

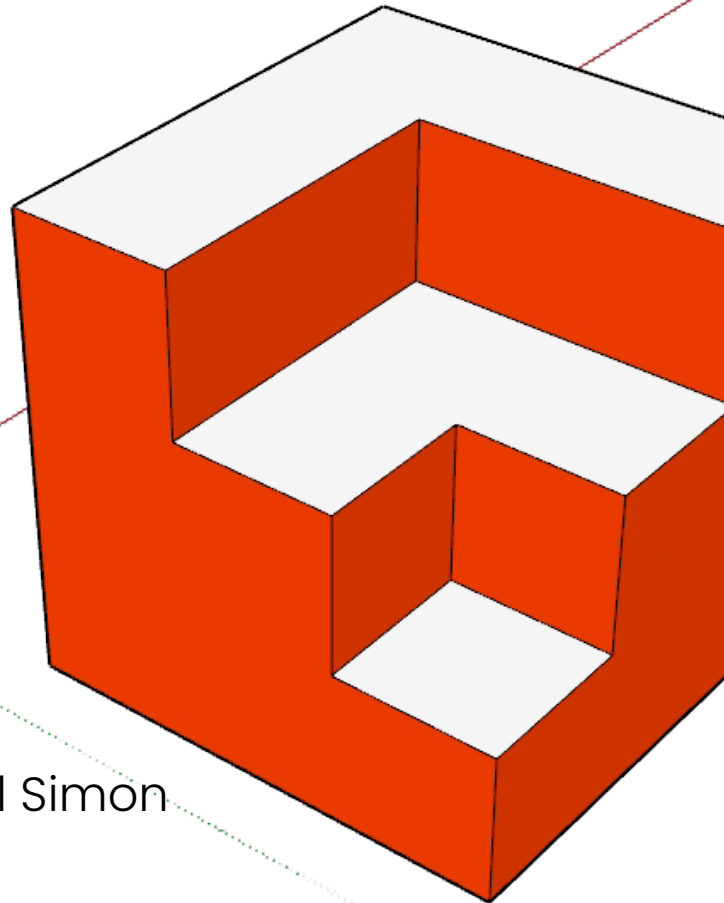
the

COMPLETE SKETCHUP HANDBOOK

*A Step-by-Step
Guide for Architects,
Engineers, and
Interior Designers*



Sketchup Guru | Manish Paul Simon



Why This Ebook?

SketchUp is an incredibly powerful tool for architects and interior designers, but mastering it can be a challenge. That's where this ebook comes in.

Whether you're new to SketchUp or an experienced user, this book will provide you with the tools and techniques you need to create stunning 3D models and photorealistic renders. We'll cover everything from the basics of SketchUp to advanced topics like working with plugins and of course V-Ray.

But why write this ebook? For me, the answer is simple: I believe that SketchUp has the power to transform the way we design and communicate our ideas. With SketchUp, you can quickly and easily create 3D models that bring your designs to life, and then share those models with clients and colleagues using tools like Layout for SketchUp.

However, learning SketchUp can be a daunting task, especially for those who are new to 3D modeling or rendering. There are so many tools, techniques, and plugins to learn, and it can be overwhelming to know where to start.

That's why I decided to write this ebook—to provide a comprehensive guide to using SketchUp that is accessible to all levels of users. Whether you're a beginner looking to learn the basics or an experienced user looking to take your skills to the next level, this ebook has something for you.

And because technology is always evolving, I plan to continue updating this ebook as new features and plugins are released. So even if you're already an expert in SketchUp, this book will remain a valuable resource for years to come.

I hope you find this ebook to be a helpful and informative guide to using SketchUp, V-Ray, Layout for SketchUp, and other plugins. Happy modeling!



See you on the Inside!

Best,
Manish

Cheers!!!



How to use this Interactive Ebook

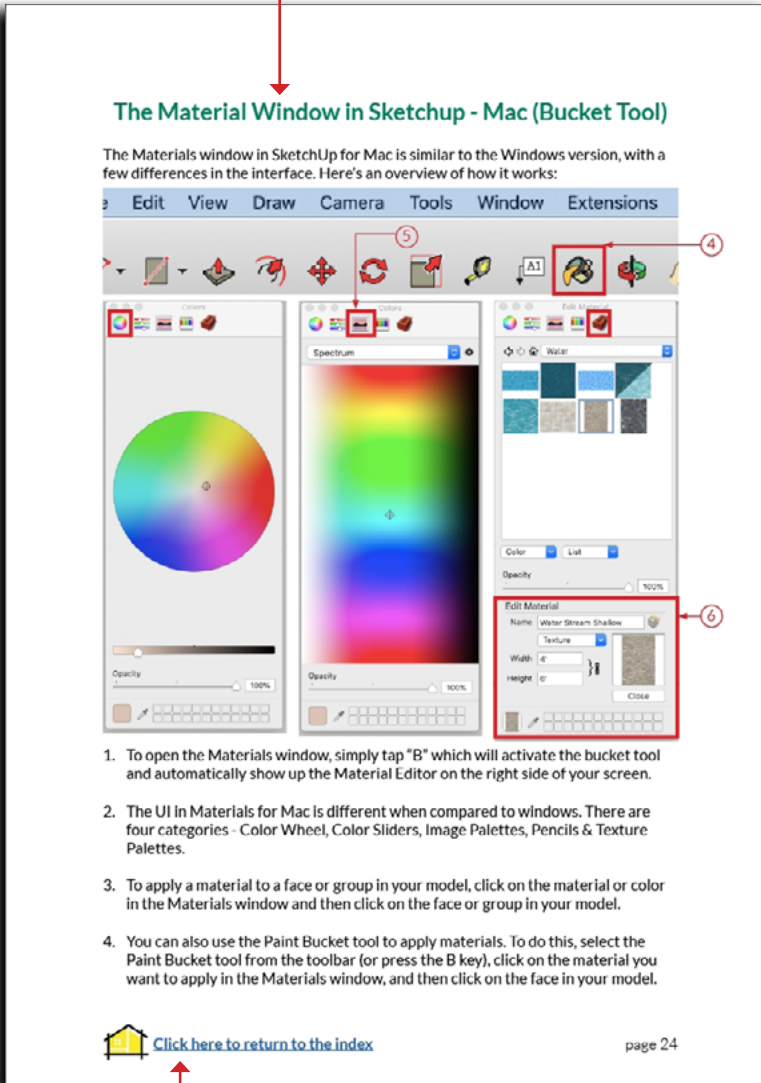
This index is organized into “Categories” and “Sub Categories” as shown in the next page.

You can jump to any of the below categories and start learning. Or you could also jump into any of the sub-categories (contents) in the next page for a specific topic.

Alternatively, to search for a keyword, press Ctrl+F and type it in. Clicking on the green header on a page will load the corresponding video on Youtube.

In summary, use the index to find categories, click to navigate, search for keywords, and click on the green header to watch the video on Youtube.

Clickable Hyperlink
(Takes you to the Video for each Lesson)




The Material Window in Sketchup - Mac (Bucket Tool)

The Materials window in SketchUp for Mac is similar to the Windows version, with a few differences in the interface. Here's an overview of how it works:

Edit View Draw Camera Tools Window Extensions

1. To open the Materials window, simply tap "B" which will activate the bucket tool and automatically show up the Material Editor on the right side of your screen.
2. The UI in Materials for Mac is different when compared to windows. There are four categories - Color Wheel, Color Sliders, Image Palettes, Pencils & Texture Palettes.
3. To apply a material to a face or group in your model, click on the material or color in the Materials window and then click on the face or group in your model.
4. You can also use the Paint Bucket tool to apply materials. To do this, select the Paint Bucket tool from the toolbar (or press the B key), click on the material you want to apply in the Materials window, and then click on the face in your model.

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Sketchup Secrets is written by Manish Paul Simon. ISBN number: 9798377488309



Difference b/w Sketchup - Window & Mac Versions

The SketchUp interface on Mac and Windows is similar in many ways, but there are some differences to note.

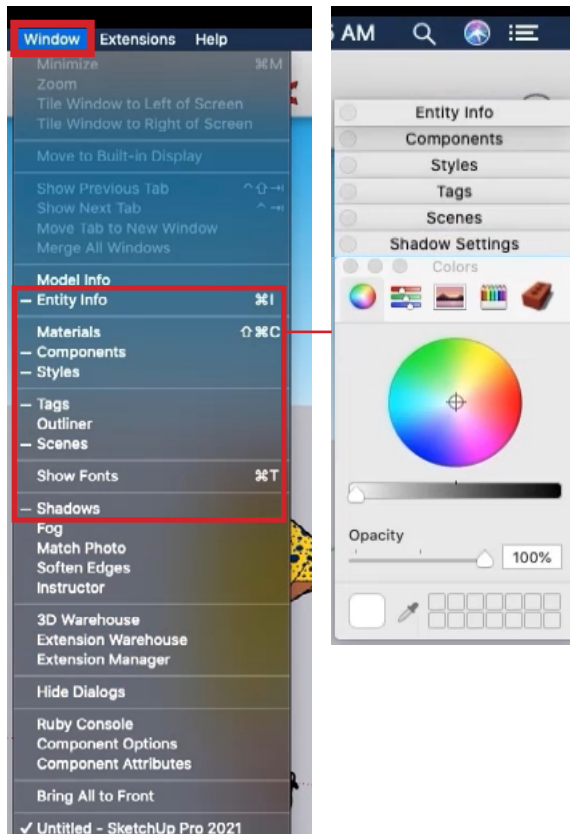
One key difference is the location of the menu bar. In Windows, the menu bar is located at the top of the SketchUp window, while on Mac, the menu bar is integrated into the top bar of the screen.

Hint:

Another difference is the location of the tray. In Windows, the tray is located on the right side of the SketchUp window by default, while on Mac, the tray is integrated into the main SketchUp window and can be hidden or shown using the “Window” menu.

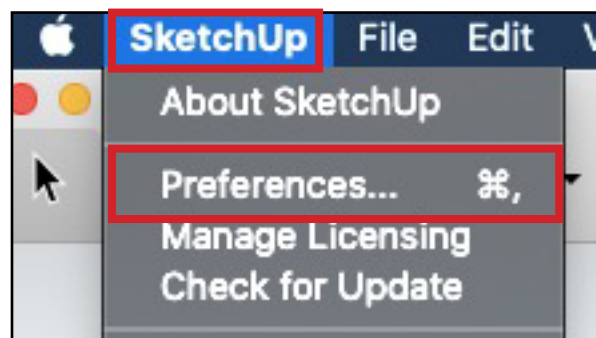
Hint:

This is the “Tray” in Sketchup for Mac



Hint:

If you don't find your preferences in Sketchup for Mac. Just go to “Sketchup” from your menu bar > “Preferences”



Additionally, some of the keyboard shortcuts for SketchUp tools may differ between Mac and Windows, due to differences in the keyboard layouts between the two operating systems. We will look at the differences later.

Despite these differences, the basic layout and functionality of the SketchUp interface is similar on both Mac and Windows, allowing users to easily create 3D models in either operating system.



The Line Tool

The Line tool in SketchUp is used to draw straight lines between two points in your model. It is one of the most basic tools in SketchUp, and is often used as the foundation for creating more complex shapes and forms. Here's how to use the line tool:



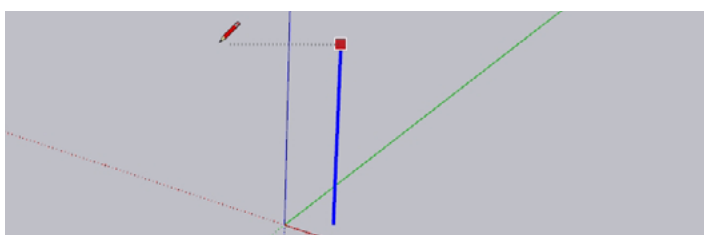
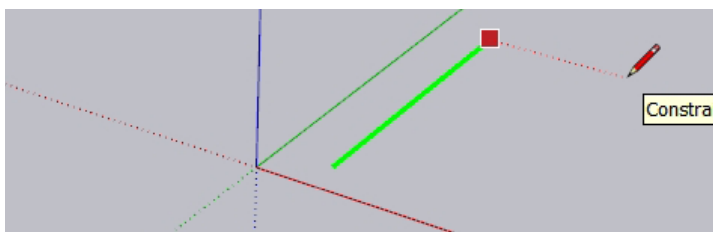
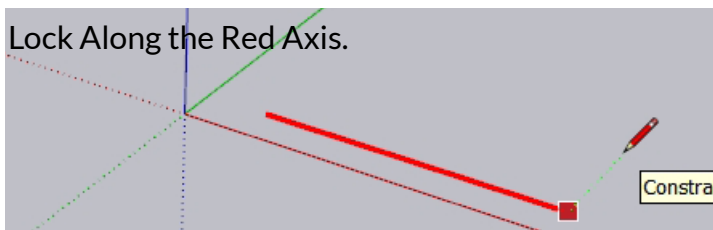
1. Select the line tool from the toolbar, or press the “L” key on your keyboard.
2. Click on a starting point for your line and release the mouse button, hover your mouse to the endpoint and click again to finish.
3. You can also type in the exact length of the line in the “Measurements Box” (Value Control Box) at the bottom right of the screen and press Enter to create the line.
4. If you would like to draw the line along the specific axis, follow the steps below.

Drawing Along An Axis

IMPORTANT:

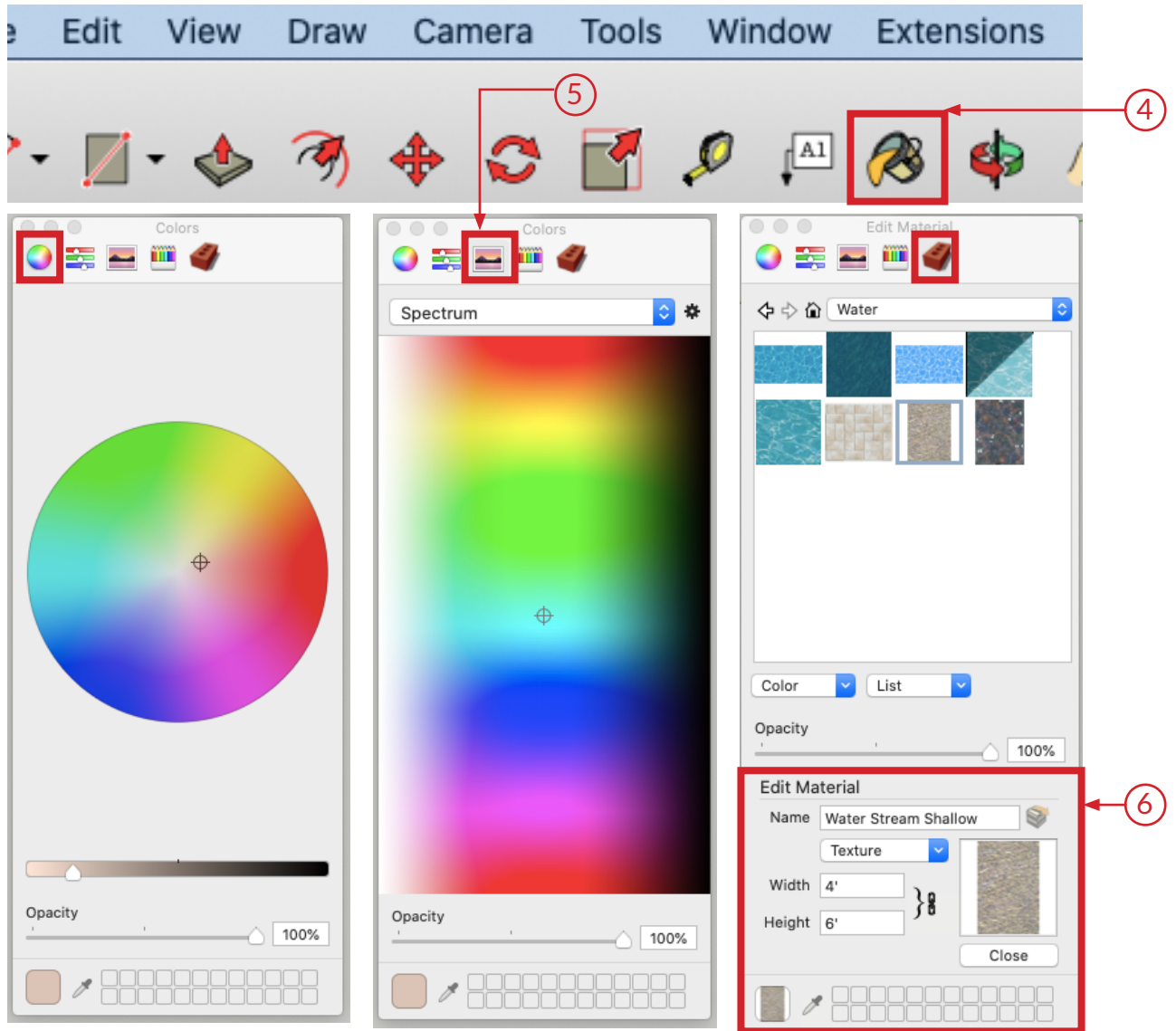
When you draw objects in Sketchup with the line tool or any other tool for that matter, it is always important to lock the line to a certain axis. This will help avoid interfering lines to different endpoints and creating lines on the wrong planes or axis.

To lock your line along an axis, activate the line tool and simply use the arrow keys on your keyboard or the ‘shift’ key to lock while drawing. (tap and release)



The Material Window in Sketchup - Mac (Bucket Tool)

The Materials window in SketchUp for Mac is similar to the Windows version, with a few differences in the interface. Here's an overview of how it works:



1. To open the Materials window, simply tap “B” which will activate the bucket tool and automatically show up the Material Editor on the right side of your screen.
2. The UI in Materials for Mac is different when compared to windows. There are four categories - Color Wheel, Color Sliders, Image Palettes, Pencils & Texture Palettes.
3. To apply a material to a face or group in your model, click on the material or color in the Materials window and then click on the face or group in your model.
4. You can also use the Paint Bucket tool to apply materials. To do this, select the Paint Bucket tool from the toolbar (or press the B key), click on the material you want to apply in the Materials window, and then click on the face in your model.



5. To create a new material, go to “image palette” and click on the “wheel” button in the Materials window. You can then choose a texture file for the material or also create a texture from your clipboard.
6. You can also edit existing materials by double clicking on the material in the Materials window. This will allow you to adjust the material’s color, texture, and other properties.

Overall, the Materials window is a powerful tool for managing and applying materials in your SketchUp model, regardless of whether you’re using the Mac or Windows version of the software. By using the Materials window, you can easily add realistic textures and colors to your model, which can help to enhance its visual appeal and communicate your design ideas more effectively.

Hint: To sample a material, activate the bucket tool, hold down the ‘cmd’ key and sample your material. Now simply apply that material on your new face.

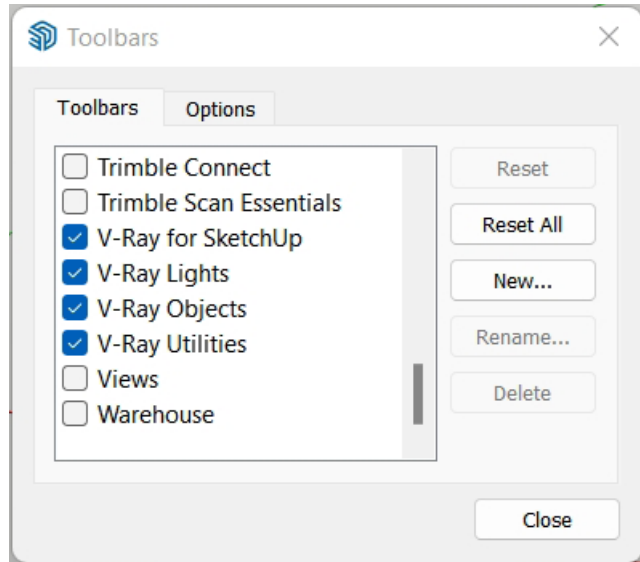


Vray Toolbars

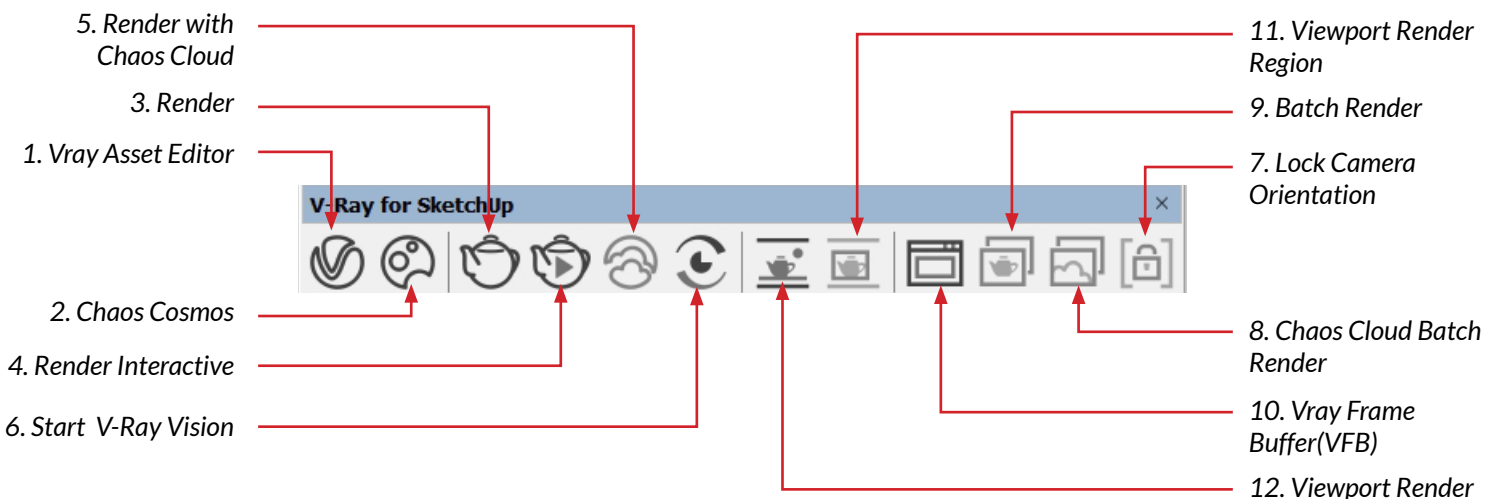
V-Ray for SketchUp adds several toolbars to the SketchUp interface, which provide access to V-Ray's various features and settings.

To access the V-Ray Toolbars, simply go to View > Toolbars.

And Switch on all four of the Vray Toolbars as shown on the right.



1. V-Ray for Sketchup Toolbar



This is the main toolbar for V-Ray, and it contains buttons for rendering, adjusting settings, and accessing V-Ray's various features. Here is a brief of the components of the V-Ray for SketchUp Toolbar:

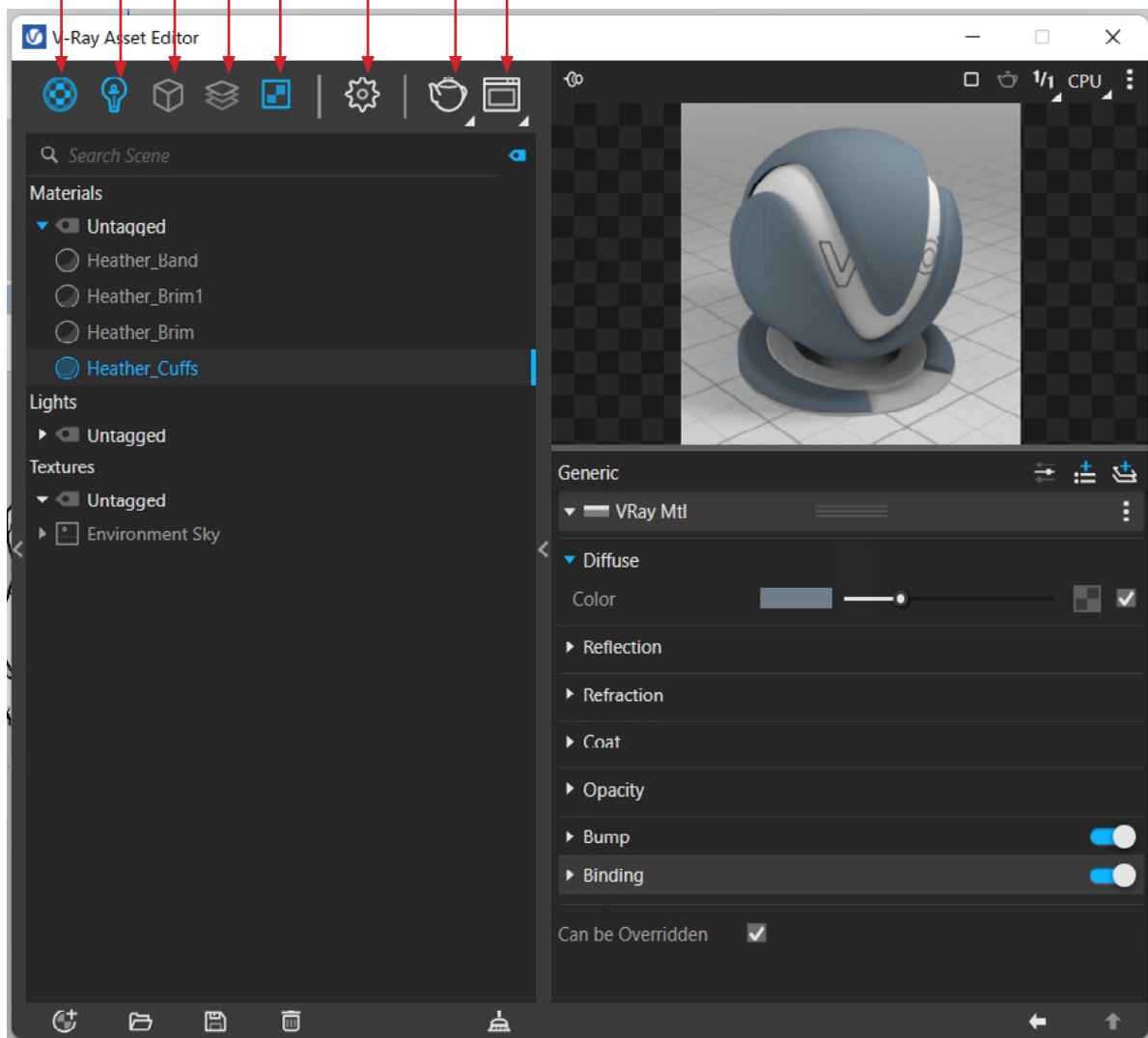


Vray Asset Editor

The V-Ray Asset Editor is a powerful tool in V-Ray for SketchUp that provides a centralized location for managing all of the materials, textures, lights, and other assets in your scene. Click on the first button in your Vray for Sketchup toolbar to access the asset editor.



- 1. Materials
- 2. Lights
- 3. Geometry
- 4. Render Elements
- 5. Textures
- 6. Render Settings
- Render Button
- Vray Frame Buffer



The Asset Editor can be accessed from the V-Ray toolbar or from the V-Ray menu. Once opened, you will see several tabs, each with a different category of assets. These tabs include Materials, Lights, Geometry, Textures, and Settings.

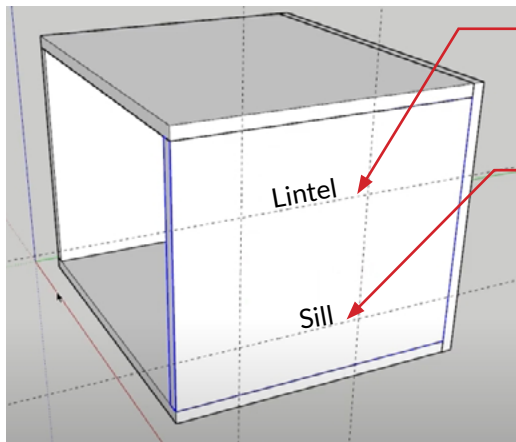
1. **Materials:** The Materials tab allows you to create and manage materials, with options to adjust their color, reflectivity, transparency, and other properties. You can also apply pre-made materials from the V-Ray library or import materials from external sources.
2. **Lights:** The Lights tab allows you to add and manage different types of lights in your scene, including IES, Spot, Omni, Sphere, and Rectangle lights. You can also adjust the light properties, such as intensity, color, and cone angle, from this tab.
3. **Geometry:** The Geometry tab allows you to manage 3D objects in your scene, including importing and exporting objects, setting up proxies, and applying fur and scattering effects.
4. **Texture:** The Textures tab allows you to manage textures in your scene, including adding, modifying, and importing textures. You can also adjust the texture properties, such as the texture's tiling, offset, and rotation.
5. **Render Elements:** The render elements allow you to isolate specific aspects of your scene during rendering, such as reflections, shadows, or diffuse lighting. This enables greater control over the final output and allows for adjustments to be made in post-production. Each element can be customized with its own settings and rendered separately or combined with other elements.
6. **Settings:** The Settings tab allows you to adjust global render settings, such as image resolution, quality, and render elements. You can also adjust the V-Ray frame buffer, and configure options such as environment maps and color mapping.

Overall, the V-Ray Asset Editor is a powerful and convenient tool that allows you to manage all your scene assets in one place, providing easy access and efficient workflow for creating high-quality renders in V-Ray for SketchUp.



Create the Openings

Step 1: Create the reference lines on the wall using the "Tape Measure Tool."

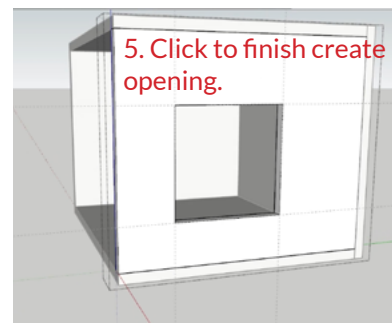
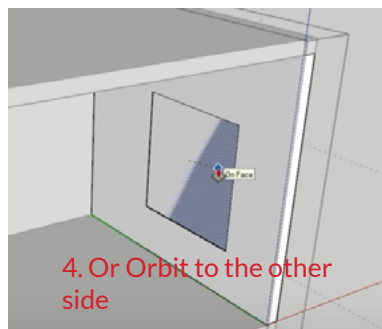
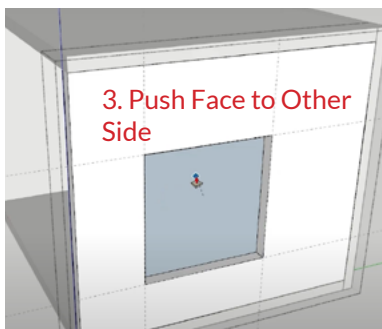
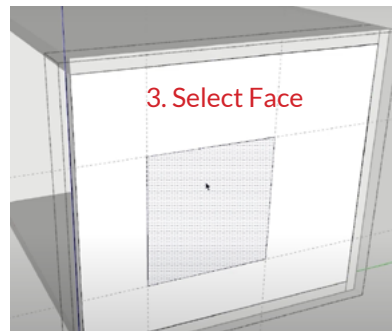
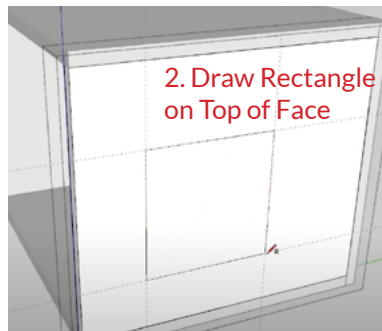
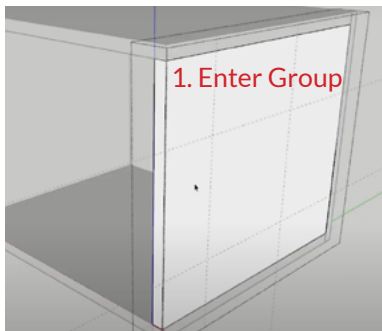


Create the Lintel at a height of about 2100mm or 7'.

Create the Sill at about 600mm or 2'.

The Window can be any size. But for this purpose, we will give a width of about 1500mm or 5'.

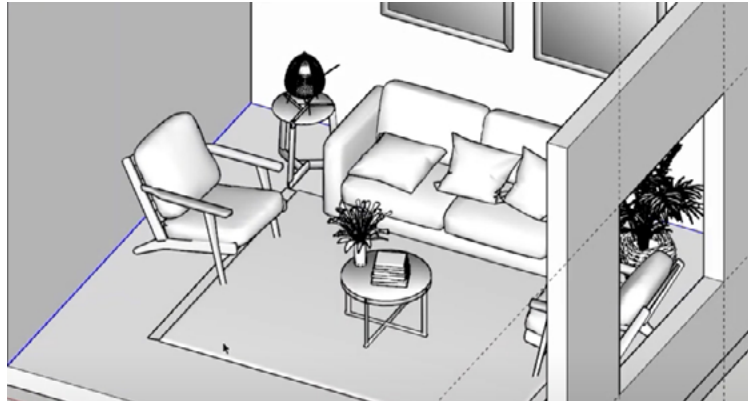
Step 2: Next enter the group, draw a rectangle on top of the reference lines and use the push/pull tool to create the opening.



How to Model the Skirting with the Follow Me Tool?

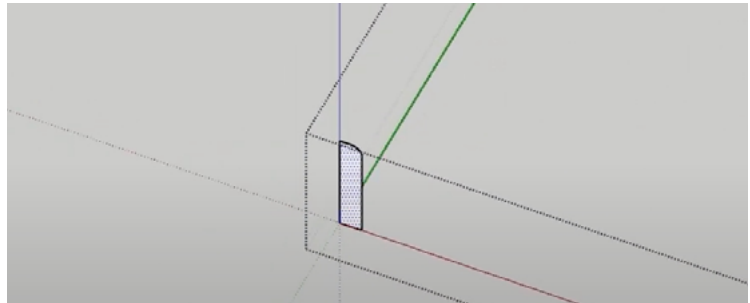
Step 1: Draw the Path first. This will be a line along the corners of the room.

Now Select the four lines (triple click) and make it a group.



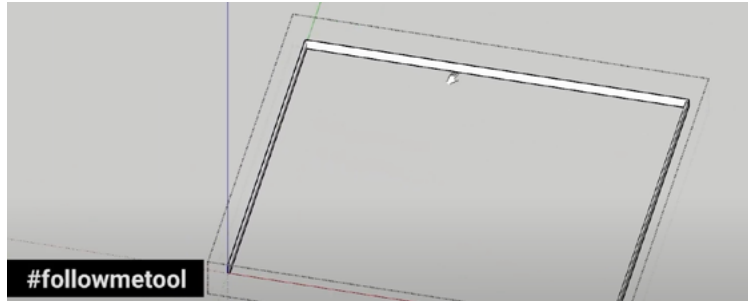
Step 2: Create the Profile (Face) on one corner of the lines.

Use the Arc Tool to create the corner bevel of the edge



Step 3: Use the Follow Me Tool to create the Skirting.

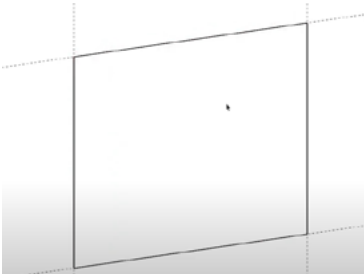
1. Select the path (edges) first.
2. Go to Tools > Follow Me
3. Select the Face



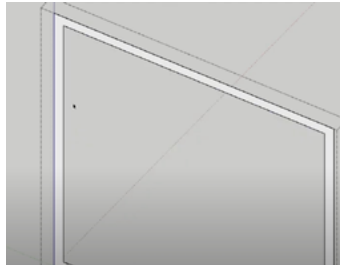
How to Model the Window?

Step 1: Model the Frame of the Window

1. Draw a Rectangle (R) on top of the opening and make it a group.



2. Enter the new group and give an offset (F) of 50mm (2"). Delete the inside Face

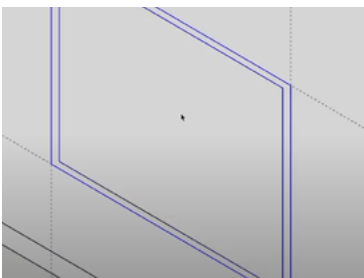


3. Give a frame thickness of about 100mm (4") using the pushpull tool.

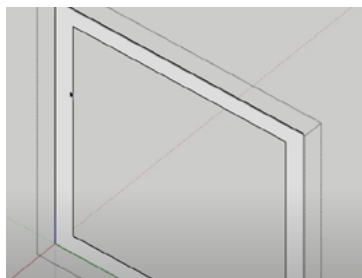


Step 2: Model the Shutter Frame of the Window

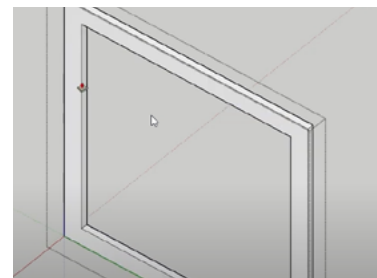
1. Draw another Rectangle inside and make it a group.



2. Enter this group and give an offset of 100mm (4"). Delete the inside face

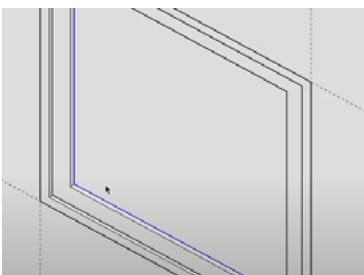


3. Give a shutter thickness of 50mm (2").

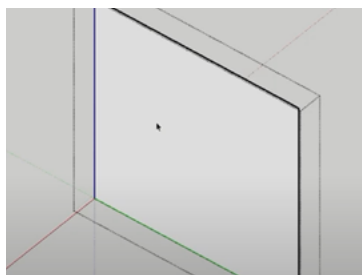


Step 3: Model the Shutter Window

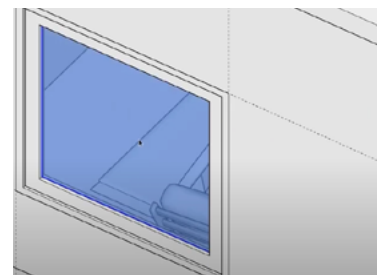
1. Draw another Rectangle inside and make it a group.



2. Give a glass thickness of 6mm.



3. Apply a glass material to the shutter window.



As a last step, select all your window components and make it a single group.

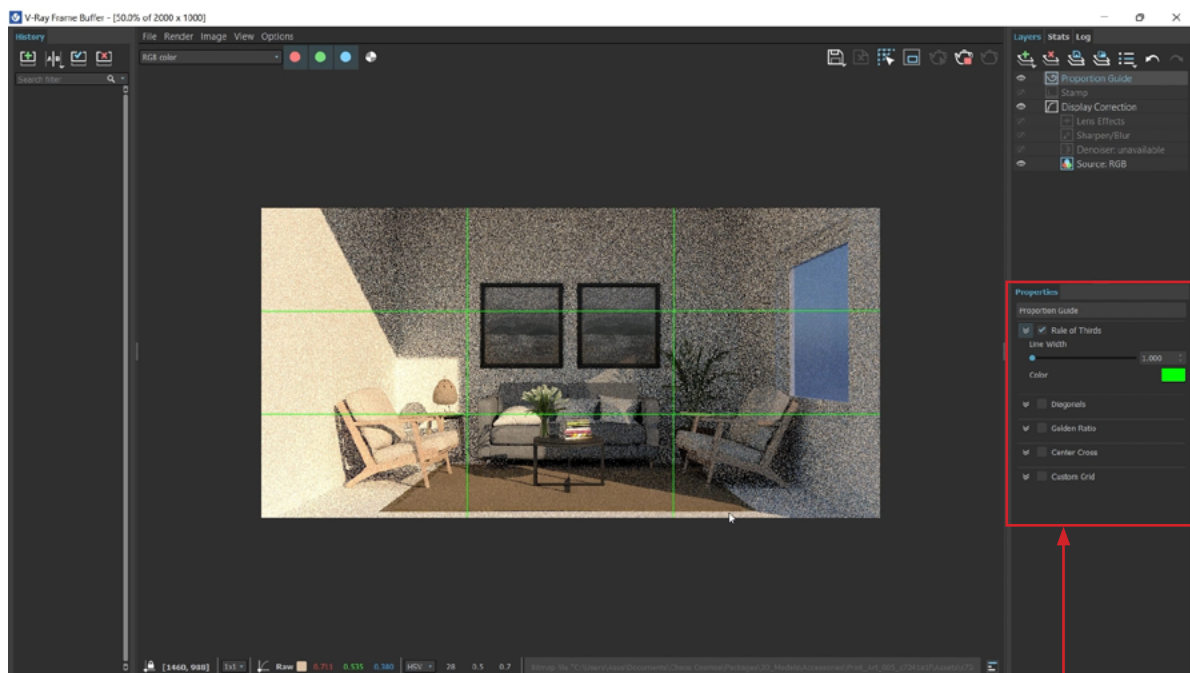
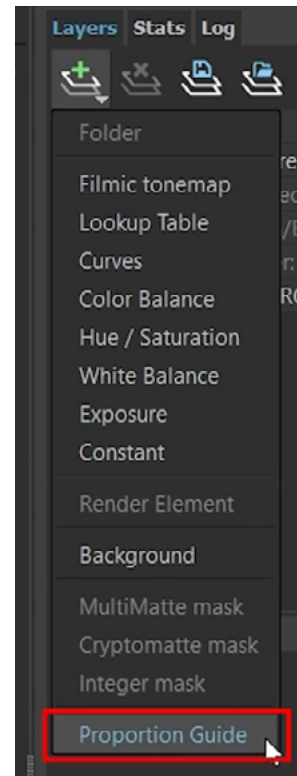


#5: Add Proportion Guides

The proportion guides in V-Ray for SketchUp are lines and grids that can be displayed over your scene to help you create a visually balanced composition. They are based on the Golden Ratio and Rule of Thirds principles, and can be customized to your needs.

To Access Proportion Guides, click on the green '+' button below the layers tab. And select proportion guide from the bottom.

Tip: The rule of thirds is a composition principle that suggests dividing the image into thirds both horizontally and vertically. Placing important elements along these lines can help create a visually pleasing and balanced composition.

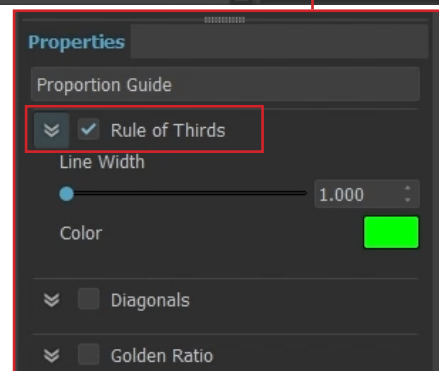


Select any of the proportion guides from here

Our render is composed well already!

If your focal point is not at the center, use the hand tool (h) and pan your scene slightly.

Don't forget to 'update' your scene after you're done.



#7: Switch on History VFB

The History feature in V-Ray Frame Buffer (VFB) allows you to review and compare previous renders of your scene. It saves previous renders as separate tabs in the VFB, so you can easily switch back and forth between them to compare the differences in lighting, materials, camera angles, and other settings. This feature can be particularly helpful when fine-tuning your scene or when experimenting with different lighting and rendering setups. By comparing different versions of your renders, you can easily identify what works best for your project and make informed decisions about your final render.

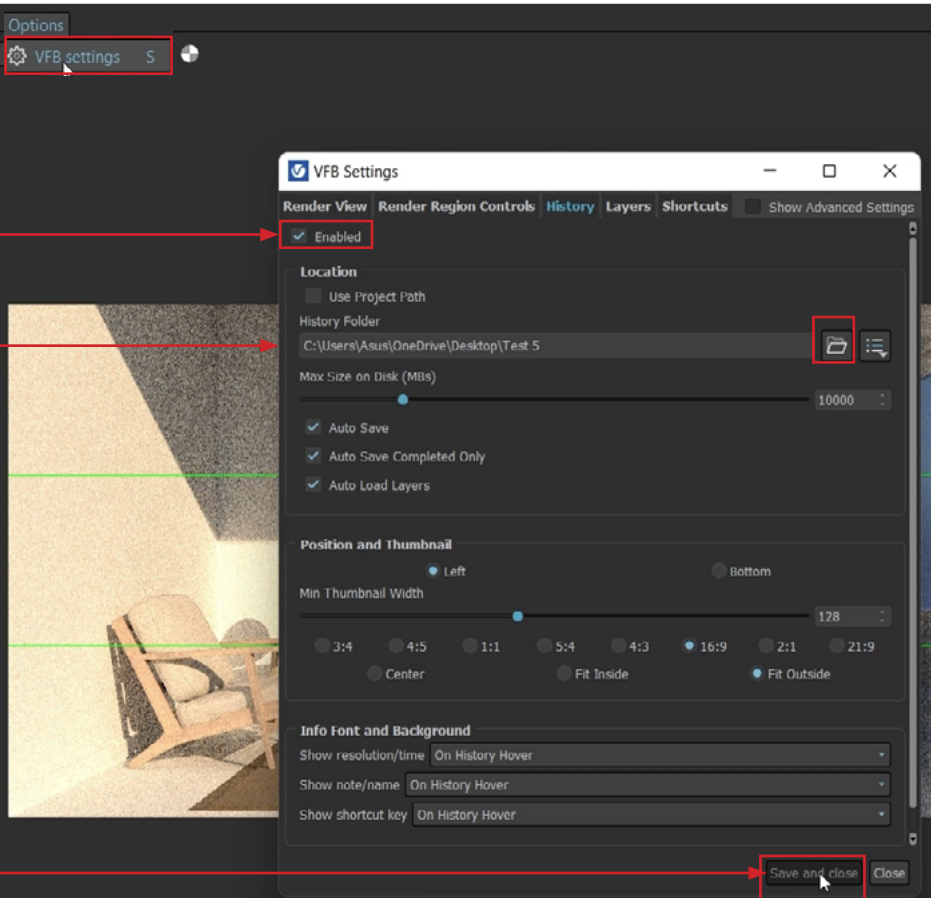
Stop the interactive render & follow the steps below.

Go to Options > 'VFB Settings' in the Vray Frame Buffer (VFB)

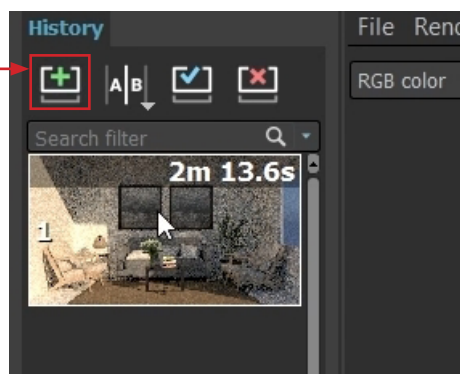
Click on 'Enable'

Specify a folder to save the history VFB files. These files are called 'vfb' files.

Click on 'save & close'

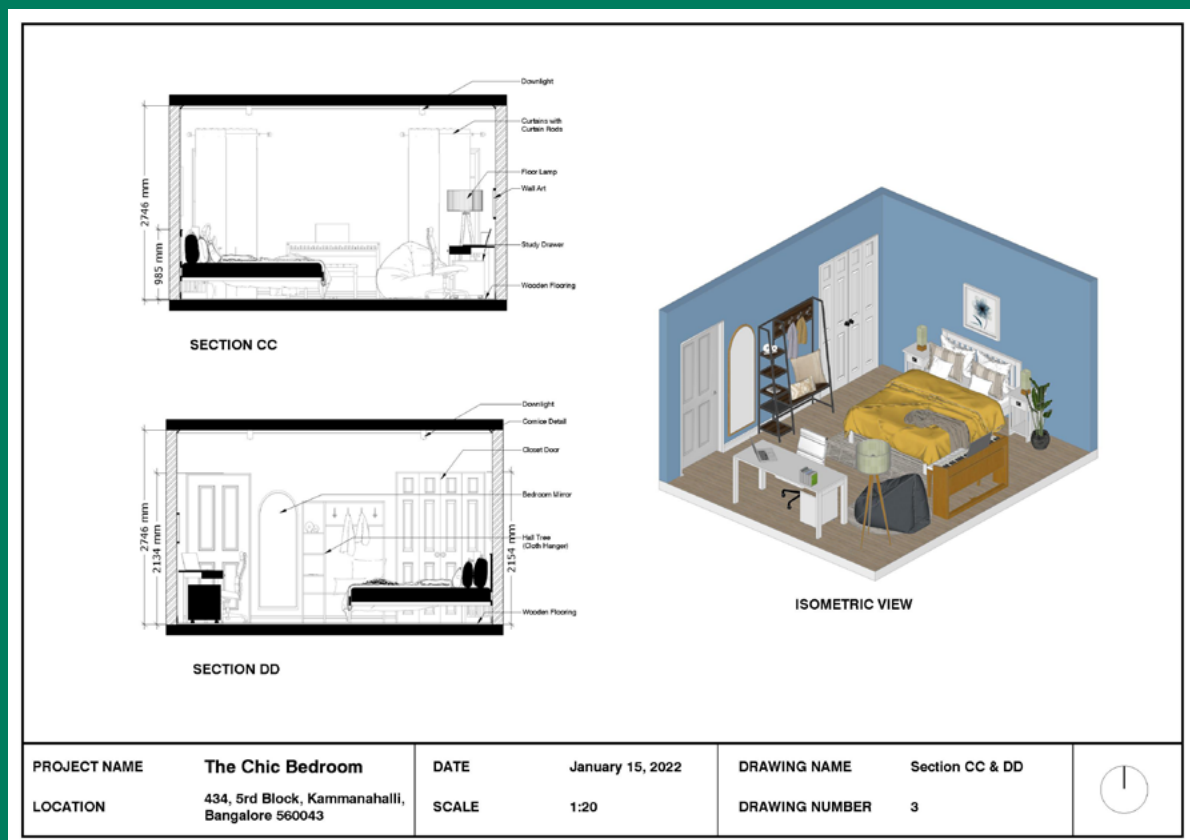


After enabling the history VFB, you can start adding your scenes to the history panel window of the frame buffer



PROJECT 02 BEDROOM DRAWINGS LAYOUT FOR SKETCHUP

QUICK PRESENTATIONS IN LAYOUT FOR SKETCHUP



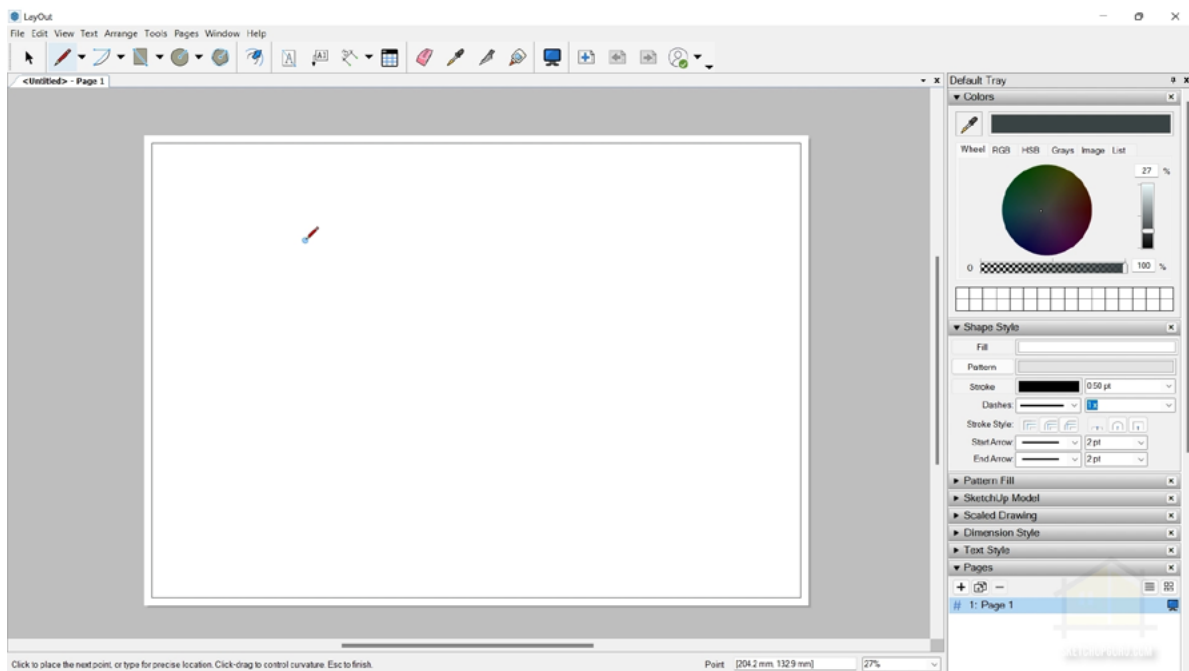
What is Layout for Sketchup?

Layout for SketchUp is a software program that helps you create 2D documents from your 3D models.

It's commonly used by architects, engineers, and construction professionals to create professional presentations and construction documents.

With Layout, you can combine your SketchUp models, images, text, and other graphics to create a single document.

You can also add annotations, dimensions, and labels to your documents, and use pre-made design elements like title blocks and logos to save time. Overall, Layout helps you turn your 3D models into clear, easy-to-understand



The first step before using Layout for Sketchup is to optimize your Sketchup model.

Let's learn to fix our models before sending it to layout.



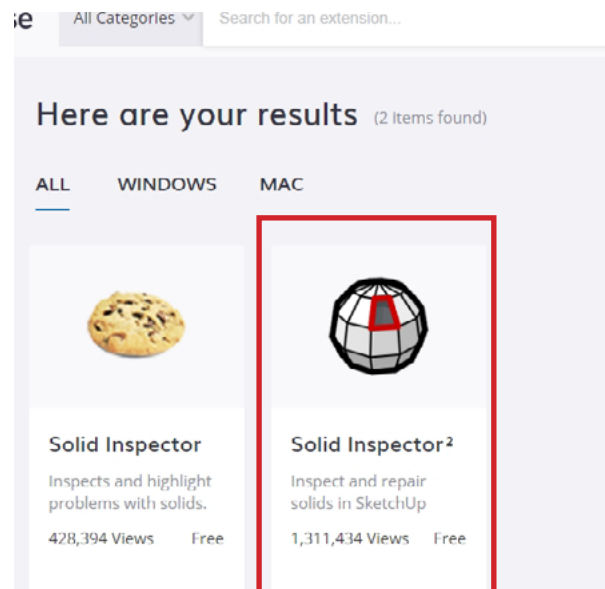
3. Use Solid Inspector Tool

The Solid Inspector tool is a plugin that helps you find and fix problems in your 3D models, making them “watertight” or “solid”. A watertight model means that it has no gaps or holes in the surface, which is essential for 3D printing or exporting to other software.

1. Install Solid Inspector Tool

Head to Extensions > Extension Manager. Search for Solid Inspector Tool and install this plugin.

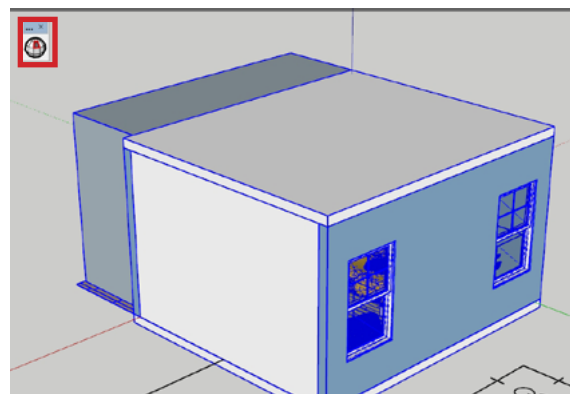
After installing the Solid Inspector extension, restart Sketchup.



2. Select the Model and click on the “Solid Inspector” icon.

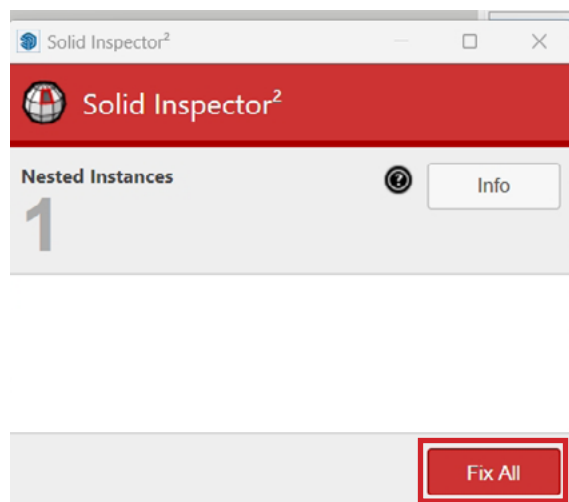
If you don't find this icon, go to “Tools” > “Solid Inspector”

Or go to View > Toolbars and switch on the icon.



3. Click on “Fix All” to fix any issues in your model. If it cannot be fixed automatically, you can tap ‘tab’ on your keyboard and it will zoom in to the problem area.

Now you can fix that edge or face manually.

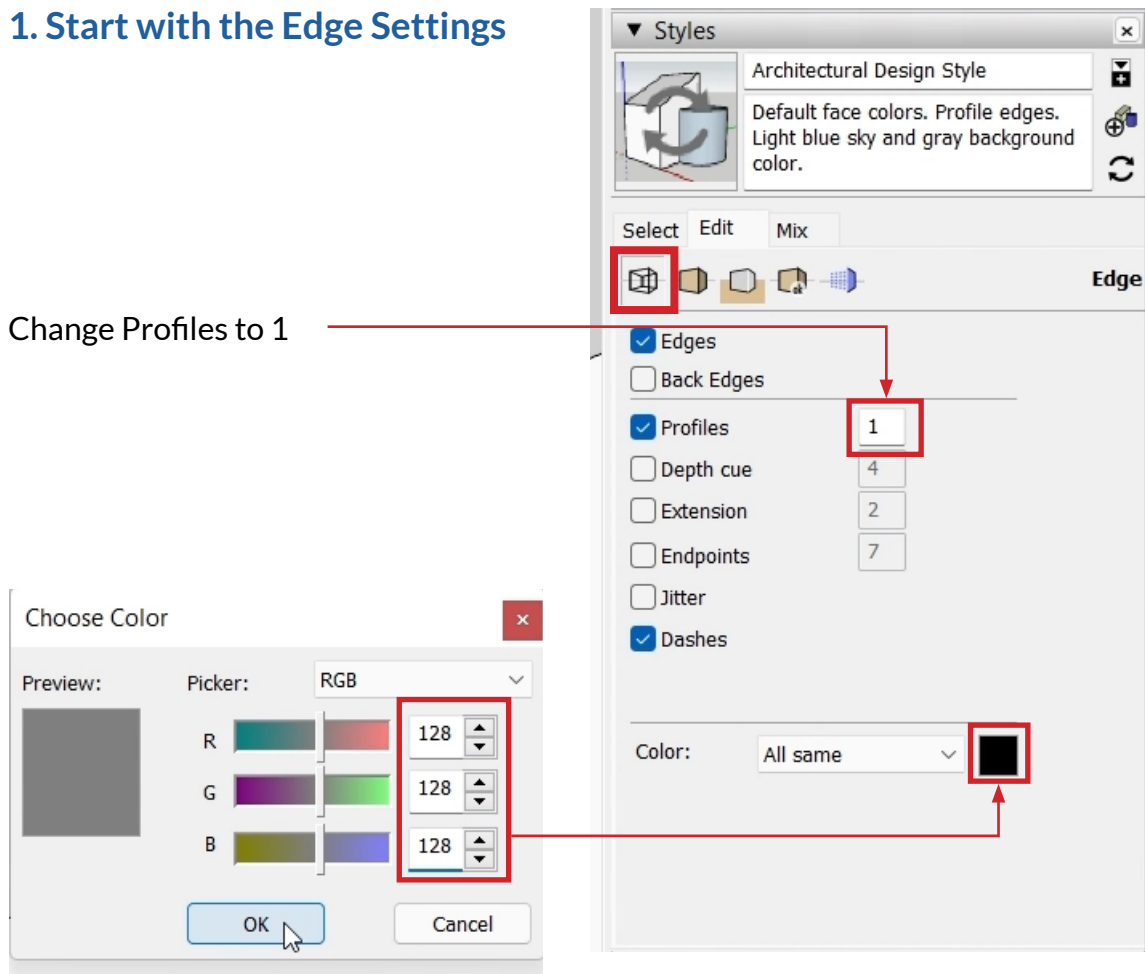


Setting up Styles in Sketchup

Setting up styles before sending your model to Layout in SketchUp is essential to ensure that your 2D drawings and presentations are consistent with your design intent. Styles in SketchUp are a combination of settings that control the appearance of your 3D model, such as line thickness, color, and shading. When you create a 2D drawing or presentation in Layout, you can use these styles to maintain consistency with your 3D model.

1. Start with the Edge Settings

Change Profiles to 1



Change Color to the above values. This will enable you to define certain objects in Layout in the floor plan or section by tracing with black.

The above rgb values (128,128,128) would give the model a nice dark grey color (pencil look) which is perfect for drafting in Layout.

You can update the existing style by clicking here.

Or you could create a new style by clicking here. To rename the style, simply type in the name and tap 'enter.'

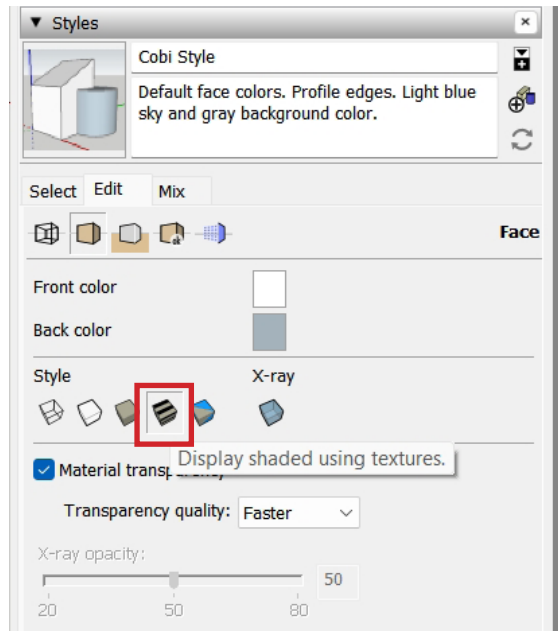


2. Edit the Face Settings

You should use the default face settings.

We will change back color later on in the project.

And by default you should use “Display shaded using textures.”



3. Edit the Background Settings

