

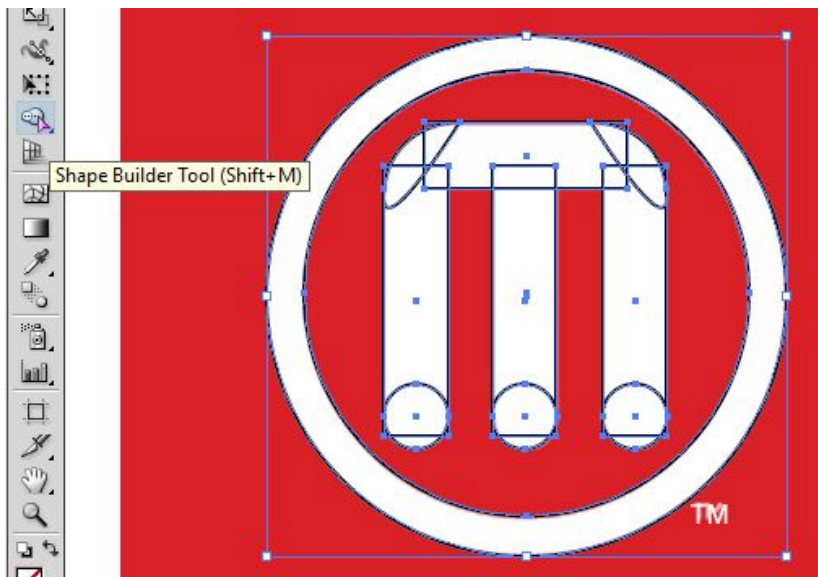
Note: In this tutorial, I will be using Adobe Illustrator to create the 2D Vector image, but you may use free software like GIMP, Inkscape, 123D Design and others to accomplish the same task.

Artistic Note: There are two types of 2D digital art: Raster and Vector graphics. Raster graphics, or bitmaps, use pixels to create their art. Vector graphics use points, lines and curves determined by an algorithm. To make a 2D image into a 3D model, you need that algorithm, so we will be creating vector images today.

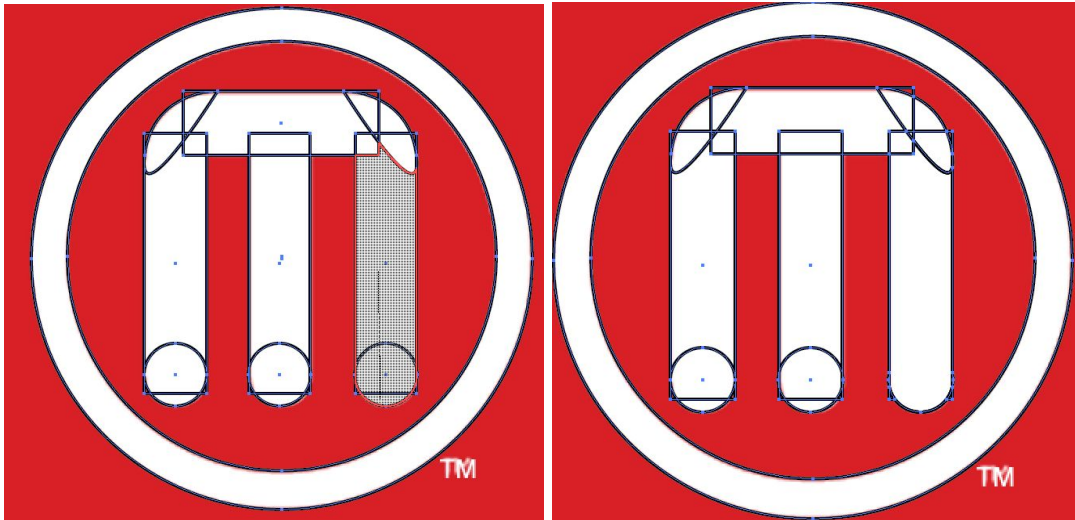
1. Open the 2D art software of your choice. I am using Adobe Illustrator. Create a new file. The size doesn't matter but I am doing 12 inches by 12 inches.
2. Once your workspace is set up, find your reference. For your projects, you can use your blueprint drawings by propping it up next to your screen and referring to it like a still life in art class. You may also scan the blueprints and place the image into the file, or grab an image from online and place it into the file. For this scenario, I will grab an image from online and add it to my file by clicking *File* → *Place...* and finding it in the dialogue box.
3. Inspect your Tools Panel. There will be Shape tools to create rectangles, ovals, polygons and stars. Try overlapping different shapes to create the complex shape of your design. For more organic creations, you may use the Pencil tool, where you can free-draw your shape. If you are experienced with Vector art, you may try your hand at the Pen tool.



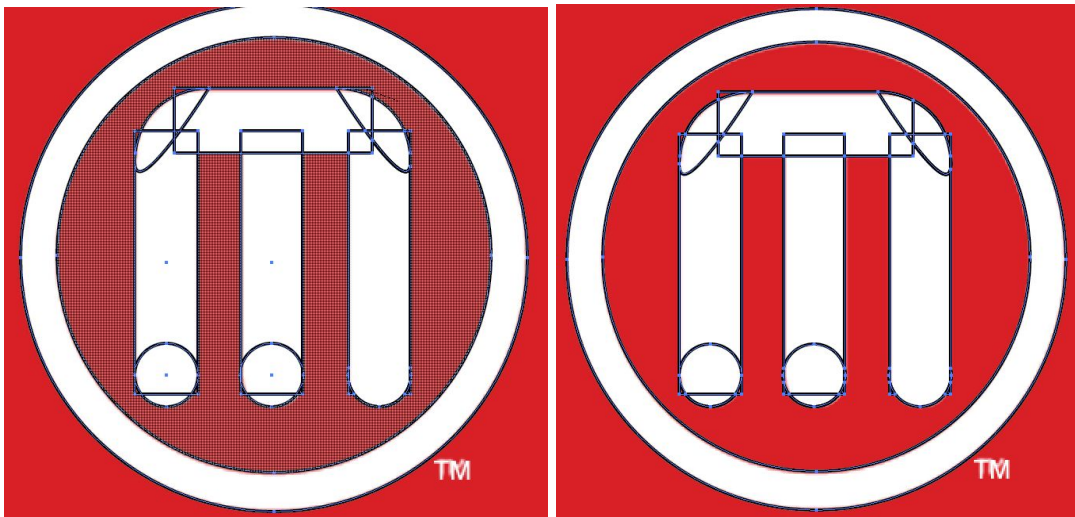
4. Use a mix of all 3 if you can. Once every aspect of your image is traced, we will use the Shape Builder tool to combine and subtract the shapes we made. Click Ctrl+A to select all, then Shift+Click the reference to deselect it from your grouping. Then click the Shape Builder tool on the right.



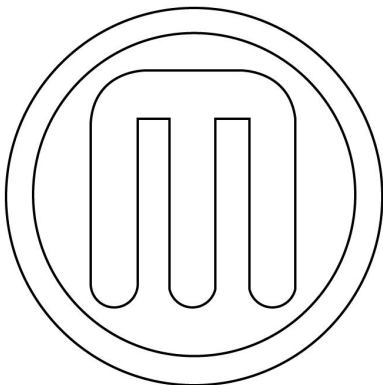
5. To combine objects, click and drag within shapes to create this checkered pattern between them. When you release your mouse button, the objects will be joined as one.



6. To subtract, press and hold the Alt key while clicking and dragging your mouse. Whatever is part of that checkered pattern will be subtracted from the grouping.



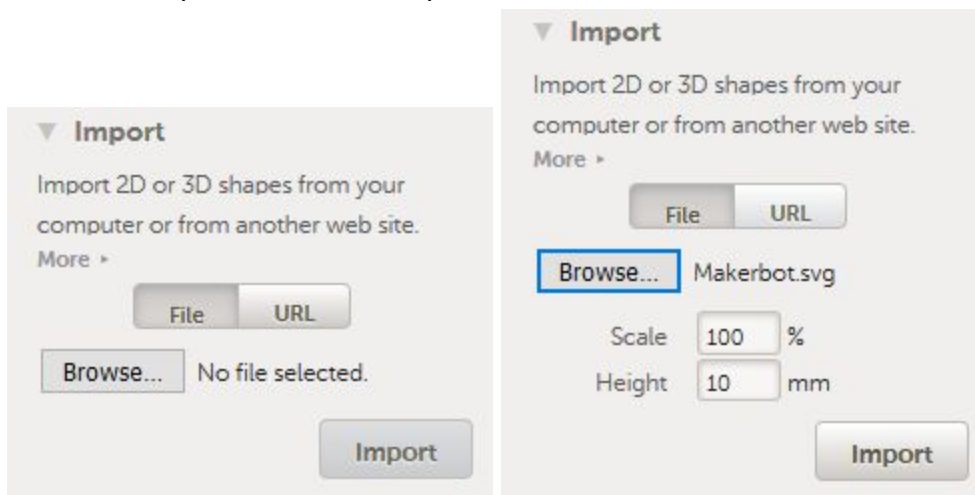
7. Once your creation is complete, select your reference and delete it by pressing the Delete key.



8. Save your creation by going to *File* → *Save As...* and choose .SVG as the file format in the dialogue box.



9. Open Tinkercad and create a new design. In the Objects Panel on the right, click on the Import category. With the File button clicked (not the URL button) click the *Browse...* button and find your .SVG file in the dialogue box. Click Open to close the dialogue box, then in the Import menu, click Import.



10. Voila! The object is created! You are now free to modify it however you choose as a 3D model.

