



SmartSpace[®]

Generating a Color Editable SVG

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Generating a color-editable SVG

This guide takes you through converting a 3D model into a 2D graphic and editing its code so that its color can be changed within SmartSpace.

The guide covers the following steps:

- [Exporting a file from SketchUp in PDF format](#)
- [Editing the PDF file in Illustrator](#)
- [Exporting the file from Illustrator in SVG format](#)
- [Editing the SVG's code to make it color adjustable](#)
- [Importing the image for use as a representation in SmartSpace](#)

The examples show the conversion of a 3D drawing of an AC generator into a 2D SVG. The source file for the example is provided in a zip file [ColorEditableSVG.zip](#) on the Ubisense Documentation Portal at <https://docs.ubisense.com/portal/Content/Downloads/Files/>. If you want to work through the instructions step by step, download and unzip the file to a suitable location.

Software Required

The following lists the software required if you want to work through the example.

SketchUp® Pro

The example in this guide uses SketchUp Pro desktop software available from <https://www.sketchup.com/>.

Note: You cannot use the free web-based version of SketchUp to create a 2D graphic in SVG format from a 3D SketchUp drawing.

Adobe® Illustrator® (trial version)

If you do not have a copy of Adobe® Illustrator®, you can download a free seven-day trial of the software.

Go to <https://www.adobe.com/uk/products/illustrator/free-trial-download.html#x> and follow the instructions on the Adobe website.

Note: You will be required to supply payment details during the download process.

Notepad++

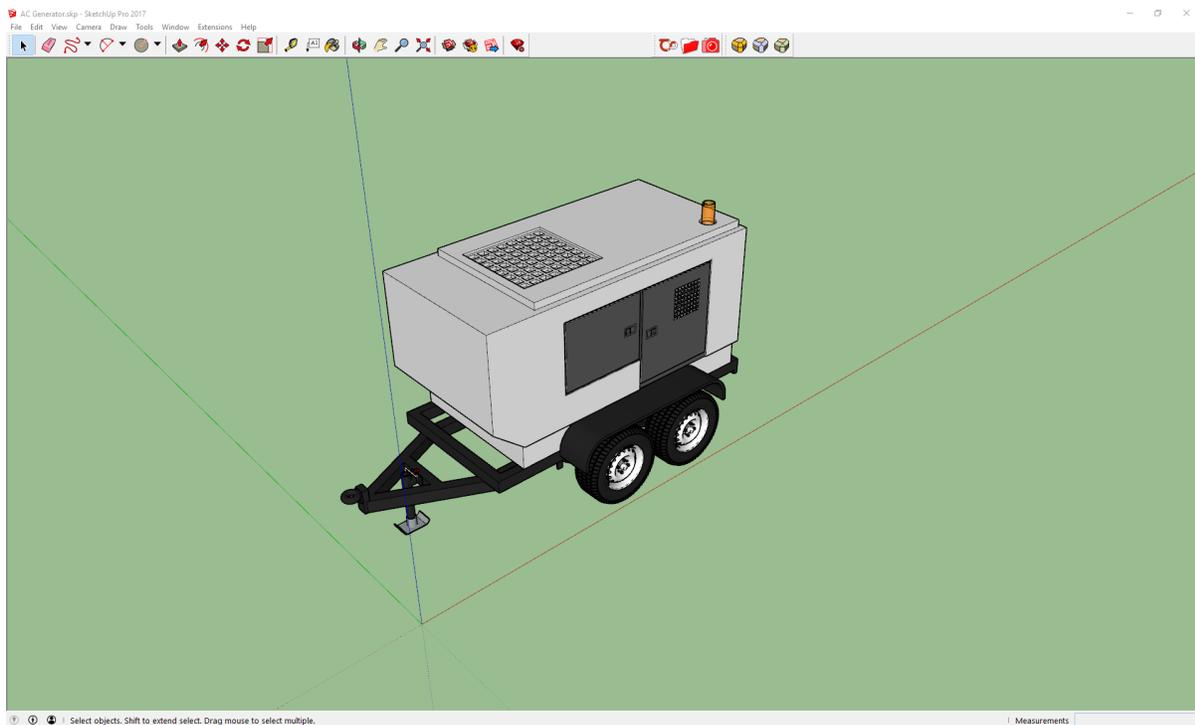
You will need access to a text editor to edit the SVG. The example in this guide uses Notepad++. You can download the Notepad++ software from <https://notepad-plus-plus.org/download/> or use your preferred text editor.

Exporting a file from SketchUp in SVG Format

Opening the file in SketchUp

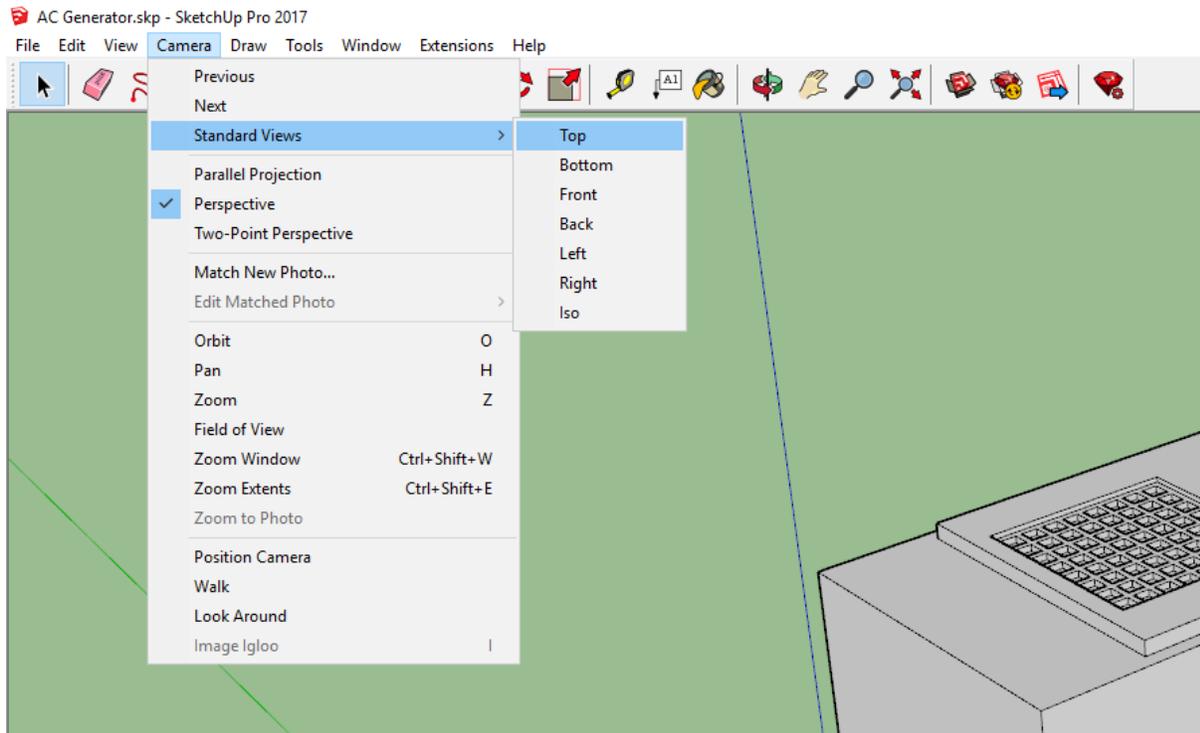
1. Open SketchUp by typing **sketchup** in the Start menu. The SketchUp startup window is displayed.
2. Open a new SketchUp document by choosing **File > New (Ctrl+O)**, going to the directory where you unzipped the example files, and choosing **AC Generator.skp**:

This will open the document in SketchUp and the window will look like this:

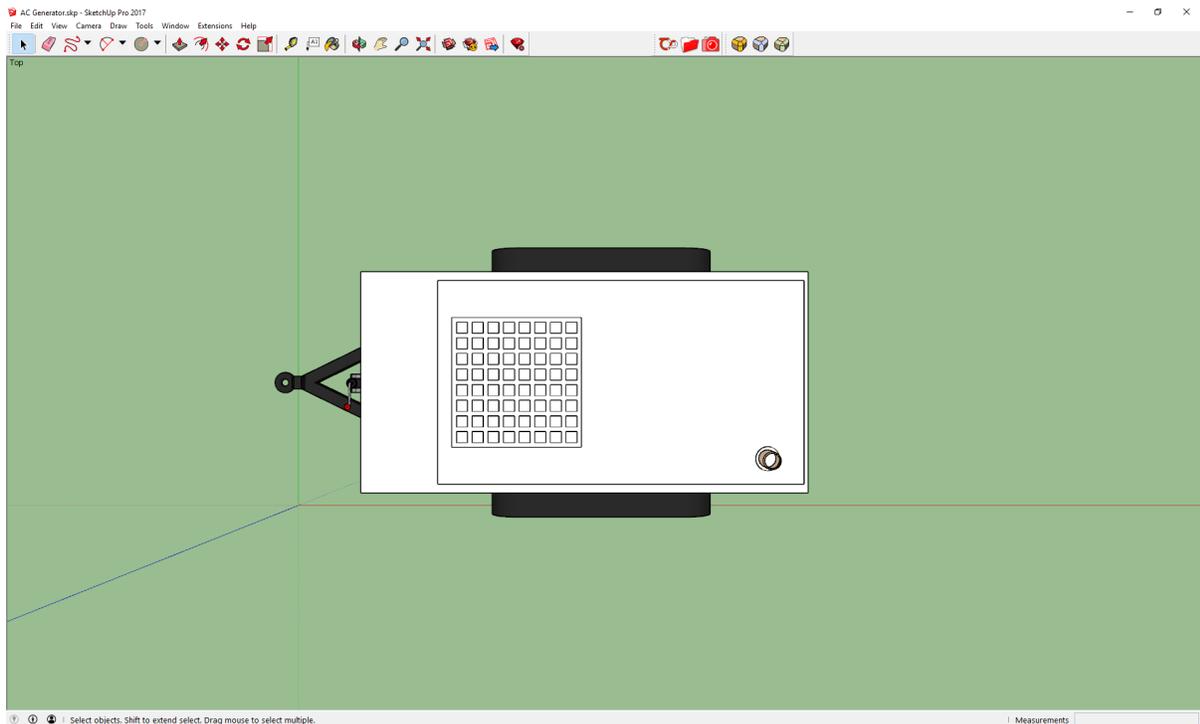


Editing the model for export

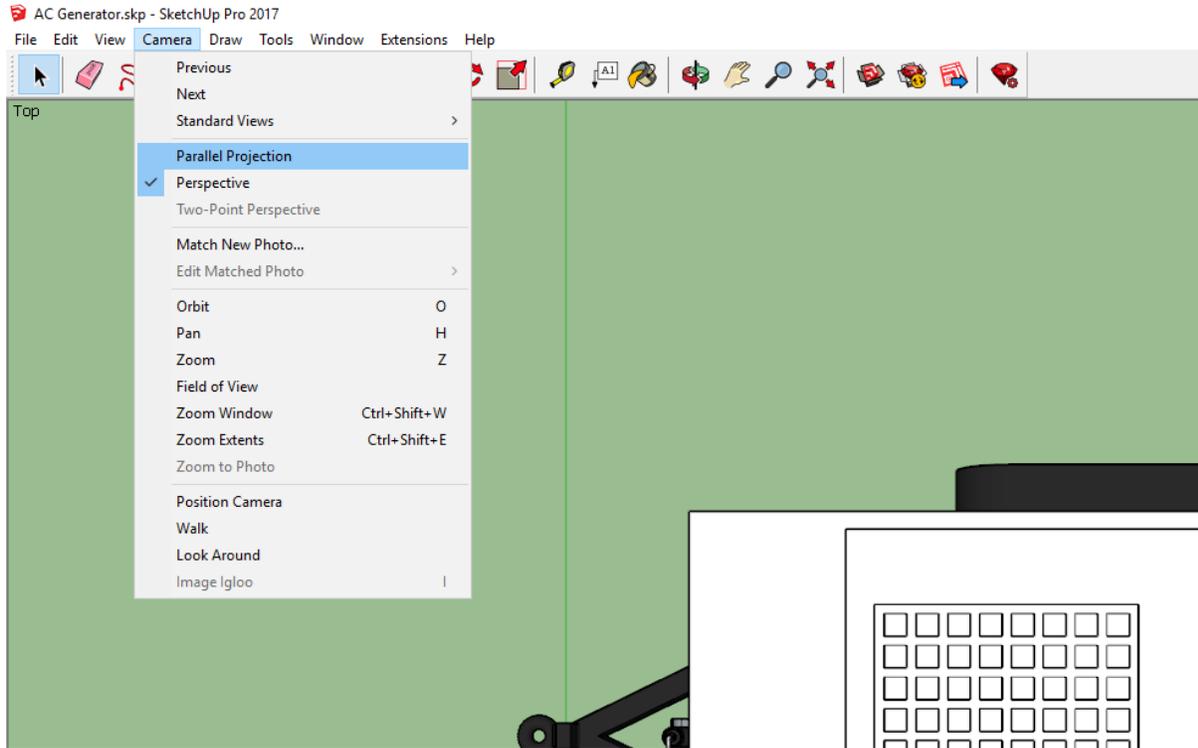
Next change the view in SketchUp so you are looking down on the object. Choose **Camera > Standard Views > Top**.



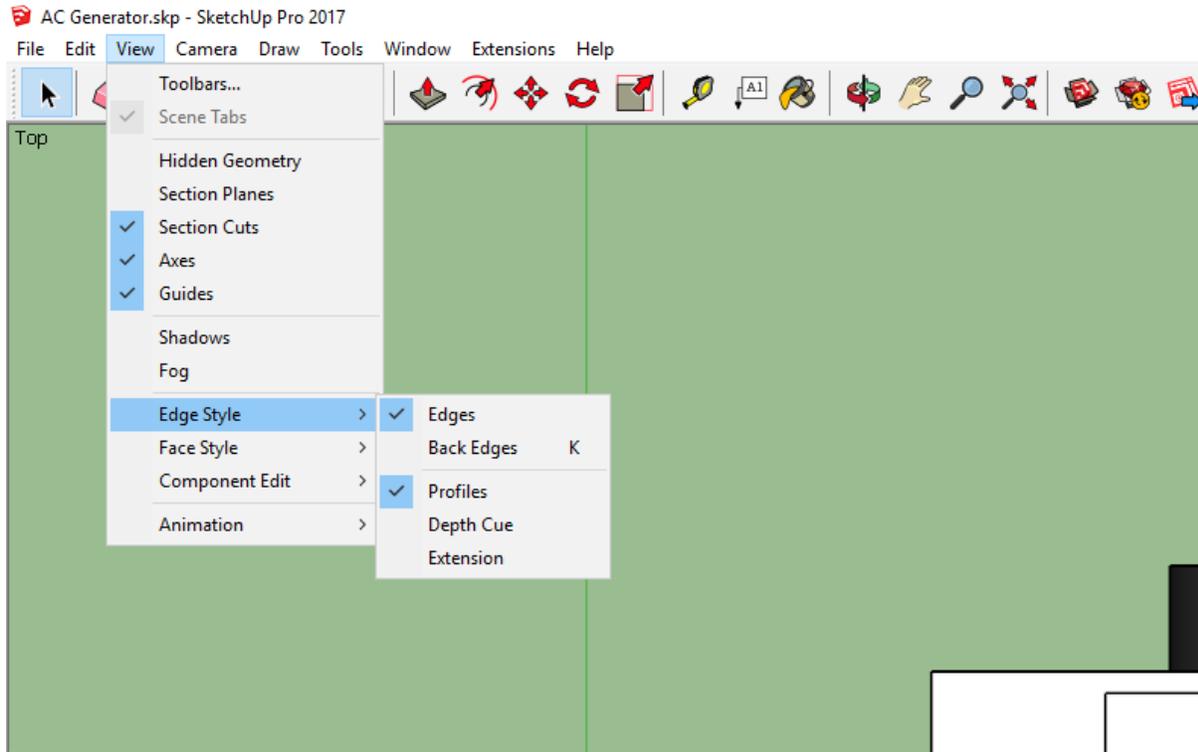
This should now be the view:



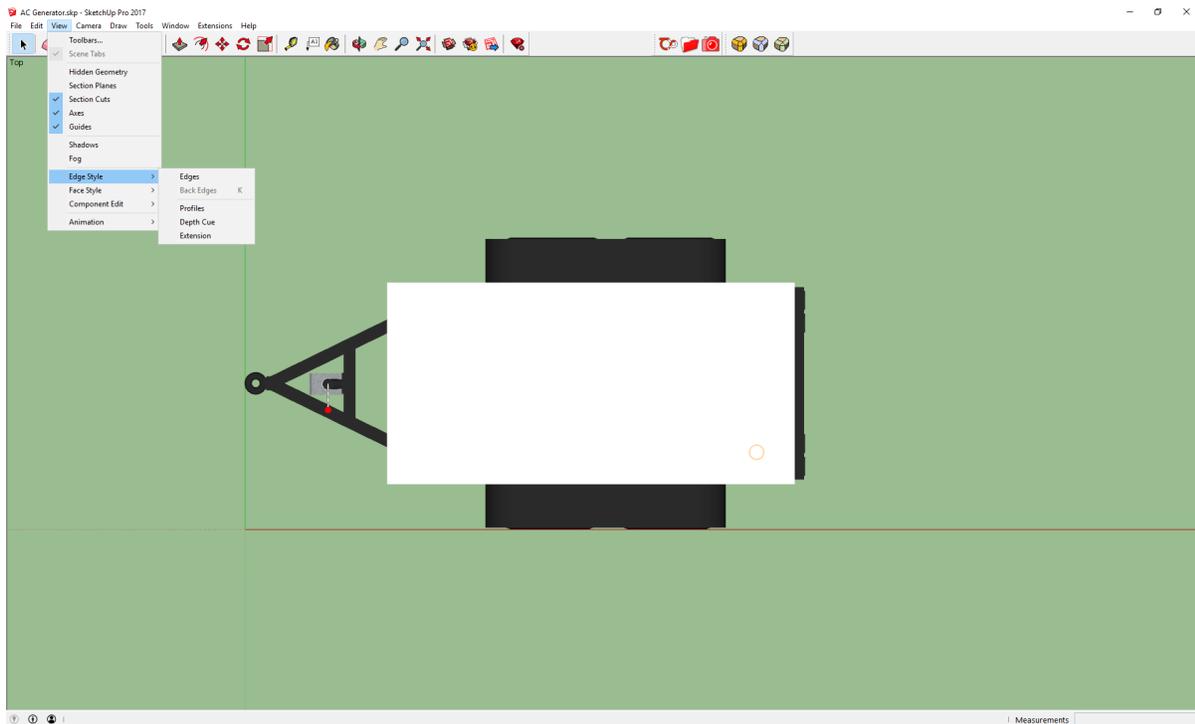
Next change the viewing mode from “perspective” to “parallel projection”: Choose **Camera > Parallel Projection**.



Next remove the outlines of the model by choosing **View > Edge Style** and deselecting **Edges** and **Profiles**.



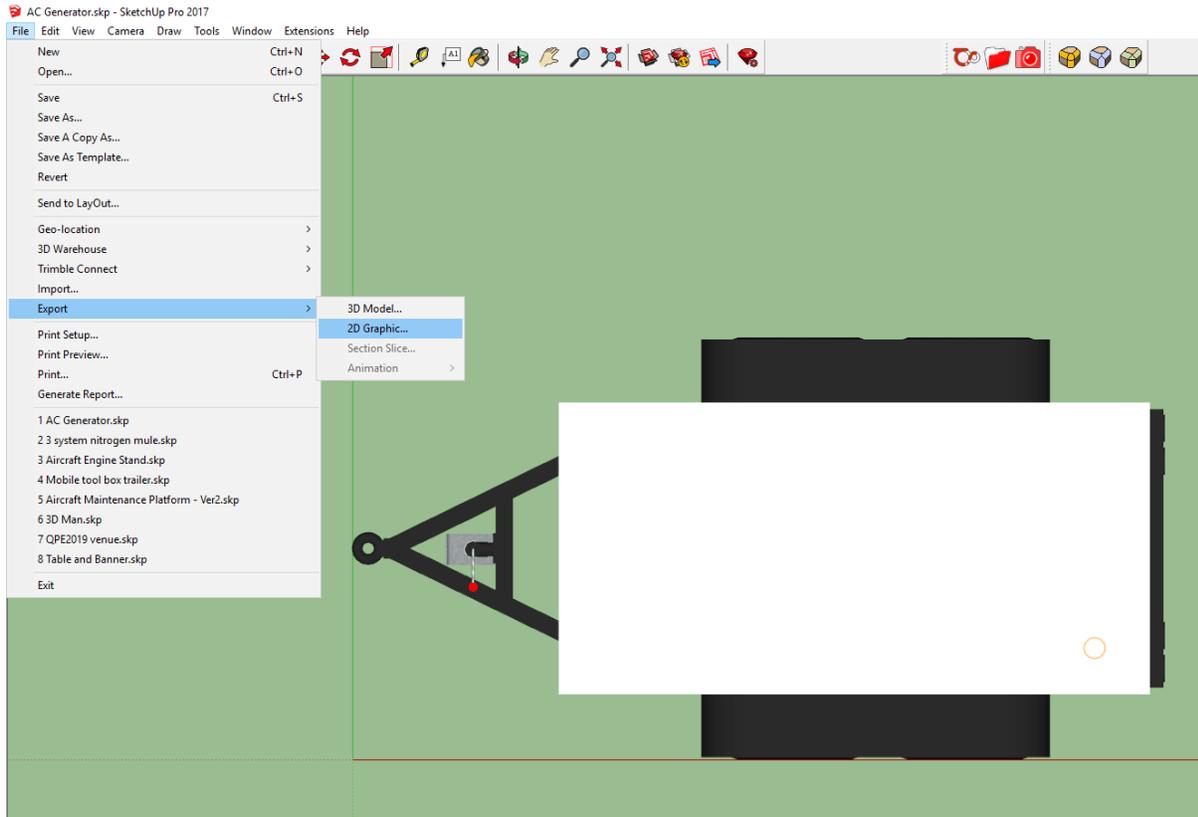
Once deselected the ticks will disappear beside Edges and Profiles and the object should look like this:



Saving the model as a PDF

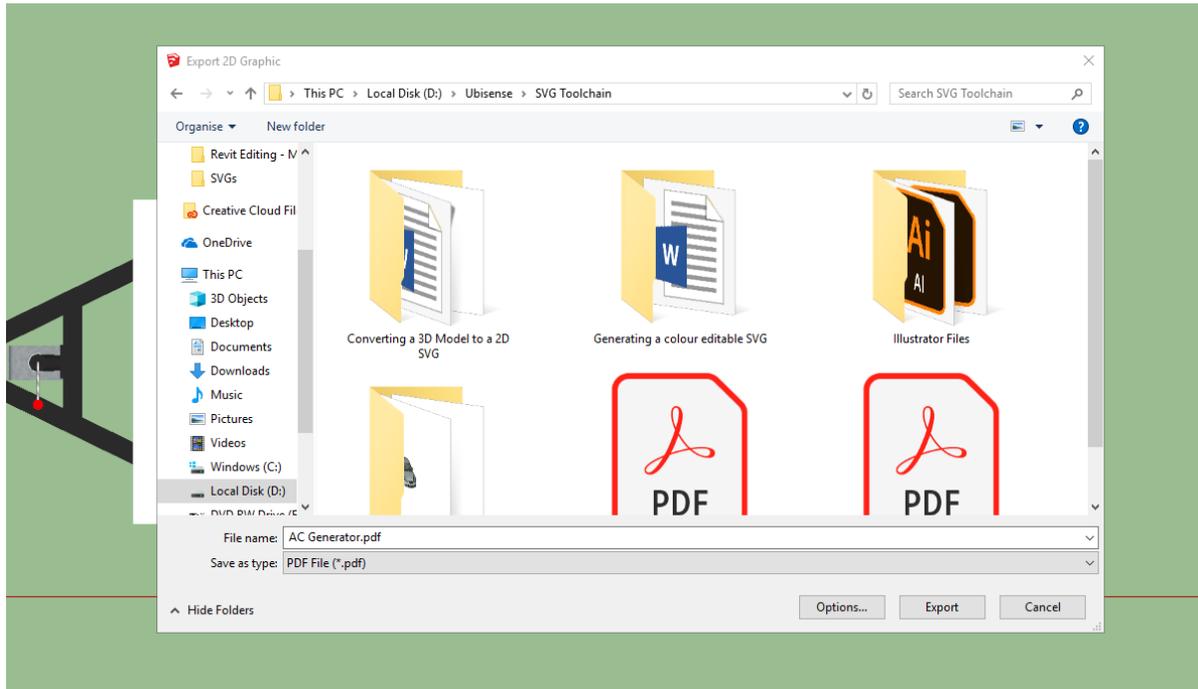
With the model lined up, choose **File > Export > 2D Graphic**.

Exporting a file from SketchUp in SVG Format



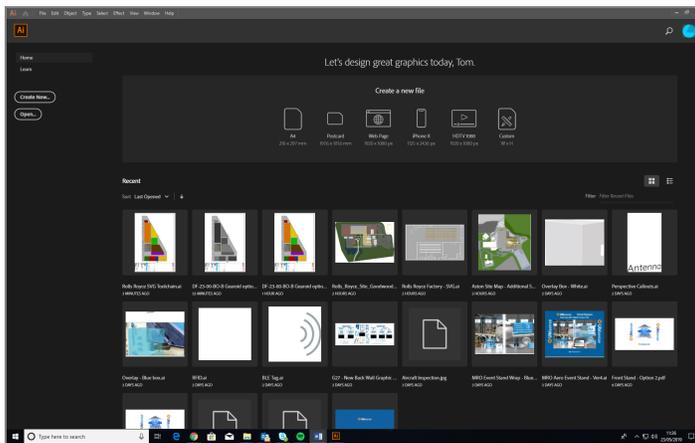
Next the Export 2D Graphic dialog will appear: make sure the document is saved as the file type "PDF".

Exporting a file from SketchUp in SVG Format

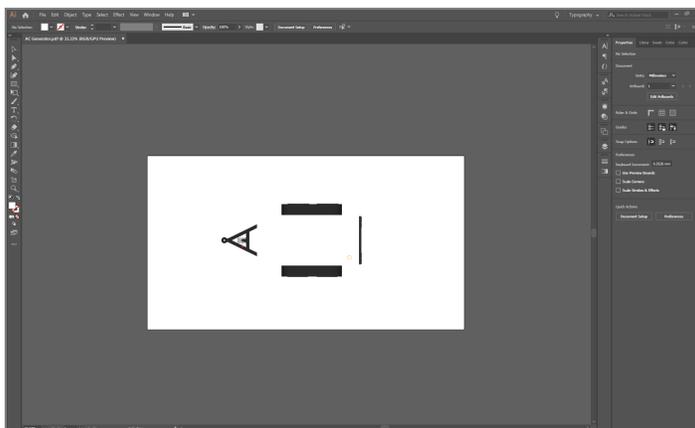


Editing the PDF file in Adobe® Illustrator®

1. Open Illustrator by typing **illustrator** in the Start menu. The Illustrator startup window is displayed.



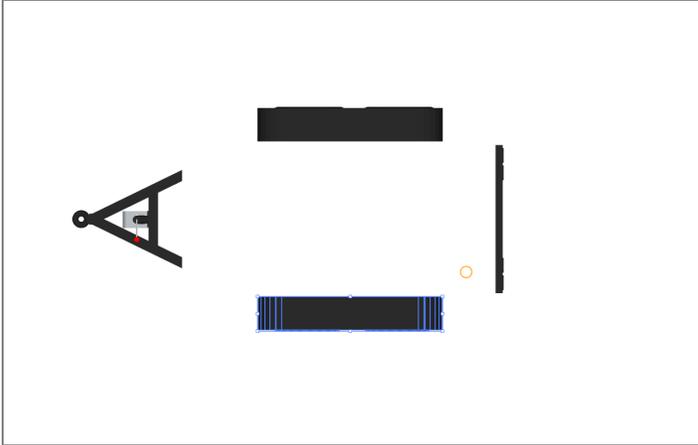
2. Choose **File > Open**, navigate to the location where you saved the PDF file, and open the file:



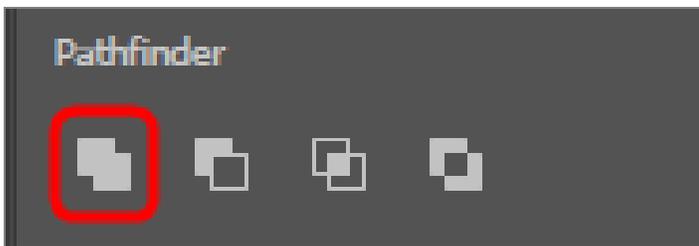
3. To simplify the vector file, select areas of similar color and use the Pathfinder tool to connect the shapes.

Display the Pathfinder tools by choosing **Window > Pathfinder** or by pressing **Shift+Ctrl+F9**.

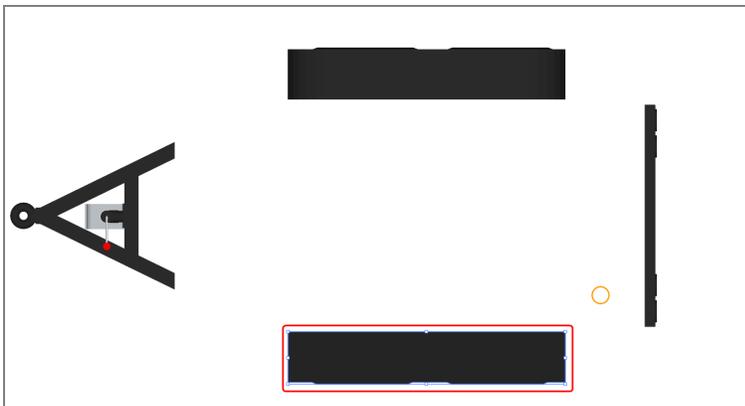
For example, click and drag the cursor over the wheels at the side until all the necessary parts are selected. The selected shapes should look like this:



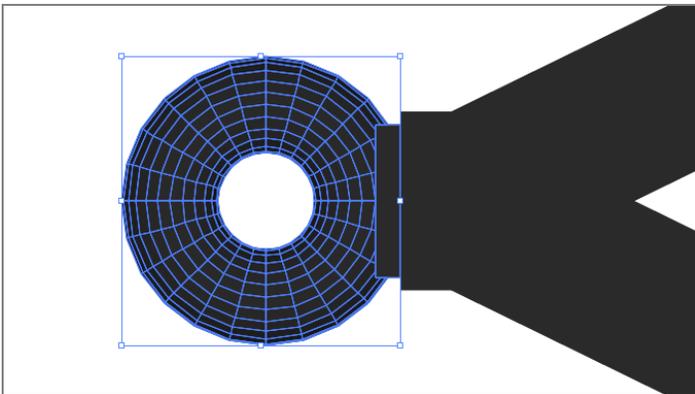
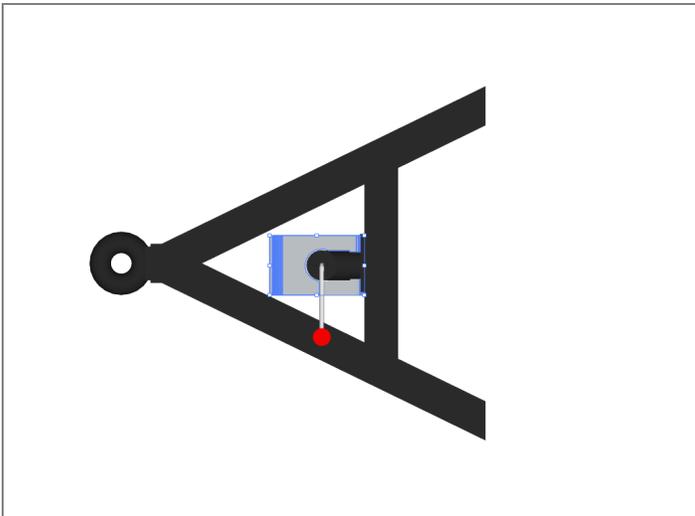
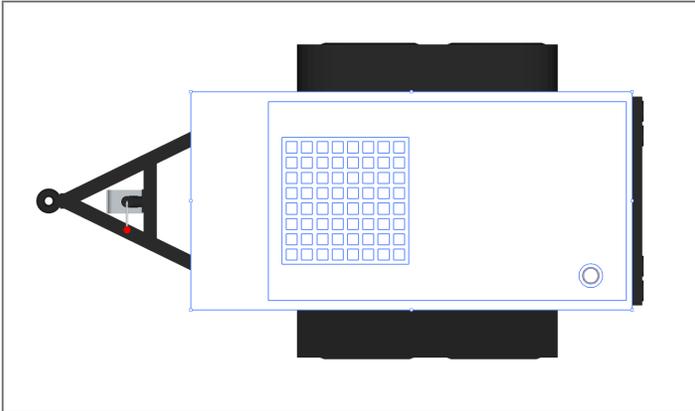
With the shapes selected, click the Unite (Pathfinder) icon to join the shapes:



The joined shape should now look like this:

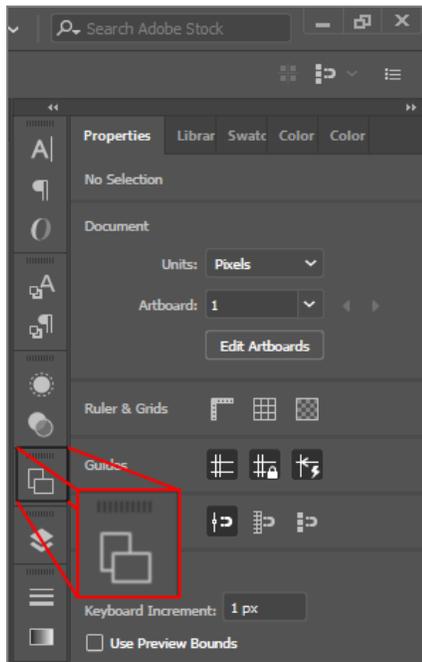


4. Carry out this same process for any sections composed of multiple shapes of a similar color, some example pictures of sections this can be performed on are as follows:

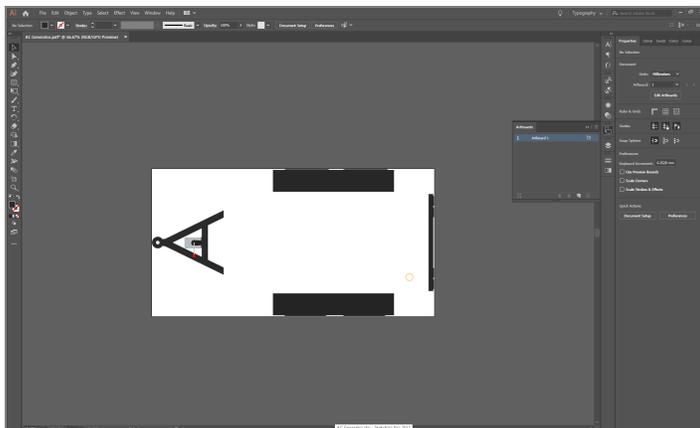


5. Finish by resizing the artboard so it tightly fits around the object.

- a. Choose **Windows > Artboards**. If you are using the Essentials Classic workspace you can choose the Artboards icon from the tools on the right-hand side of the workspace:



- b. Select **Artboard 1** in the Artboards panel and choose **Object > Artboards > Fit to Artwork Bounds**.

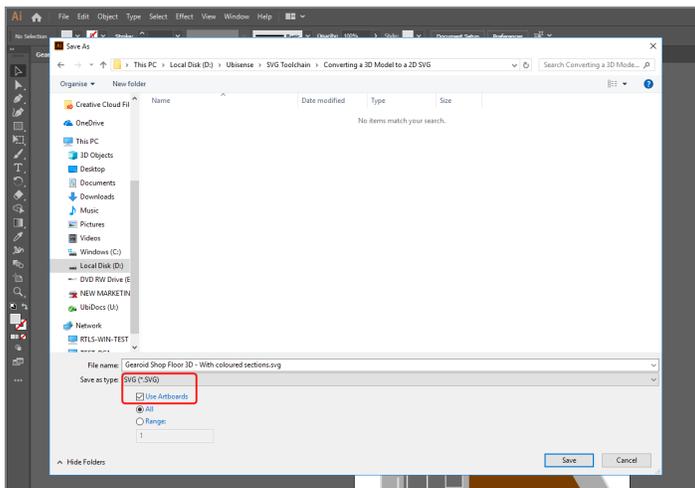


Exporting an SVG file from Illustrator

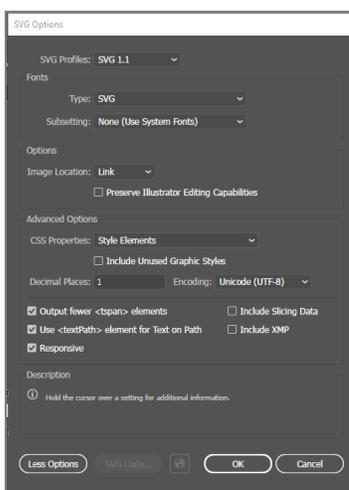
When the file has been cleaned it can be saved as a vector file (.SVG).

With file editing complete in Illustrator, the final step is to save the result as a vector file (.SVG).

1. Choose **File > Save As...** and in the dialog, ensure the file type is set to **SVG (*.SVG)** and that **Use Artboards** is checked:



2. Give the file a name.
3. Click **Save** and then click **OK** to save the default settings in the SVG Options dialog:

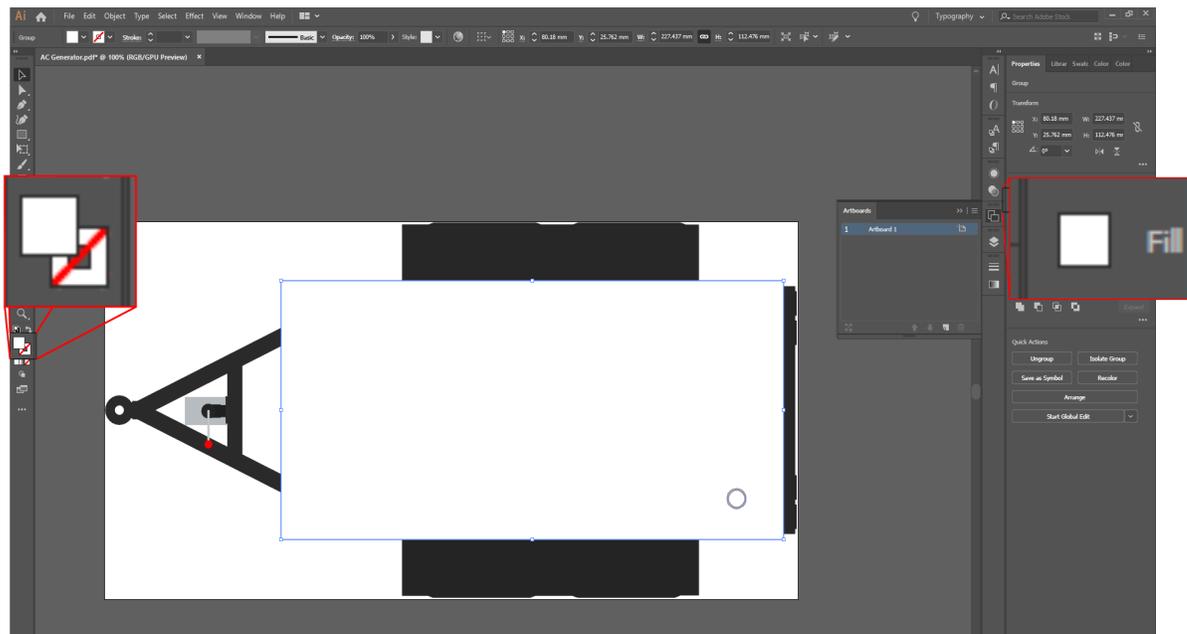


This will provide you with an SVG file which can be successfully imported into SmartSpace.

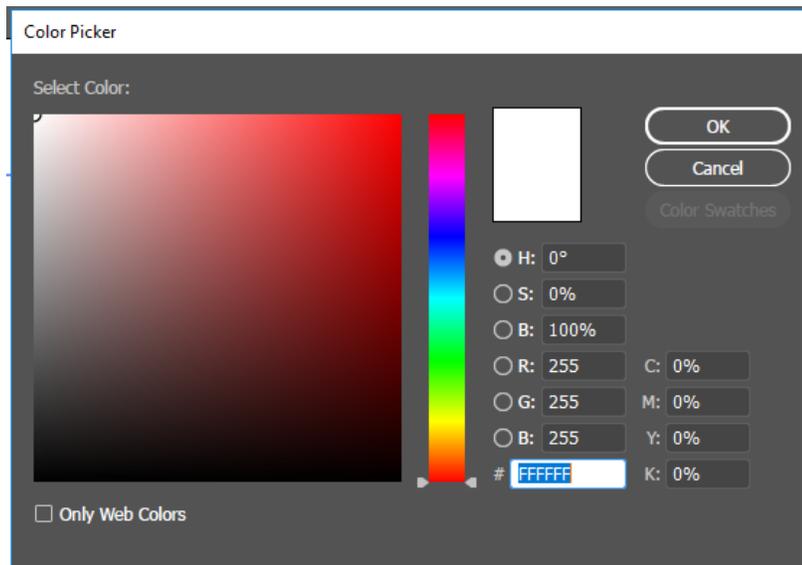
Adjusting the SVG's Code

Now that the SVG has been saved, the next step is to make it color editable. We only want to make the main body editable and to do this we need to find out its color value.

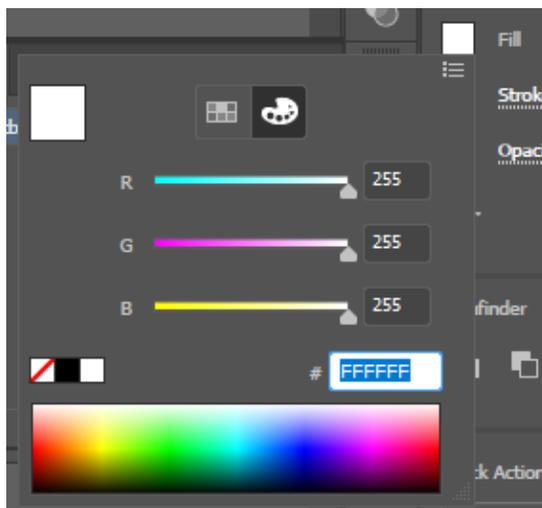
1. Select the main body color in illustrator, then select the color selection tool on either the left or right side of the workspace:



- If you select the left option, the following dialog will appear:



- If you select the right option, the following window will appear (make sure the paint palette icon is selected):

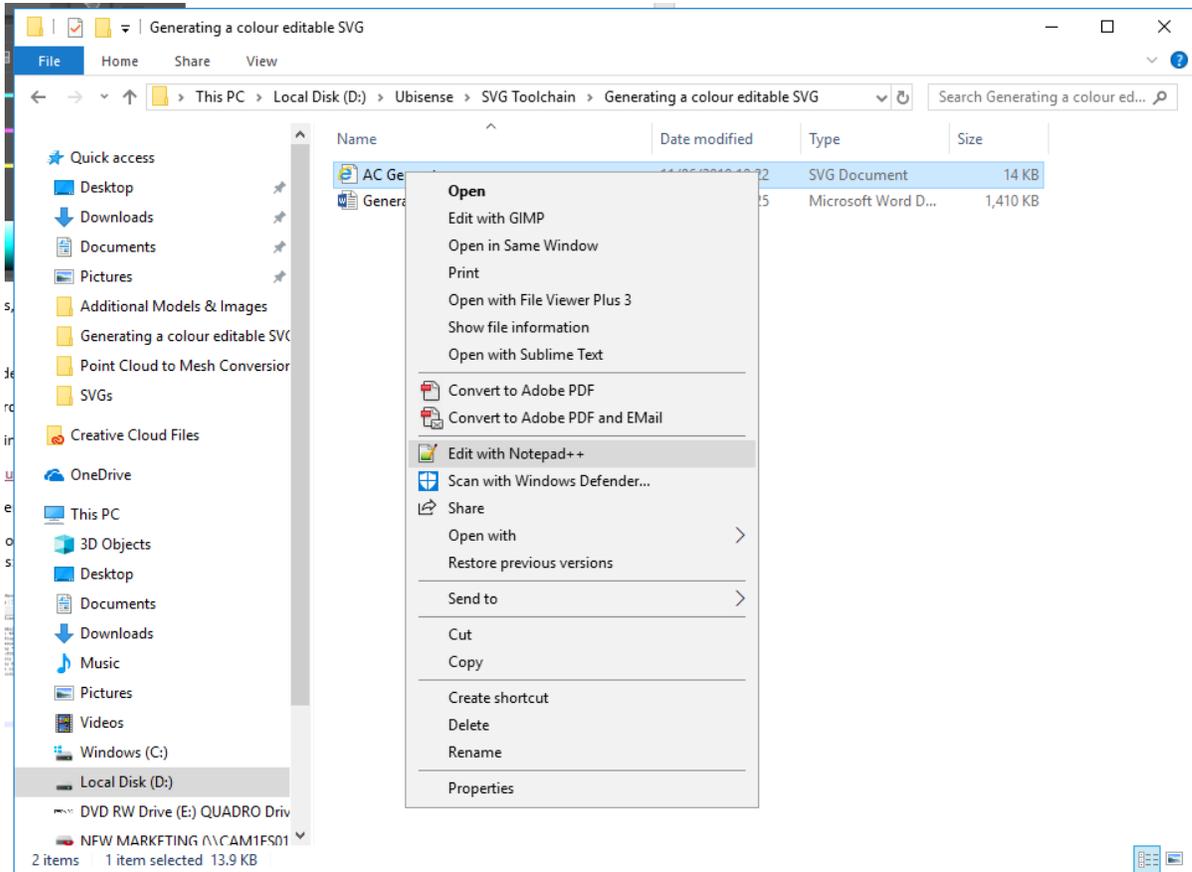


2. In either dialog, the color hex code can be found at the bottom. In this instance the code is:
#FFFFFF

Remember this code as it will be important later.

Now use Notepad++ (or your preferred text editor) to edit the code of the SVG.

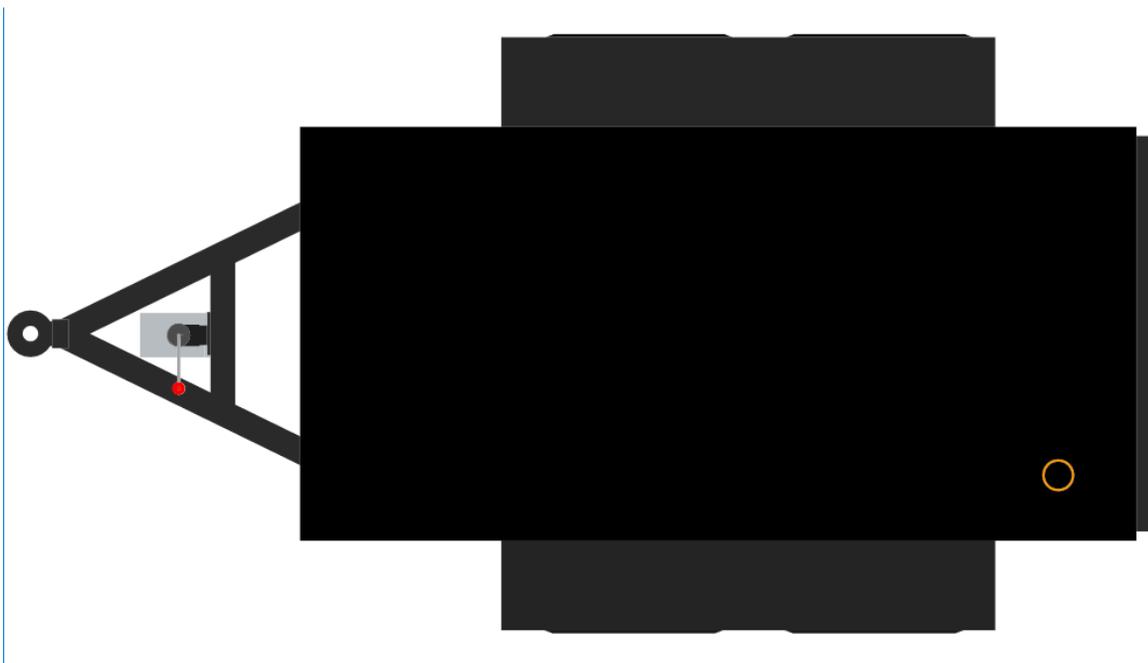
1. To edit the *code* of the SVG, in File Explorer right click the filename and choose **Edit with notepad++**.



2. In the Notepad++ window you will see a list of all the color values (Fill Colors):


```
*D:\SmartSpace Models\MRO Aero Event Factory\Additic
File Edit Search View Encoding Language Settin
change.log x AC Generator.svg x
1 <?xml version="1.0" encoding="ut
2 <!-- Generator: Adobe Illustrato
3 <svg version="1.1" id="Layer_1"
4     viewBox="0 0 890.1 464.9" s
5 <style type="text/css">
6     .st0{fill:#111111;}
7     .st1{fill:#2A2A2A;}
8     .st2{fill:#272727;}
9     .st3{fill:#242424;}
10    .st4{fill:#FF9800;}
11    .st5{stroke:none;}
12    .st6{fill:#B7BCC0;}
13    .st7{fill:#F40000;}
14    .st8{fill:#1F1F1F;}
15    .st9{fill:#A3A3A3;}
16    .st10{fill:#4C4C4C;}
17    .st11{fill:#1E1E1E;}
18 </style>
19 </svg>
```

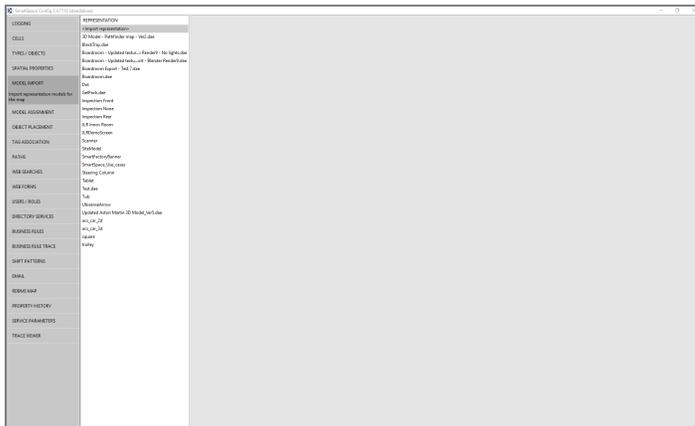
Now if the SVG is opened it should look something like this:



Importing the image into SmartSpace

This section describes how you can import your color-editable 2D image into SmartSpace using the SmartSpace Config application. If you need further information on using SmartSpace Config, see *Configure SmartSpace* on the Ubisense Documentation Portal.

1. Run SmartSpace Config and open the MODEL IMPORT tab:



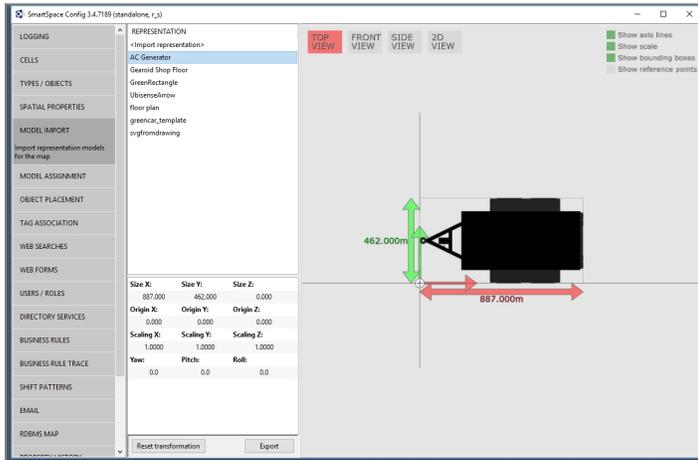
2. Double-click <Import representation>.
3. Navigate to the SVG file which you exported from Illustrator and select it.

The filename, including its suffix, becomes the default name of the representation. Edit the name as required.

4. Click **Save**.

The Model import workspace should look like this:

Importing the image into SmartSpace



If necessary, you can resize and set the origin of the model. See *Model import* for further information on importing representations into SmartSpace.

You can now associate the model with a type, and assign instances of the type different colors either manually or using the Business rules engine.