeat until you have the shape you want then smooth. Again, with this many polygons you might need to do a bit of cleaning up.



You can [follow the remaining part of this tutorial](#) on our Tutorial Section where Eric show you how to complete the legs. You can also purchase Eric's [Character Modeling Tutorial in our bookstore](#) which shows you the techniques used to create complex forms.

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Make Fur = Make Fun



Make Fur by Tak2hata is a plugin that many people use to provide realism when creating grass or vegetation. However it can also be used as “hairy” textures such as carpets and tapestries to achieve a more realistic effect in a rendering.

In this scene I used Fur to create the plant and the rug using different parameters. These are the parameters I used to create the plant choosing the Arch option to simulate leaf fall.

Type :	Arch	force(X) :	0"
Density(Num/sq.yd) :	500	force(Y) :	0"
MaxNumber(/Face) :	200	force(Z) :	-2"
Length(0") :	24"	Make by Component :	no
RootWidth(0") :	1"	Units :	imperial
Stiffness :	20	PRESET? :	
TopJitter(%) :	100	Load Preset	
WidthJitter(%) :	100	Save NewPreset	
StiffnessJitter(%) :	80	Assign to Material	
Divide :	3	Get From Material	
Valid Distance(0") :	0"	Preview Fur	
direction(X) :	2	Make Fur	
direction(Y) :	2		
direction(Z) :	6		

“...achieve a more realistic effect in rendering...”

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These are the parameters I used for the tassels in the rug :

Type :	Rectangul	force(X) :	0"
Density(Num/sq.yd) :	5000	force(Y) :	0"
MaxNumber(/Face) :	2000	force(Z) :	~ 2"
Length(0") :	1"		
RootWidth(0") :	1/4"		
Stiffness :	20	Make by Component :	no
TopJitter(%) :	20	Units :	imperial
WidthJitter(%) :	20	PRESET? :	
StiffnessJitter(%) :	20		
Divide :	3		
Valid Distance(0") :	0"		
direction(X) :	0"		
direction(Y) :	0"		
direction(Z) :	~ 2"		

Load Preset

Save NewPreset

Assign to Material

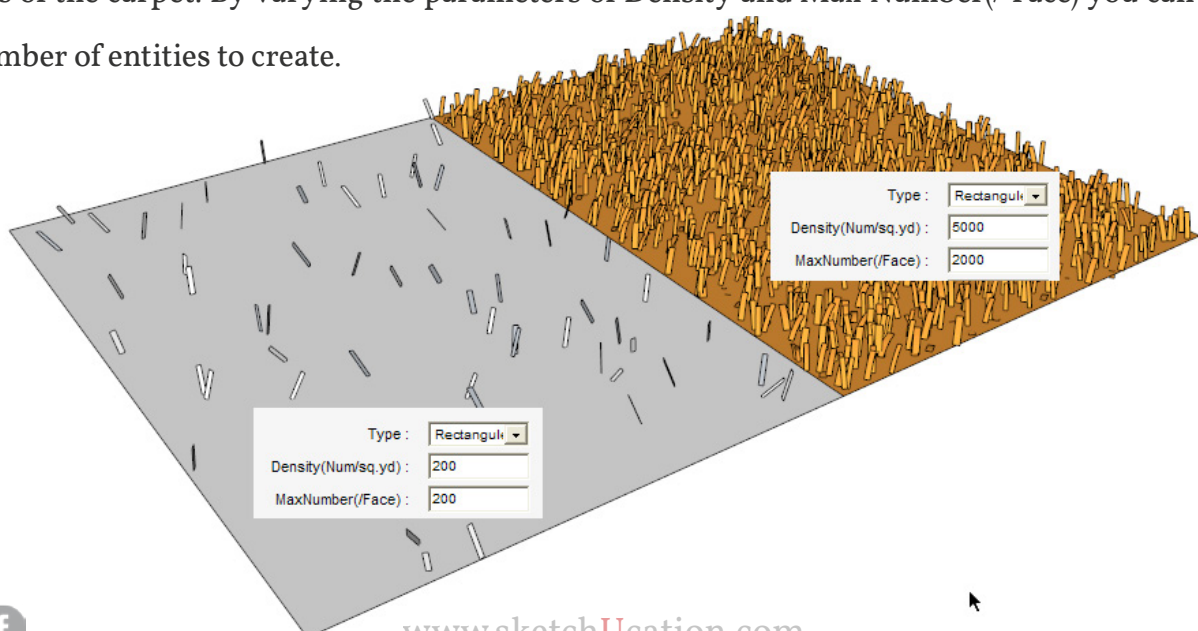
Get From Material

Preview Fur

Make Fur

Make Fur creates groups that can be painted with any color or material. Applying the same texture to the face on which it is generated helps to avoid having to create a very dense mesh and keep the face count low. It can also be used multiple times on the same surface controlling in this way the increment of the density. Using it is very simple: you select a face, activate Fur, enter parameter values and finally click on Make Fur.

Although I am very far of being an expert in using it, thanks to the Undo tool I could experience multiple results. The type "Rectangular" "Leaf" and "Arch" are my favorites. Arch and Leaf seemed more appropriate to create vegetation while Rectangular provided me a more dense texture to simulate the threads of the carpet. By varying the parameters of Density and Max Number(/ Face) you can control the number of entities to create.



- Length and Rootwidth control the size of drawing entities. This is great feature because you can create rugs and carpets with fibers of different thickness. Rootwidth confused me at first because I thought he meant the width at the root but then I realized it referred to the dimension of the widest part. So for the case of plant leaves I enter a greater value than for the case of carpet fibers.
- Stiffness is self explanatory although it was a trial and error process which was more convenient to use.
- Top Jitter and Stiff Jitter randomize orientation and bending of the entities
- Direction (X, Y and Z) controls the overall orientation and Force (X, Y and Z) let you bend the entities as if the wind was blowing or in the case of a tapestry on the wall could simulate gravity. You can also pick a texture and the group will inherit the material.



Fur can also serve to create thatched roofs and have a margarita in the shade!



Adriana Granados is an independent writer and author of [Sketchup for Interior Design and Space Planning](#), the first books in Sketchup dedicated to Interior Design. She has concentrated on the application of information and communication technologies in the field of interior design and architecture.

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Kemp Productions gets animated with Shaderlight for SketchUp

Duane Kemp, director and owner of Kemp Productions / kemppro.com, has been using SketchUp since 2008. He's been rendering for a couple of years and tried most renderers on the market, but was never satisfied with the results. What Duane needed though was an affordable render plugin that could deliver high quality images and render animations.

In 2011, Duane started rendering with Shaderlight and was impressed with the image quality he could achieve. Luckily the ShaderLight team were in the midst of developing v2, which included an animation feature so Duane helped them put the new release through its paces.

We spoke to Duane about his work using Shaderlight

He said: *"Whatever the project, Kemp Productions has somehow found itself doing high poly, intricate or highly detailed models both in complexity and size. We model and render high-resolution illustrations, animated logos, landscaped architectural builds, concept builds as well as 3D operation manuals."*

"We aim for photorealism in our work as we believe that this is what transcends the talent of the 3D modeller to the artistry of the 3D visualizer. For our clients, the creation of visual reality is essential in conveying their vision successfully."

The Project

Kemp Productions was asked to develop a series of promotional materials to publicise a new development of luxury apartments. In addition to a logo, high resolution images and documentation, a new iPad compatible website would feature two 30 second films - one showing the exterior of the building within its village environment and the second, a virtual tour of the apartment revealing an amazing view of Mont Blanc and the French Alps.

check
this
out





“...we believe that this is what transcends the talent of the 3D modeller to the artistry of the 3D visualizer...”

check
this
out



In order to achieve the desired result for the setting of this new apartment complex, Kemp Productions set about modelling the actual buildings in the small town of Luins, Switzerland, entirely in SketchUp. The 'Residence Michelange' model had over 2,600,000 faces and took several months to complete.

Duane said: *"With the price-tag between 2 – 3'000'000 - CHF for each apartment , we wanted to communicate the concept of "home" in the promotional imagery we produced so that potential buyers could imagine themselves living there. The fact that all apartments sold in less than 4 1/2 months speaks volumes."*

Using Shaderlight

When preparing the model to render, Duane relied heavily on creating realistic surface textures and setting the right lighting to achieve the desired result.

He explained: *"The lighting tools available in Shaderlight provide a simple way to achieve the natural, warm and inviting finish we wanted on both exterior and interior scenes. Using a combination of artificial and image-based lighting we were able to bring each scene to life."*



With familiarity comes speed and, after using Shaderlight for a short time, Duane found he could fine-tune each render setup with ease to produce the level of photorealism he wanted.

Duane said *“Compared to some of the more complex renderers, Shaderlight makes rendering a scene in a real life environment possible with little effort. From its simple toolset of user-friendly options that made rapid work of setting surface reflectivity and bump mapping, to the clever feature that maintains render settings as you move through edits, the software has a number of time saving features that proved indispensable for Kemp Productions”*

He continued *“I’m sure we could have got to the end of the project with other renderers but not, in our opinion, with the same quality and ease of use as Shaderlight.”*

The images rendered by Kemp Productions for this project are [available to view here](#).

Highlighting the quality Duane has managed to achieve with his Shaderlight renders, one of the images won third place in the Shaderlight render contest held earlier this year.

Anatomy of a 3D Build using SketchUp

Kemp Productions delivered a selection of 3D images, graphics and video content to its client - the results of one year of modelling, collaboration with the architects and rendering animations for Residence Michaelange.

To offer a step-by-step progressive tour that traverses the enormity of the job, Kemp Productions has created the following video that [dissects the project taking SketchUp users through ‘The anatomy of a 3D build.’](#)

...more about Shaderlight

Shaderlight is an interactive intuitive rendering plugin for SketchUp. To find out more and to try it for yourself, visit www.shaderlight.com or If you’re looking to render animations or high resolution stills and just don’t have the hardware, why not [try Shaderlight Cloud Rendering](#).





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Adonit Jot Touch - Pressure Sensitivity

If you are lucky enough to use an iPad for sketching I imagine you have wished your stylus was a pressure sensitive device. With the recent launch of the Adonit Jot Touch your wish could come true. I recently tested the Touch and I am very impressed with this device.

The packaging / instructions are excellent. Even the instructions have artwork on the back drawn with the Touch. There is also a replacement nib and disk included. The new Adonit Touch has much the same quality feel as the original Adonit Jot which I have been using for some time but a lot has changed under the skin of the Touch.



The new Touch has a 10 hour battery that needs to be charged and this is achieved via a neat magnetic USB dongle. It is just a matter of dropping the Touch into the dongle and it begins charging.

Like a Wacom stylus, the Touch has two pronounced buttons for app-specific shortcuts for switching to eraser, minimise / maximise. Between these buttons there is a flush middle button which pairs and switches power on and off. Holding the middle button down for a short period either switches on/off and longer press takes it into pairing mode. A green / red LED flashes to indicate pairing is achieved. At this stage its just a case of going to Settings > Bluetooth and tapping on the Jot Touch and entering 0000 pin.



Adonit has incorporated everything app makers need into their own SDK. The Touch will work just like any other stylus with regular apps but when developers incorporate the SDK to their apps the magic pressure sensitivity starts to work.

“...the Touch quickly becomes second nature...”

Check
this
out



Over Bluetooth, the Touch relays pressure information, 256 microscopic levels, to applications like Procreate, Sketchbook, Clibe, PDF Pen and others. The app translates this information into different sizes and opacities of 'ink' and 'paint' dispersal. The harder you press, the more that shows, going from a thin faint line to a thick full brush stroke. I would add that a little practice is required to get the expected results but the Touch quickly become second nature.



The Touch's tip feels almost exactly like that of a real pen (with the exception of the small plastic disc) due to the new sound dampening tip which simulates the natural contact (feel) of writing / drawing with a pen on paper. The combination of the iPad 2 or New iPad with an Adonit Touch will change the way designers knock out their quick freehand sketches and in the case of artists, their creative art. At \$99 the Touch is a steal! [Check it out.](#)

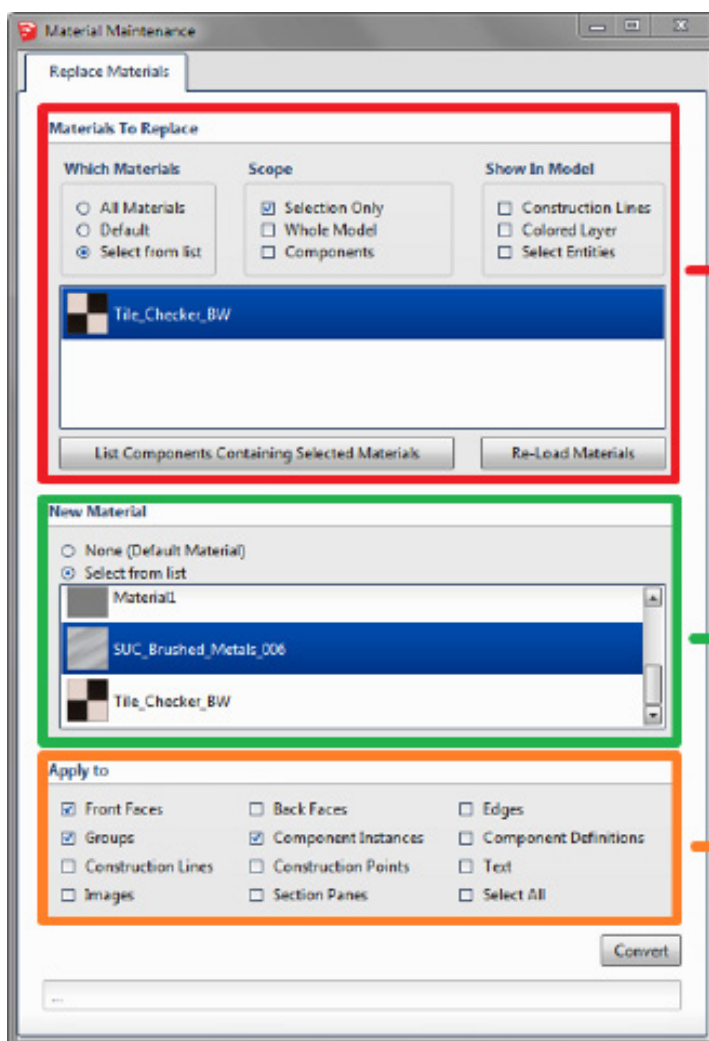
An advertisement for BuildEdge PLAN. At the top left is a logo consisting of a sphere with a blue 'X' and orange segments. To its right, the text 'BuildEdge' is in white with a registered trademark symbol, and 'PLAN' is in orange below it. The central image is a 3D architectural rendering of a large, multi-story house with a complex roofline, grey siding, and white window frames. In the bottom right corner, a hand is shown holding a stylus, drawing a blue line on a dark, abstract surface. At the bottom, the text 'Your SketchUp Roof Engine' is written in white, with 'SketchUp' in orange. Below this, in smaller white capital letters, is 'AVAILABLE FOR WINDOWS OR MAC'. In the bottom left corner, there is a small handwritten-style note that says 'Check this out' with an arrow pointing towards the social media icons.



Material Maintenance v2.1

Late last month SketchUcation member MyHand dropped an excellent plugin, that tackles the often laborious task of material replacement in SketchUp, called [Material Maintenance](#). Using materials in SketchUp can quickly become a dark art when you are dealing with components, groups and layers not to mention the number of materials you may have in your model at any one time.

With Material Maintenance this is now completely streamlined under one very powerful tool. Below you can see the dialog box that is displayed when you activate the tool.



Replacement area is where you load your material to be replaced

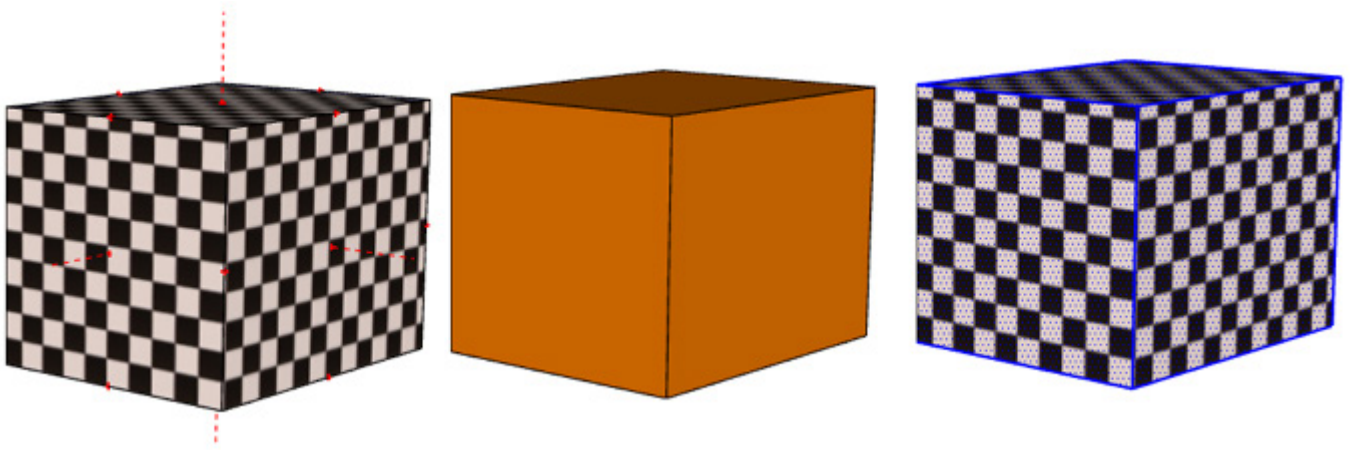
Material area lists the materials applied to your model

Application area dictates how to apply the material

There are 3 primary areas which allow for a huge amount of tweaking. The top zone, Material to Replace, is where you can target your materials based on selection, model or component along with highlight these materials using construction lines, selections or layers.

check this out





The really clever part of Colored Layer is that it will temporarily create a new layer called `_FINDER_` and assign the object to that layer. This means in very complex models you can easily concentrate on where you need to make changes. As soon as you toggle Color Layer off the object will return to its original layer.

The centre zone, New Material, contains your applied materials and is used to swap materials out based on what you select in the top zone.

The bottom zone, Apply To, is where you get to really fine tune your material replacements. Whether you want to completely swap materials on every element or just target components you can tailor the replacement very precisely without having to dig through nested elements.

You can [watch this video](#) below to see an overview of what Material Maintenance is capable of.

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Twilight Render

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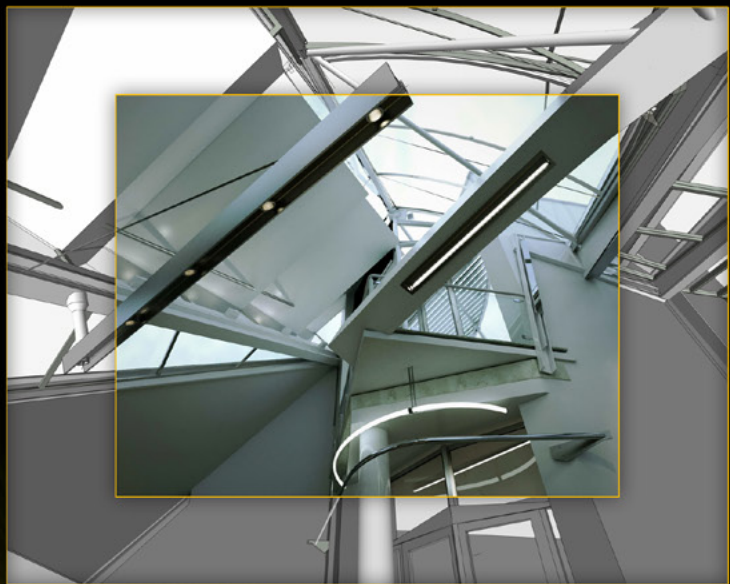
\$99

"First of all I want to shout THANK YOU to everyone who gave life to Twilight.
This software is pretty much what I had in mind for rendering inside SketchUp, I am amazed!"
~Shura, Stage and Club Lighting Designer, Germany

"I'm a very happy customer indeed!"
~Jerome Zaavy, Furniture Designer, Quebec, Canada

"When I found Twilight it was like a breath of fresh air. It is easy to use & powerful."
~Joey Maze, Landscape Construction, New York

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Freebies & more....

There's been a bit of surge in the forums of late with members sharing top quality. Earlier this month the [maestro of Watercolours](#), Allan Casas, shared some excellent Ikea models - [Egon](#), [Ellan](#) and [Balser](#)

You can also purchase 33 [Lo-Poly chairs from Allan's Shop](#).



30c4 Models

Alvydas Litvinas [shared some doors](#) that will look great in any rendered scene. You can also purchase more of Alvis' [incredible models in our Model Shop](#) as well as his detailed [PDF tutorials in our Book Shop](#).



Finally, if you haven't grabbed [Oli Shea's Curved Tree Lines](#) then you need these for your ArchViz scenes. Oli also has some incredible HDRI packs and even more [high quality Tree Lines in our Texture Shop](#).





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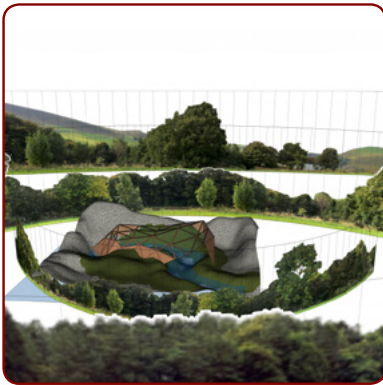


Available on the
App Store

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Halo around transparent .png files

Learn how to [remove .png halos from your SketchUp 2D exports](#) and make a SketchUp Style that makes sure you never have to dig through the option again!

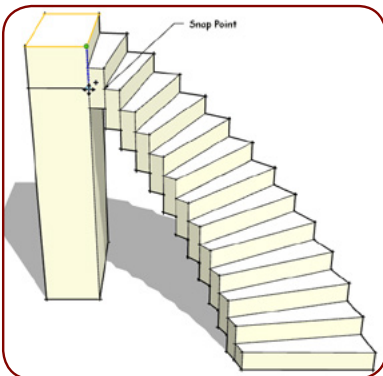


Model a Palm tree with Vertex Tools

Wield [Thomthom's Vertex Tools](#) like a boss and learn to make your own Palm Trees.

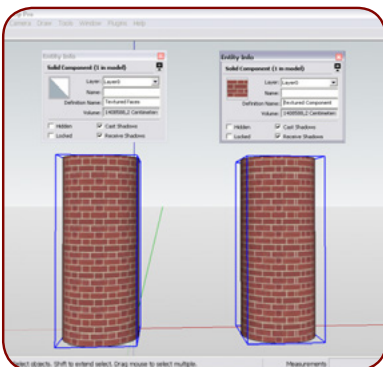
[Part 1 - The Trunk](#)

[Part 2 - The Leaves](#)



Spiral staircase from 2D plans

Learn how to [make a spiralling stairs](#) when you have no CAD files only an image.



In and outs of texturing in SketchUp

Tip and tricks when it comes to [understanding the Paint Bucket](#) tool and components.



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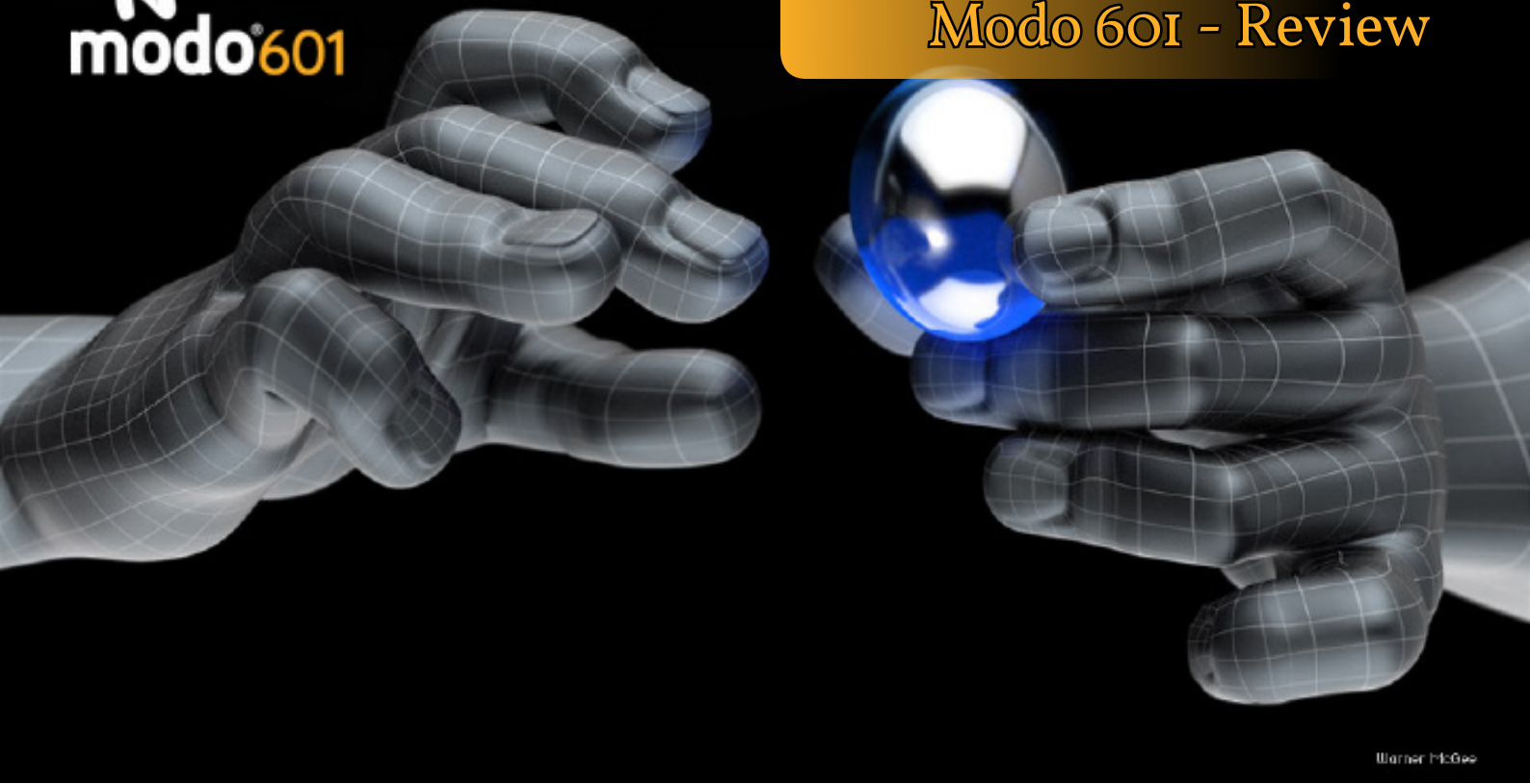
Image rendered by David Harris. Winner of Shaderlight's render contest 2012

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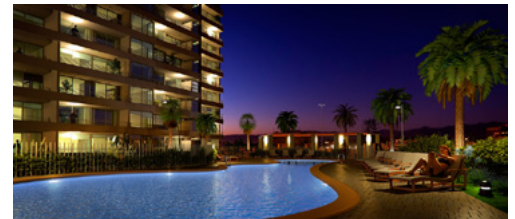


Warner McGee

When a user manual of over 1,800 pages is unfurled in front of you it is a natural reaction to run for the hills. For nearly 2 months I poured over every feature, function and doodad in Modo 601 and I am still returning to the manual on a daily basis. This is not a failing in Modo it is an absolute necessity if you really want to raise your 3D game to the next level.

No amount of text can do justice to what lies under the hood in Modo. It's deep....very deep! In fact it requires an insane level of dedication to learn every aspect. But it is a true next-gen 3D application that brings modeling, texturing, rendering, animation, dynamics and volumes all under one roof.

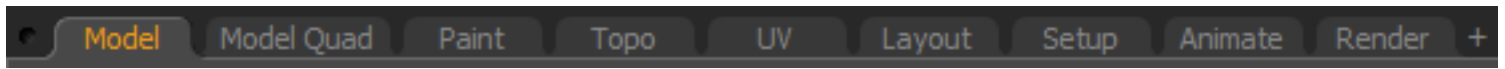
Imagine SketchUp, Thea, Cinema4D, Lumion and Blender blended together and mixed with Photoshop and you begin to see why Modo is an exciting tool in any 3D pipeline.



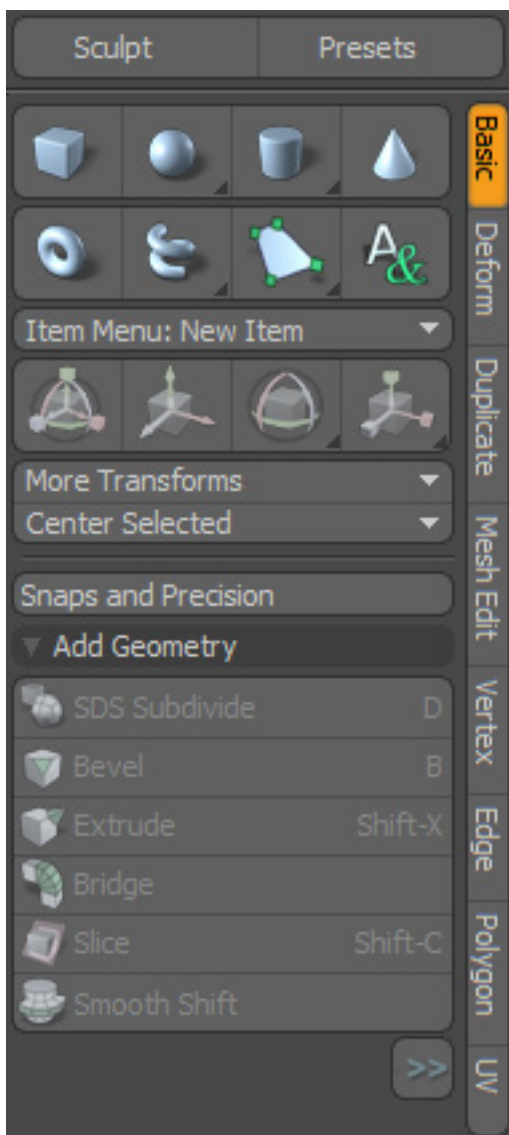
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Modo's UI is, at first, slightly intimidating. This is especially true if you have spent most of your time cosied up with SketchUp. But this is akin to comparing apple to pears. Modo's layout is tailored around workflow. You are never 2 or 3 clicks from the tool you need.



Across the top are these 9 tabs that allow you to transition from different layouts and workflows with a single click. So if you want to UV map after modeling it changes the workspace and toolset instantly. You can then quickly transition to rendering and have all the necessary tools and layouts require for that. It is massive timesaver in terms of workflow and output.



The actual primary tools rest on the right and these use the same tabbed principle. Here is a typical modeling toolset with the generic primitives available to begin with. But as you model and need to perform more complex and involved manipulations you click the required tab and a new set of tools are available.

This really unclutters the workspace and menu system and provides a very visual means of portraying tasks via icons and text.

Modo really is about looking, exploring and experimenting. Compared with SketchUp's very tactile approach to modeling Modo takes a different path. Whilst you still perform the task in a similar manner you are given a more varied approach to the end result.

‘...you are never 2 or 3 clicks from the tool you need...’

Check this out



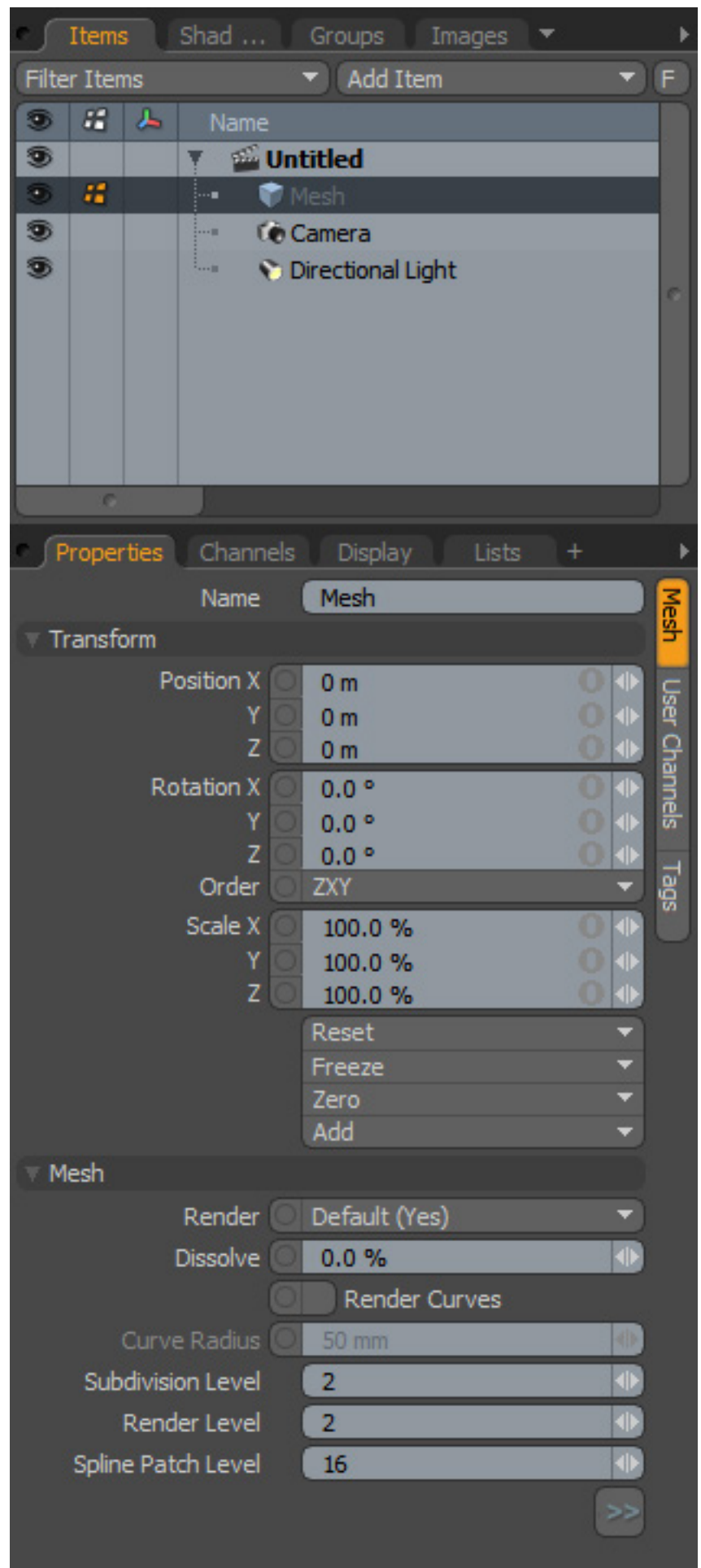
On the right is Modo's version of Outliner. The top portion lists every item in your scene and below you can control each item's properties.

This is the most involved aspect with Modo because of the level of control you are given. Cameras, meshes, materials, environments, lighting etc., are all tweaked here.

Whether you want to position a camera, adjust a texture property or control the falloff of an objects shadow you manage all this here. This area requires the most amount of dedication to really get to grips with.

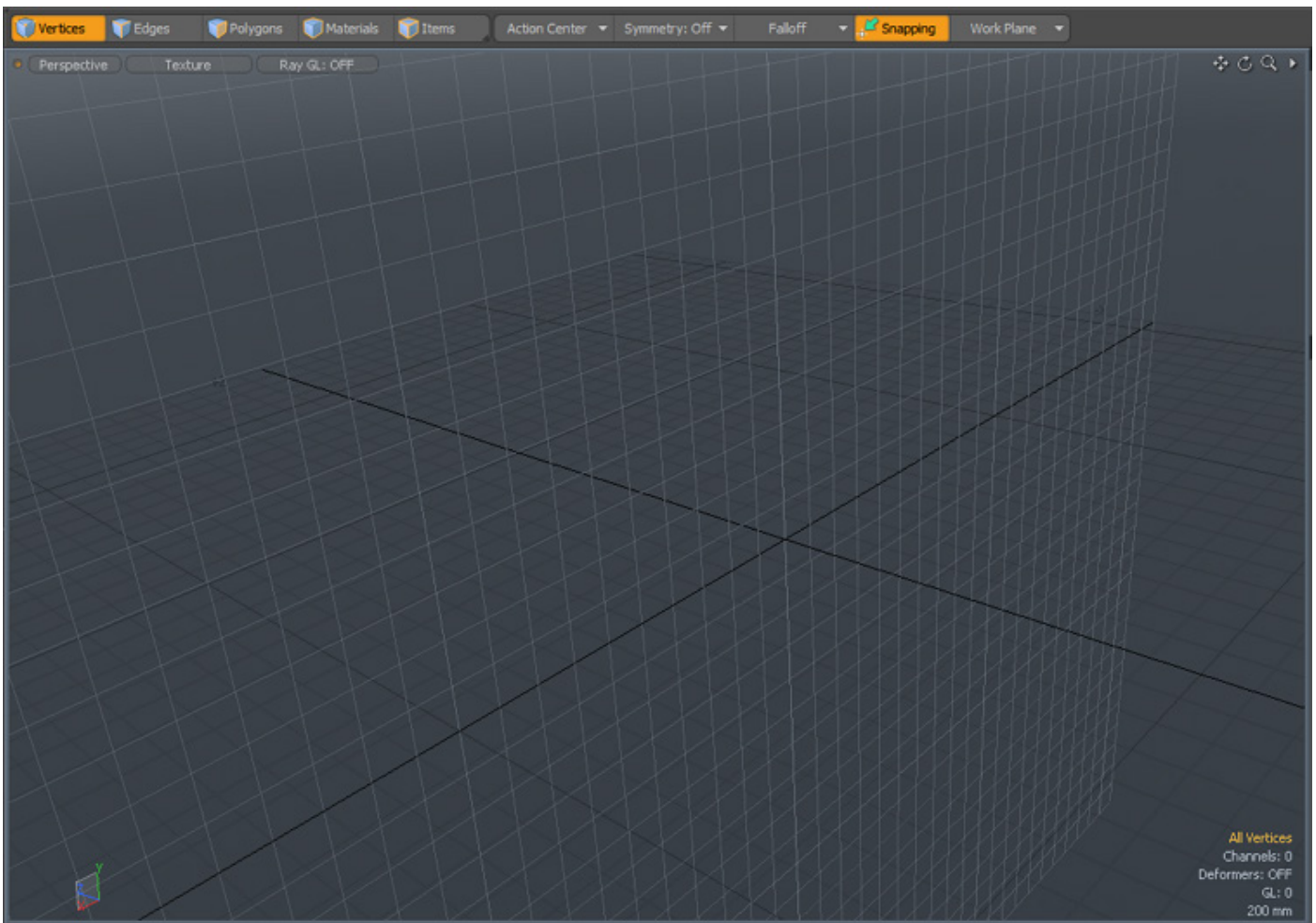
The main point here is that you are given an infinite amount of control of every item in your scenes. If you have a background in 3DS Max or Blender you will immediately identify with this type of scene management.

Some of the more involved aspects are well documented in the user manual and on the Luxology forums.



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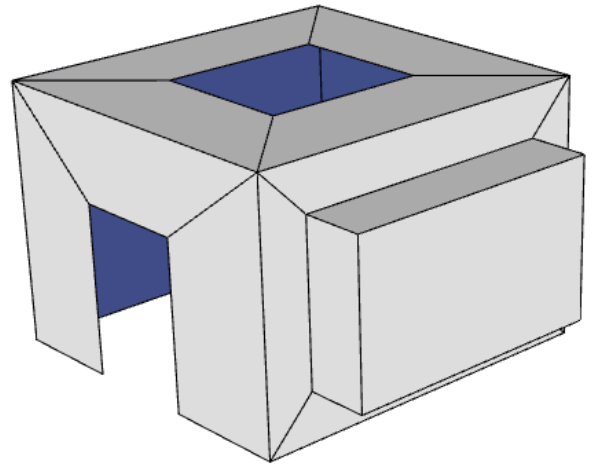


Finally, there's the workspace where the magic happens. You'll immediately notice the ghosted grid which is called the Work Plane. This is probably the most important part of Modo's modeling approach because drawing in 3D on a 2D screen is unnatural. Many applications resolve this using 4 viewports for Front, Top, Side and Perspective. Modo's Work Plane offers the same functions while allowing you to remain in the 3D workspace and focused on one viewport.

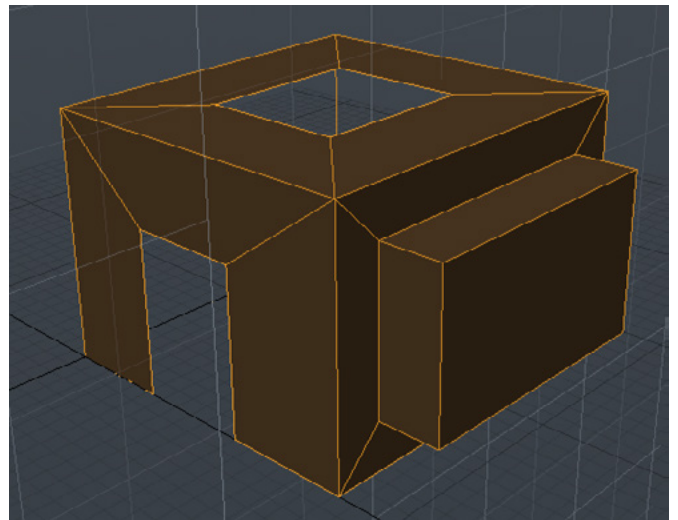
In essence, it prevents the users placing geometry arbitrarily off in the distance by always snapping to the Work Plane. You can also set the Work Plane to snap to edges, polygons or positions which makes it a very flexible and versatile tool which makes the need for modeling with 4 viewports redundant.

Coupled with the Work Plane is the Action Centre which also plays a major role in modeling. Everything in Modo is manipulated via Gizmos - Moving, Scaling and Rotating - and the Action Centre allows you to control how these Gizmos are affecting the geometry you manipulate. Need to position the Gizmo to align to a polygon's centre, world axis, screen etc., it is all available via the Action Centre.

So how does Modo play with SketchUp models? Firstly, Modo doesn't import .SKP format so you need to export. I found .FBX and .OBJ exports from SketchUp imported in Modo with not too many issues other than texture maps and triangulation. Modo does have a very clever mesh cleanup tool that make light work of fixing things.



There are some plugins that allow direct import of .SKP into Modo but I didn't test these. The main thing to consider here is that to achieve the best result it is best to perform all modeling in Modo. If you do need to have some type of SketchUp/Modo workflow then there are certain rules to adhere to that make the process seamless.



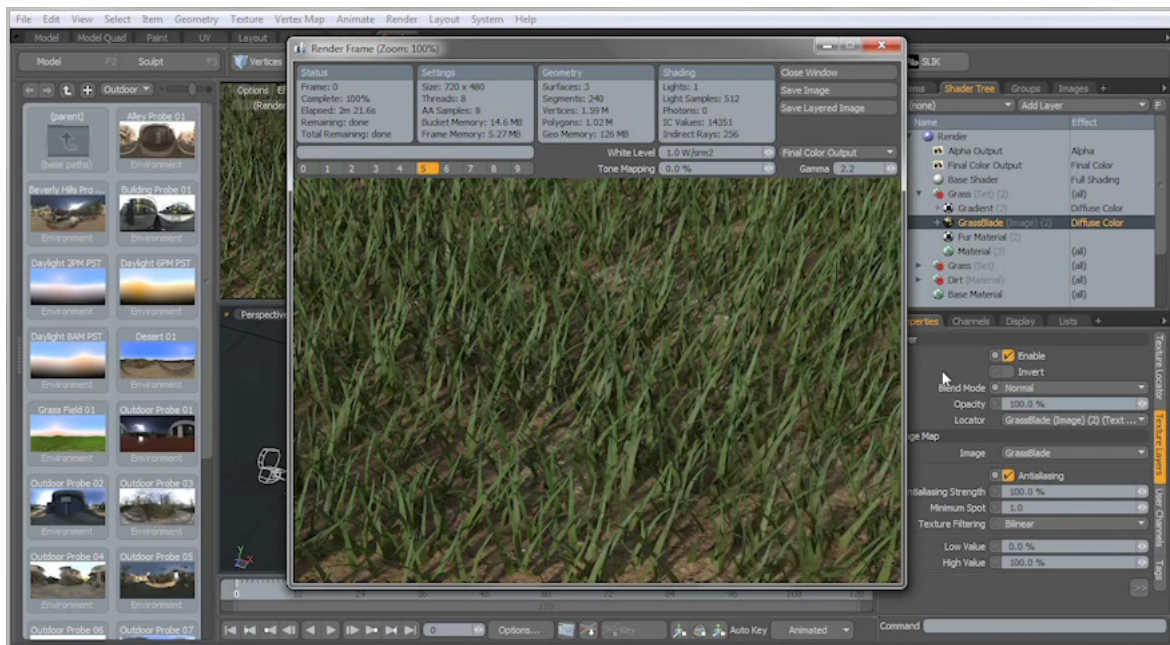
- Make all faces in SketchUp quads (No n-gons)
- Work with groups/components to separate meshes
- Use SketchUp layers to create separate meshes in Modo
- Export units in meters

‘...versatile tool which makes the need for modeling with 4 viewports redundant...’

By and large the you can quite easily integrate both applications into your workflow.

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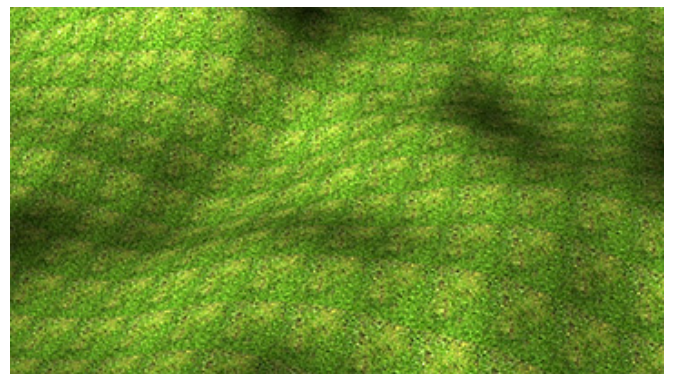


Where Modo begins to shine is when you hit the hi-poly count. It has heaps of features that make working on poly heavy scenes very fluid. Whether you want to populate a scene with tens, hundreds or even thousands of X-Frog trees or create that perfect manicured lawn with grass you can do this using Modo's instancing and fur tools.

There is also a Replicator Tool that allows you to randomly array any amount of vegetation and rocks in your scene using only a few "proxy" objects. You can randomly scale and rotate each object for a very natural scattered effect.



New in Modo 60i is the Texture Replicator which solves the repeating pattern or tiling effect you get when viewing seamless patterns from a distance. The Texture Replicator procedurally clones a texture onto a surface while adding some randomization to the texture.



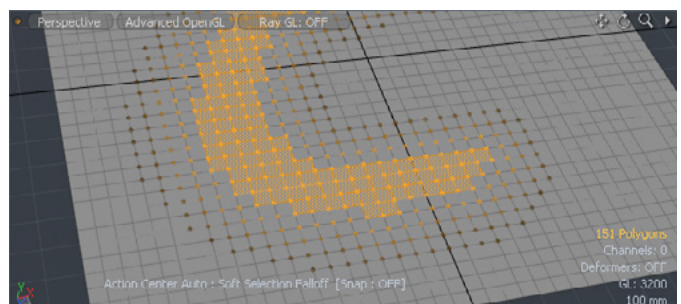
As you can see the results are impressive and setup is pretty painless.

Overall Modo 601 is a beast. It delivers in every aspect from modeling to rendering to animation and contains so many features that no amount of pages here could cover every area. When you consider I didn't cover the sculpting, retopology, uv mapping and particle systems available you can begin to see why I consider this a next-gen 3D application.

You can currently [buy Modo at \\$717.00](#) for an Individual Licence or \$249.00 for an Educational Licence. It is really competitively priced considering what you get for your hard earned cash. One area worth noting is that Modo does need a machine with some level of grunt to make things run smoothly. You can get away with a dual core system running 512MB GPU but to really see it scream it is best to have a top end processor and GPU.

The support community on the Luxology forums are a great resource and really helpful and there is also a vibrant Extension/Plugin system available. You can find all manner of models, materials and script to further improve Modo and the video training series available on the Modo store has something for everyone.

**Modo is available for both Mac and PC.*



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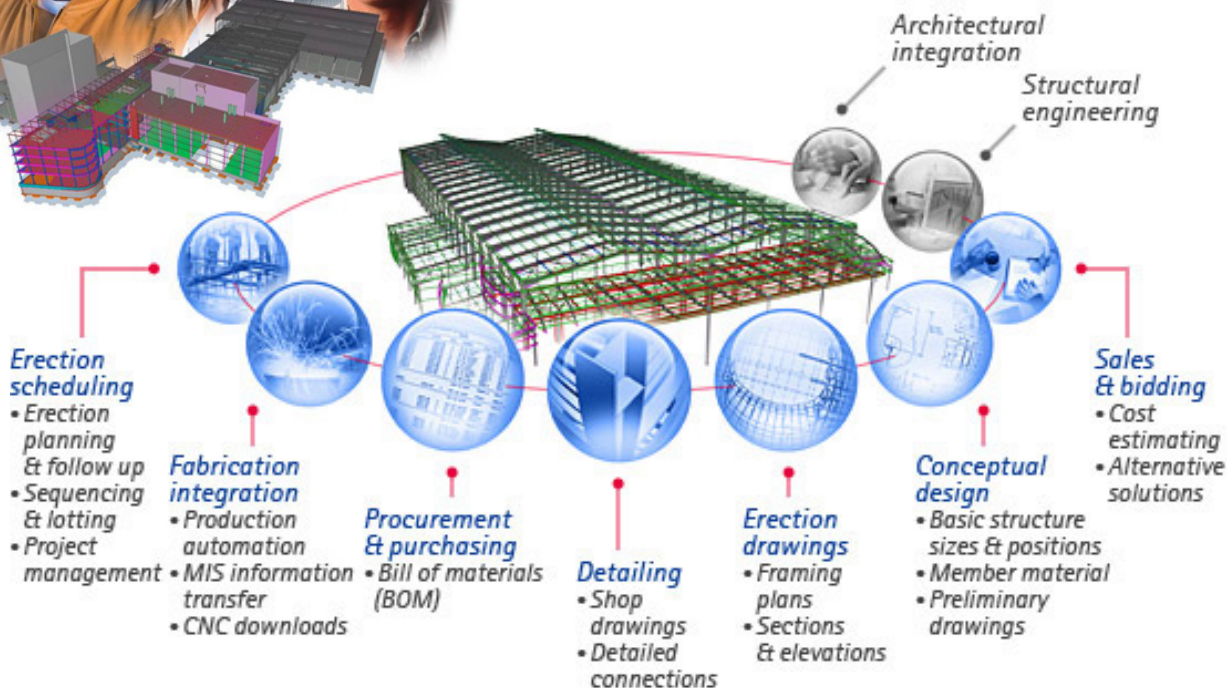
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Mike Lucey

What is BIM?



BIM or Building Information Modeling is much talked about in the building industry these days but what is it really?

Some say BIM is a type of software application or a 3D model of a building while others comment that BIM is a system process or that BIM is just an organised collection of building data. BIM is all of the above and more also new features are being added continuously to the process as they become practicable and useful in the building and ongoing maintenance processes, the latter sometimes not given the consideration it fully deserves.

I have been taking a renewed interest in BIM of recent and particularly so after Trimble's acquisition of SketchUp and its newly announced 'Trimble Buildings' platform with it's (DBO) 'Design - Build - Operate' process. It is interesting to note one of Trimble's latest acquisitions, Vico Software. This firm offers consulting services and is also a developer of 5D virtual construction software. I like the way Vico can actually work with the potential client/customer and show how their systems work in the real world at a practical hands-on level prior the potential client/customer making a decision to purchase a system.

'3D modelling applications like SketchUp Pro at the front end on a BIM platform may well be the way forward'

check this out



On looking at other recent Trimble acquisitions the Trimble Buildings platform is becoming clearer and especially how SketchUp will fit into the overall picture. To date SketchUp has made 3D modelling 'easy'. It could well be the case that it will now play a major part in making the BIM / DBO platform / system easier for its adopters!

In order to better understand BIM and how it helps in the design / build process and not to forget required ongoing building maintenance period, I will go through what I see as the main components currently involved.

When it comes to the nuts and bolts of BIM, things start to happen with the development of the 3D building model. Personally, I would like to see it start more seriously at the rough sketch stage. Maybe this is where SketchUp can come into play more in the future.

However at the moment it appears to start with the 3D model. The 3D model required for BIM has to be more than just simple geometry and some textures added to it for visualisation. An effective working BIM model consists of the virtual equivalents of the actual building components / sections used to create a building. These intelligent elements combine to form digital prototypes of the physical building with elements such as walls, columns, floors, windows and doors, stairs etc that allow the simulation of the building and



understand its behaviour before the actual construction begins.

I can imagine this process, over time, will develop to a level where the occupants can gain a full virtual experience of the building for periods of time to determine if the building is a good 'fit' for their needs / requirements. The technology is already there (and working well) to do this, it just needs to be fine tuned and brought into the BIM model / process. Maybe this will be a future acquisition for Trimble!

“...intelligent elements combine to form digital prototypes that allow the simulation of a building and understand its behaviour”

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What can a BIM model be used for?

- 3D VISUALIZATION

Of course one of the most basic uses for a (3D) BIM model is creating realistic visualisations of the planned building. The BIM model also helps in design decisions by comparing various design options / alternatives and at this stage it can be leveraged to also sell the design proposal to the client, local authorities / community and other stakeholders.

- CHANGE MANAGEMENT

Since data is stored in a central place in a BIM model, any modifications to the building design can / will be automatically updated in each view such as floor plans, sections and elevations.

This not only helps in creating the documenta-

tion faster but also provides stringent quality assurance by automatic coordination of the different views.

- BUILDING SIMULATION

BIM models contain more than just architectural data. Information about the various engineering disciplines, sustainability information and other characteristics / installations can be easily simulated and virtually tested well in advance of actual construction allowing for further fine-tuning.

- DATA MANAGEMENT

BIM also contains information that is not visually represented in the 3D model. Scheduling information, for example, clarifies the necessary manpower / skills coordination, materials, plant and anything that might effect the outcome of the project schedule particularly the 'bottom line'!

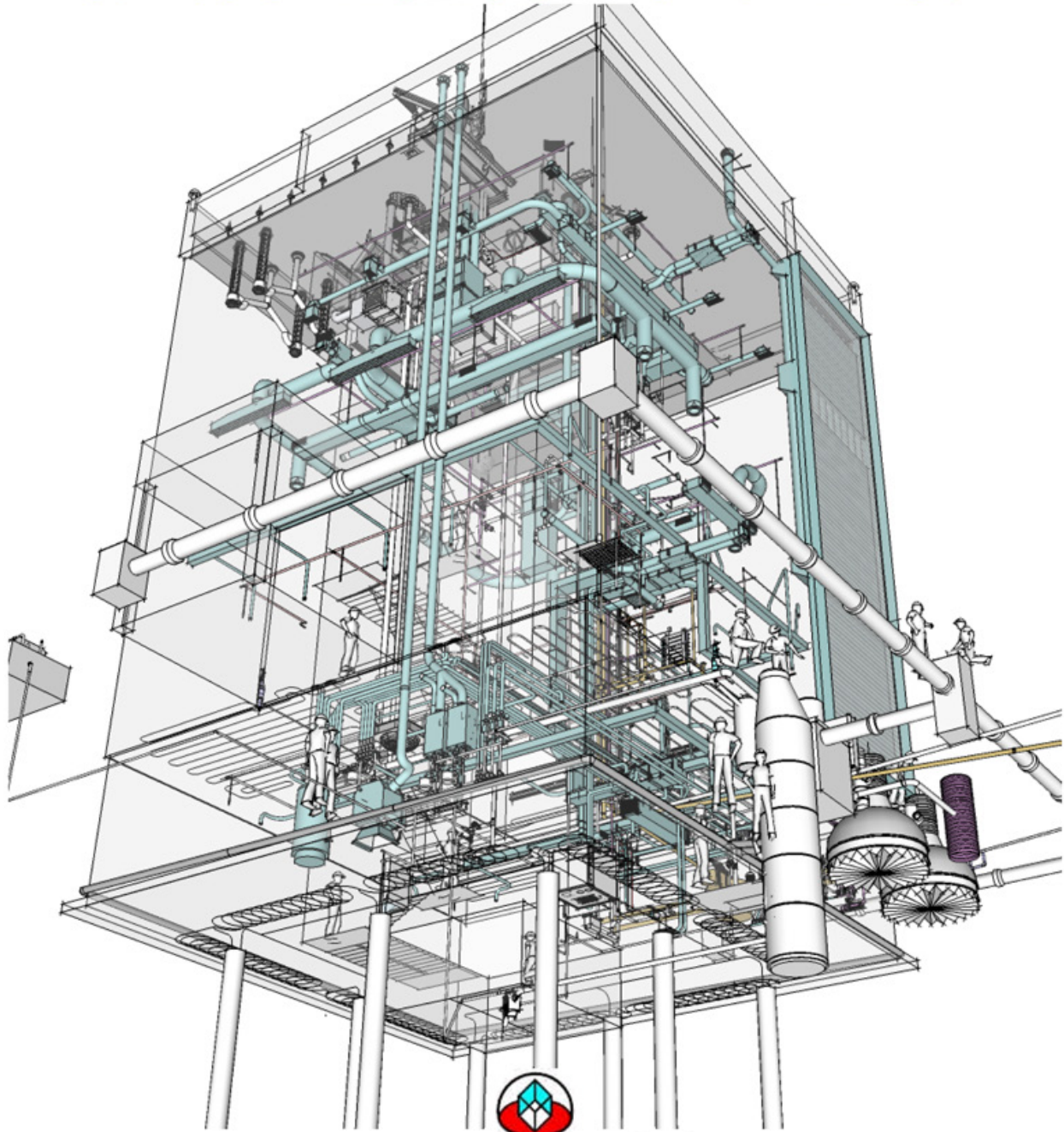
Construction cost is most definitely and important part of BIM, often the all important part these days in my opinion. This allows the designers to see what the budget or estimated cost of the project might be at any given point in time during the project with the exception of the very preliminary rough sketches and creative doodles!

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CONSTRUCTION MODELING

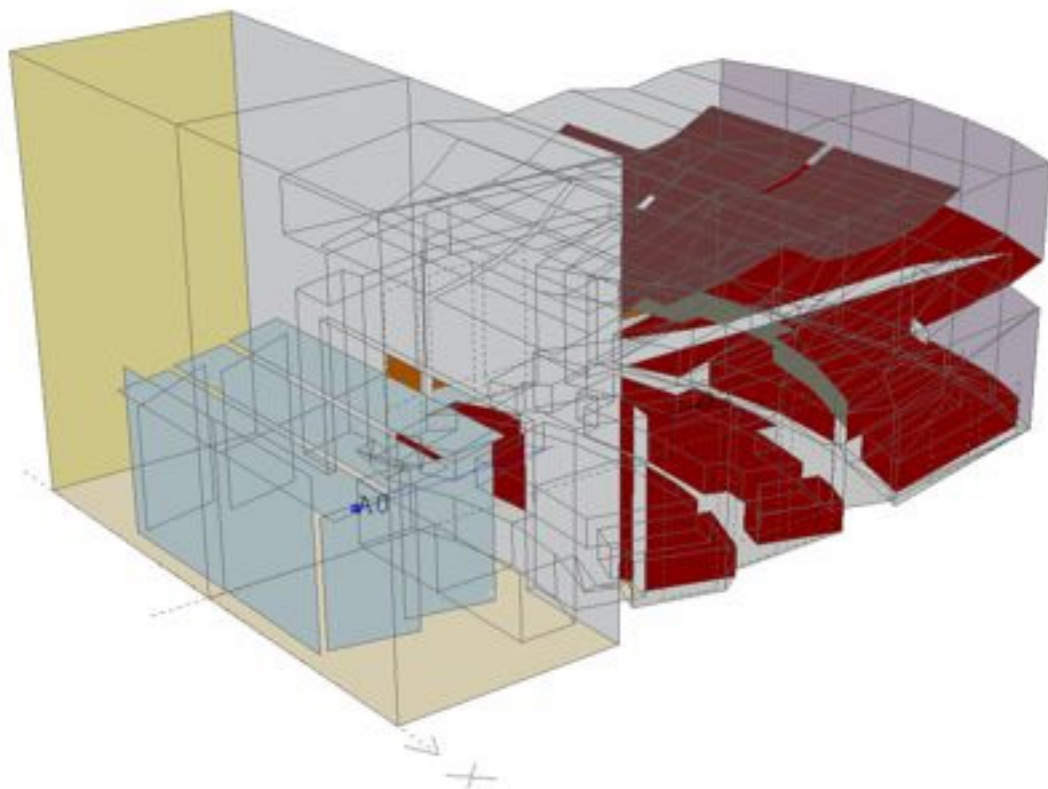
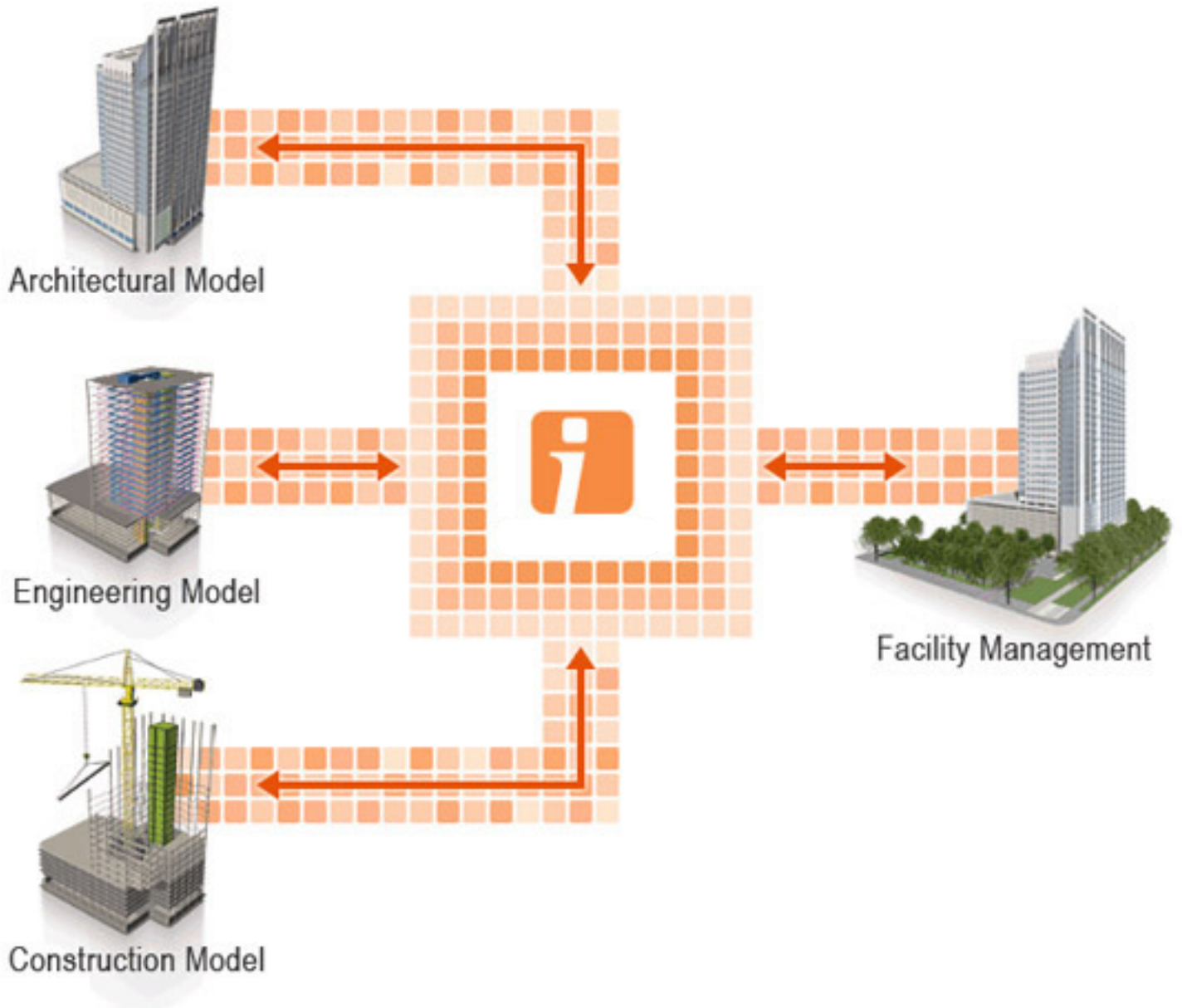
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Needless to say the data put into a BIM model is not only useful during the design and construction phase of a building project but can be used throughout the entire building lifecycle to help reduce the operation and ongoing management costs of the building which can and often is significantly more than the entire cost of the initial construction.

- THE BIM TEAM

A building project has many participants, architects, engineers, consultants, constructors etc. They all have different roles, goals, agendas and priorities and firms often run a number of projects in parallel. Combine this with the differences between building standards and conventions in different regions / areas that require different solutions and we can see why single platform strategy is not the solution to the AEC collaboration.

A pre-BIM team collaboration scenario might have worked along the following lines.

- *The architect, engineer and constructor are working on the same building project, lets say, a reasonable sized multi-storey building.*
- *The architect prepares the design, a 3D model, and needs to coordinate with the engineer for initial structural element sizing etc and sends the data (3D Model) to the engineer for assessment / structural details / proposals.*
- *More often than not, the architect's drawings / 3D model is full of architectural details that can be just noise to the engineer who needs only the load bearing structures / details. In this case, the engineer will often either clean up the architect's drawings / 3D model or reproduce the structural elements from scratch. This is not efficient.*

What is really needed here is a workflow compatibility to ensure that the other party, can if required, only get elements relevant to their part of the project, in other words, no noise, and get them early on in the design process so they can have relevant constructive input from as early on in the off-set as possible.



- DATA INTERPRETATION

Ideally the architect should only be sending relevant data to the engineer. This being the case the engineer will be able to start on the structural analysis of the building and produce a logical solution for the building structure, columns, floors etc at an early stage that may well, for example, facilitate the designer as there will be less 'head scratching' when deciding on spans etc.

- MANAGING CHANGE

Once a proper BIM workflow is established and exercised both the architect and engineer can work better within their own areas of expertise and at the same time feel confident that what they are doing is known to the other party via an accurate, up to date, BIM model.

Ideally, as they progress in the design and eventual construction phase, which will involve constructors, all will be in sync with the use of the BIM model if this workflow compatibility is maintained and communication is multi-directional, between all design professionals, allowing any design changes to be handled in an intelligent way and recorded in the BIM model.

Once the constructor comes into the picture and the construction starts, it becomes more obvious that the architect and engineer have been working on their own particular models and only

used the other party's model as a reference but all the data is combined in the BIM model for all involved, particularly the constructor.

- OWNERSHIP OF DATA

Both the architect and structural engineer manage and maintain their own models. The reason is that workflow compatibility requires that the real-world setup be mirrored so parties carry full responsibility for their part of the project, they may well also require mutual ownership of all BIM data. It's not file compatibility but rather workflow compatibility that can make or break open collaboration between the various stakeholders of the AEC industry. With open collaboration all participants of the AEC workflow enjoy unique benefits.

- UNIQUE BENEFITS

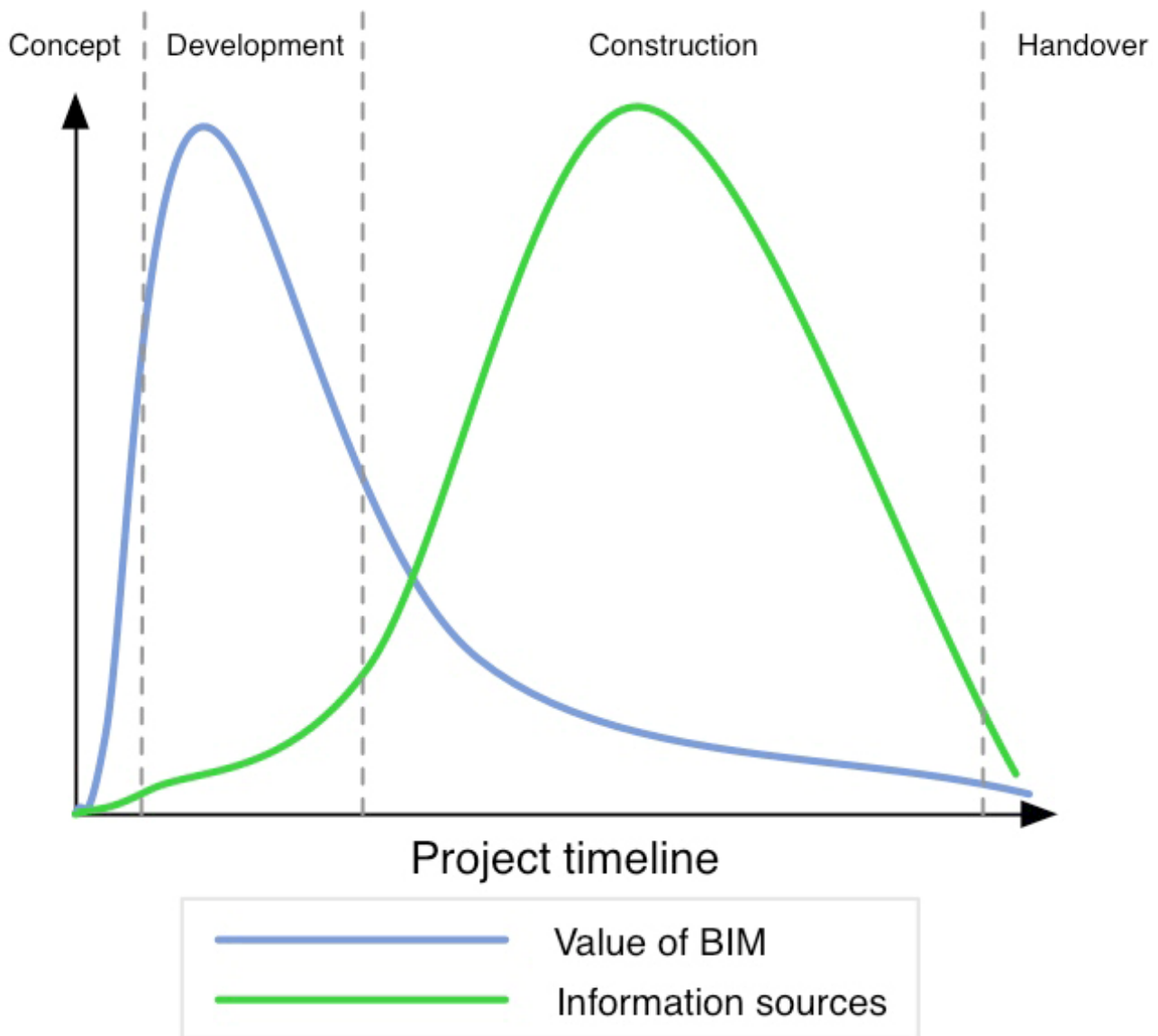
Project members can choose to work with the best of breed solutions in their respective fields and locations.

Project members can decide about their software upgrades independently from their peers in different projects.

Project coordination errors are greatly reduced due to workflow level compatibility in contrast to just file compatibility alone, the old system!

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out





Accessibility of BIM data is provided throughout the entire life cycle of the building, including construction and ongoing operation thus reducing maintenance costs.

Before concluding I should mention that there is a school of thought that also feels current BIM offerings are not yet the ideal answer by themselves or at least not without a good communication system as it does not always contain and make more efficient all the communication that

takes place within and across the design teams. The problem can be 'noise' in communications!

As building processes become more complex with larger design / build teams there is more reliance on email, fax, audio conferencing and web conferencing. Many are expressing views that there can often be a lot of communication confusion resulting in delays and in turn cost increases.

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A possible solution being put forward to solve this problem is the use of WiKi platforms. It seems the fundamental concept of WiKi and BIM are quite similar. Both enable multiple individuals to access and modify the data and information stored at a single location. I think there is most definitely a place for a WiKi type communication system within the overall BIM model. Some of the advantages of this particular platform are -

- Wikis can be used to replace much non confidential email communication and create long term information value and have same available generally to the overall team.
- Wikis can be used to retrieve information that may have been lost when a member of the team is no longer with the company. Past projects can be archived and made retrievable.
- Different discipline team members can have input via designated areas and freely make suggestions that could well be of value. Sometimes great ideas come from team members that are not directly involved in the particular process.
- Wikis can often reduce meeting times and sometimes eliminate the requirement for meetings as issues get resolved by the design team's involvement / effort. In other words the issue can well be resolved before it becomes a problem.

Dare I say that SketchUcation could be looked on as an example of how a Wiki has been utilised in the area of SketchUp plugin development over the past 6 years and is still continuing to deliver positive results in this area.

Using current BIM as it is, and future versions effectively, may well improve constructibility, shorten build time and positively impact the often all important 'bottom line' in the initial stages and ongoing stages of the building. I feel with the integration of quick and simple to use 3D modelling applications like SketchUp Pro at the front end on a BIM platform may well be the way forward.



‘...fundamental concept of WiKi and BIM are quite similar...’

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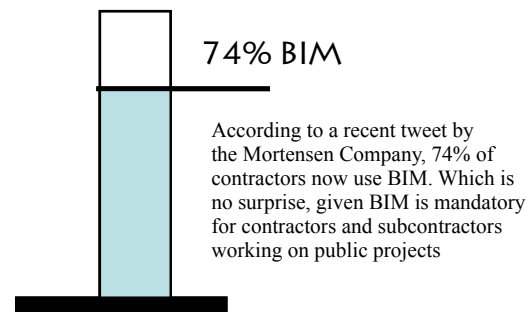
Construction Modeling – Social Media Part 1

It's hard to believe but the first commercially available email programs didn't appear until the late 1980's, and though the communication benefits of electronic messaging was clear by the mid 90's, most construction companies didn't use email until the very late 90's and early 2000's. It took a new generation of project managers to introduce this technology to reluctant companies – and as most would admit, the fight goes on.

TECHS OR MANAGERS

Though cell phones and voice mail have obviously become critical for voice communications in construction, some offices continue to take messages and handwrite phone messages on old fashion pink tablets. Senior managers without keyboard skills have assistants handle emails, finding computers intrusive and distracting.

At the same time, according to The Mortensen Company, more contractors now use BIM than designers. Of course, it goes without saying that the average builder has no idea who Mortensen is, and though most construction managers may claim to own some version of BIM software, complex 3D modeling is largely ignored for spreadsheets and face to face fieldwork during construction. Even at Mortensen's.

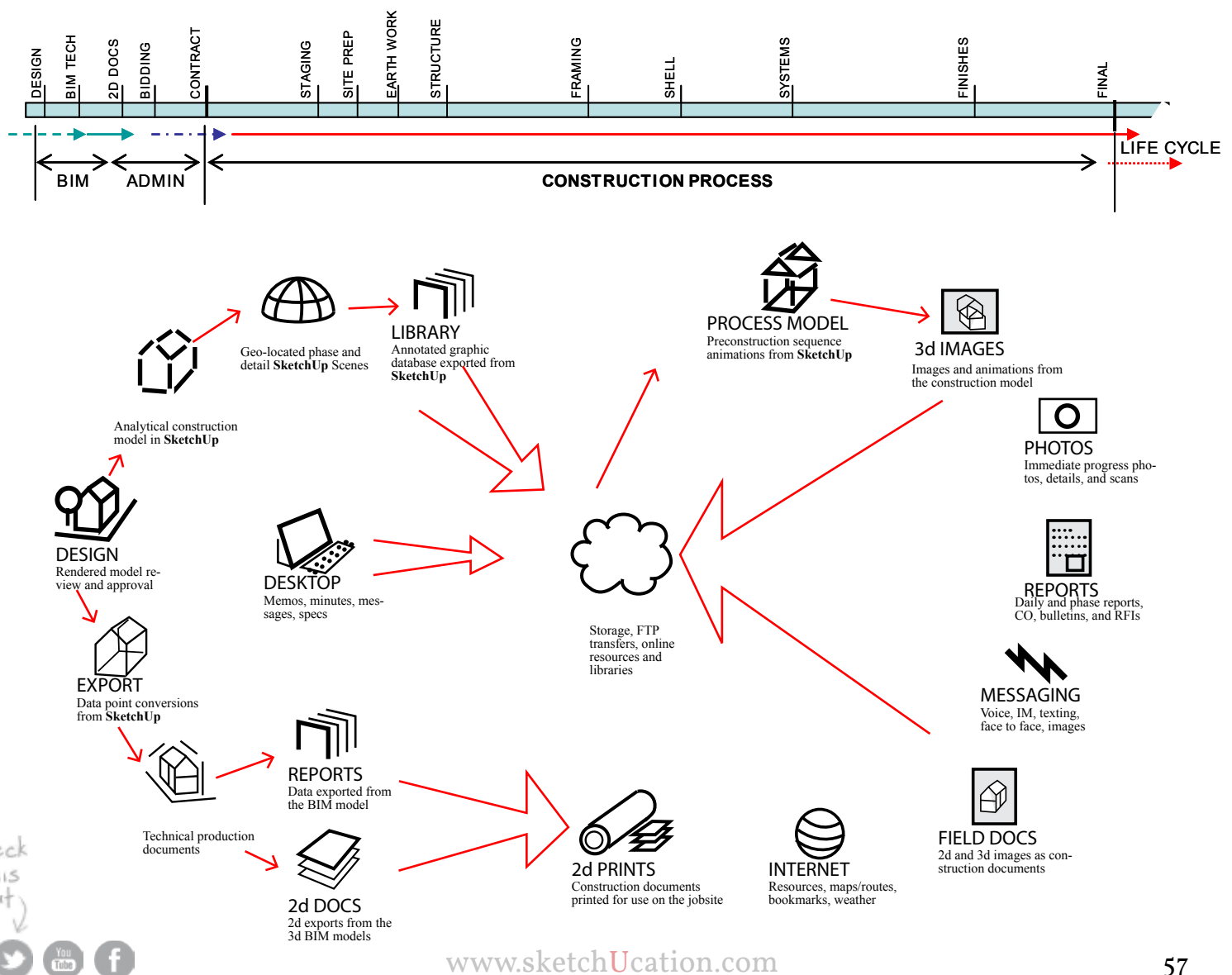


The dark secret is that very few companies actually use the software for day to day project management

MODEL WORLD IN THE REAL WORLD

It's no secret in a job trailer that BIM software requires trained technical skills, as well as constantly updated software and oversized workstations. In practice, working with this technology is simply not practical on a jobsite, especially when printed 2d contract documents are the basis for the actual scope of the work.

It's also important to point out that design, including BIM and tweaking it to generate 2D documents, is only a very small part of the real world construction process. Consider the computational tasks found in the timeline of a typical project.



EXPORT FROM SKETCHUP

Based on the value and cost of services, only 10% of the entire construction process is design, permitting, and pre-construction, and of that, perhaps half of design is BIM production. Following the money, the real focus should be on what is happening on the jobsite and the real world that surrounds it.

Today, computer programs link to the web, send email from menu selection, and automatically upload to cloud storage. Communications between team members now occur on PDAs (personal data assistants) or smart phones that text and tweet with annotated high resolution photos and video.

The mobility of computers has become a fundamental part of project communications. All of which is available wirelessly via satellite, cells, or broadband routers, giving project managers immediate access to web resources, project bookmarks, searches, and marketing and networking platforms like Facebook, You-Tube, and Linked In.

90% OF CONSTRUCTION IS COMMUNICATIONS

Given the power of these devices, what's interesting is how difficult it is to integrate these technologies into the actual construction process. A recent analysis by Pritesh Patel of Pauley Creative of a 2009 Construction Index survey found the top 15 of the 100 highest rated construction companies have yet to adapt to the communications potential of these new collaborative devices.



7 out of 15 top construction companies are on Twitter, but only **3 out of the 7** on Twitter are actually Tweeting. However, **none of the top 15** construction companies are engaging with followers.

12 out of 15 top construction companies have a LinkedIn company page, but only **6 out of the 12** have set up groups, and none are used for project communication.

14 out of 15 top construction companies have a presence on Facebook, but only **3 out of the 14** have more than 10 fans or Likes. **2 out of 15** companies have placed links on their company websites to a social media profile.

1 out of the top construction 15 companies has no presence on Twitter, LinkedIn or Facebook (not that Patel could find anyway).



According to a recent presentation by the Construction Marketing Association, not only is social media underused, the potential of these new technologies for construction communications is not even recognized.

A WORLD OF INFORMATION

Important is that global resources and detailed project specific information can now be accessed, reviewed, and transferred on ordinary laptops, touch tablets, pocket PDAs, survey instruments, and heavy machines and equipment. It's also possible to capture images, download files, and communicate with team members using all of this information while on a jobsite, in an office, or anywhere else in the world.

TWITTER (NEXT MONTH)

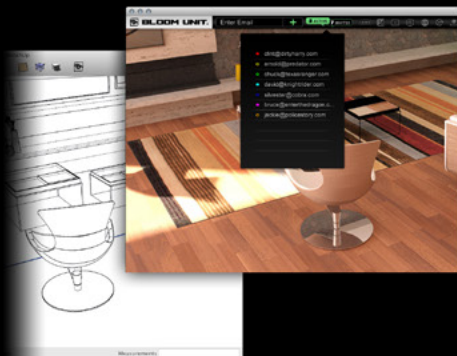
A good example of one of the most promising new tools for construction communications is Twitter.

This short-form messaging tool and micro-blogger is popular as a personal advertising media, but it also has real potential as a "real time network" for ongoing conversation between team members.

Next month we'll start looking at Twitter as a management tool, organizing a team of followers with lists and groups, short form 140 character texts, transferring images, and how to pump up management tweets with apps like Tweetdeck, Seismic, Tweetree, and Twubs.



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POWERED BY



Last Month we attended Basecamp 2012 in Boulder, Colorado and were given a very warm welcome by all the SketchUp team. From the party on the Sunday night through to the final day of activities it was a well managed event.

It was wholly different from past events with the focus heavily on transitioning to Trimble and building the team with more developers. There were some subtle hints at the direction SketchUp will take in the coming years and genuine sense of excitement.

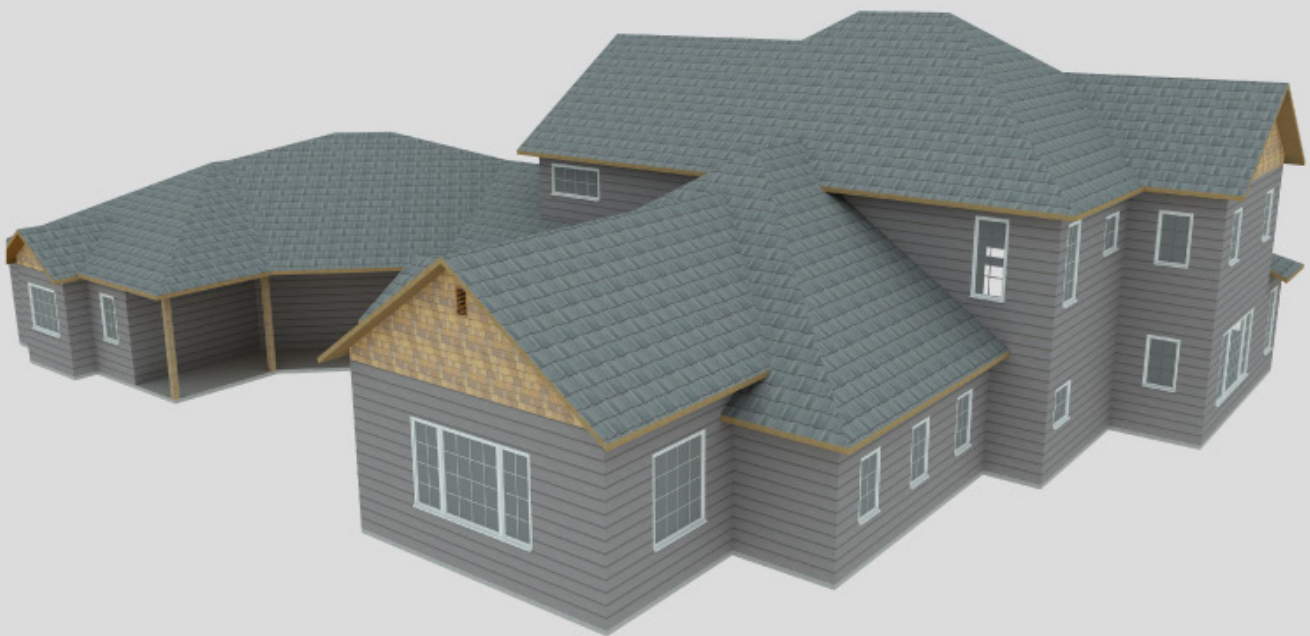


Not to mention the hat..... ;)



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