



SmartSpace<sup>®</sup>

Converting 3D Models to 2D  
SVGs

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## Converting a 3D model to a 2D SVG

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This guide takes you through the steps required to convert a 3D drawing into a 2D graphic in SVG format suitable for import into SmartSpace. Two tools are used in the process: SketchUp® to correctly orient the 3D drawing and export it in a 2D format; Adobe® Illustrator® to edit the 2D image and export it in SVG format.

The guide will cover the following steps:

- [Correctly orienting a model for export in SketchUp](#)
- [Exporting a 2D model from SketchUp](#)
- [Editing a PDF file in Illustrator](#)
- [Exporting an SVG file from Illustrator](#)
- [Importing the image for use as a representation in SmartSpace](#)

The example shows the conversion of a 3D drawing of a shop floor into a 2D SVG. The source file for the example is provided in a zip file at <https://docs.ubisense.com/portal/Content/Downloads/Files/3Dto2DExample.zip>. If you want to work through the instructions step by step, download and unzip the file to a suitable location.

## Software required

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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.

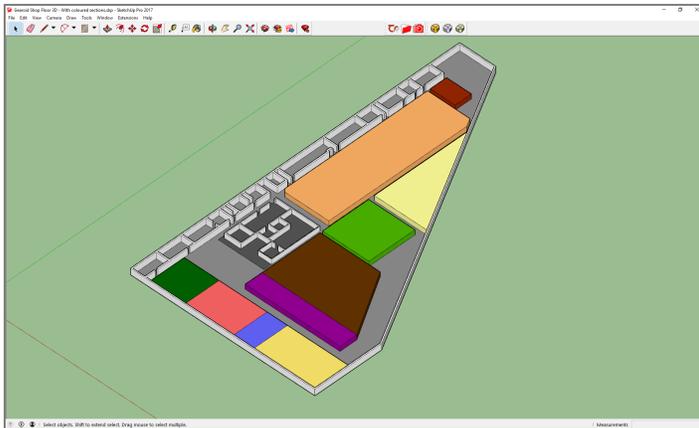
Go to <https://www.adobe.com/uk/products/illustrator/free-trial-download.html#x> and follow the instructions on the Adobe website.

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

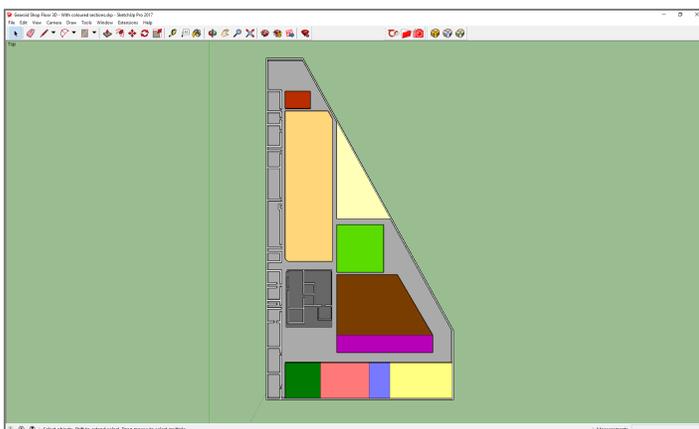
## Correctly orienting a model for export using SketchUp®

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1. Open SketchUp by typing **sketchup** in the Start menu. The SketchUp startup window is displayed.
2. Open the 3D drawing file by choosing **File > Open (CTRL+O)**, going to the directory where you unzipped the example files, and choosing **Gearoid Shop Floor 3D - With coloured sections.skp**:

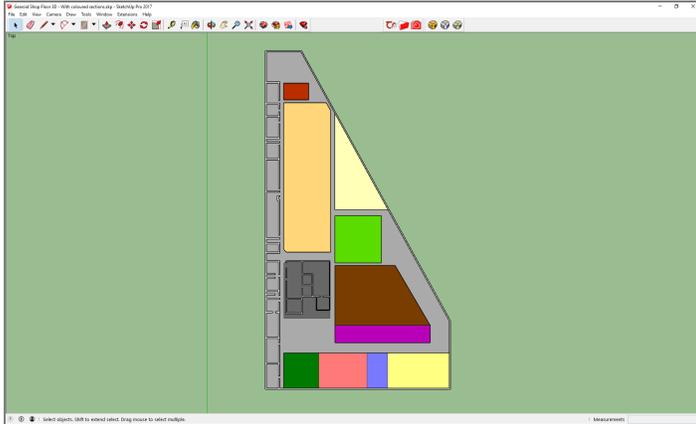


3. Change the view to top-down by choosing **Camera > Standard Views > Top**:



4. Ensure you are in the Parallel Projection viewing mode by choosing **Camera > Parallel Projection**.

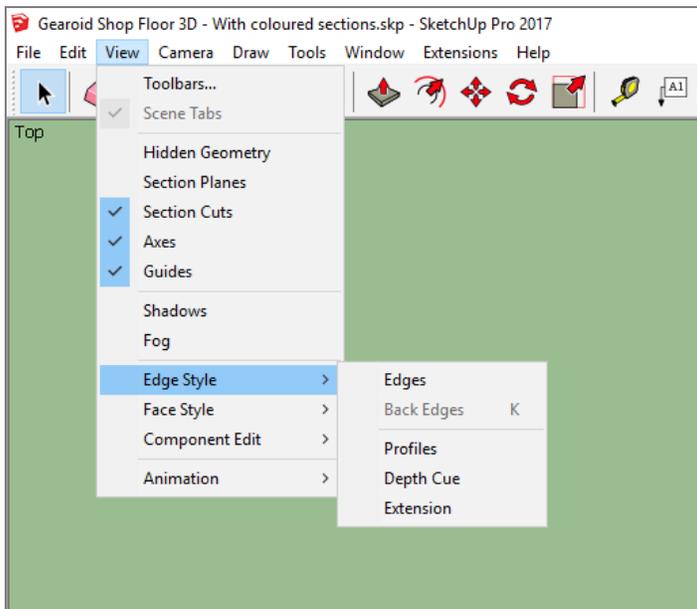
This will allow you to export a cleaner view of the model:



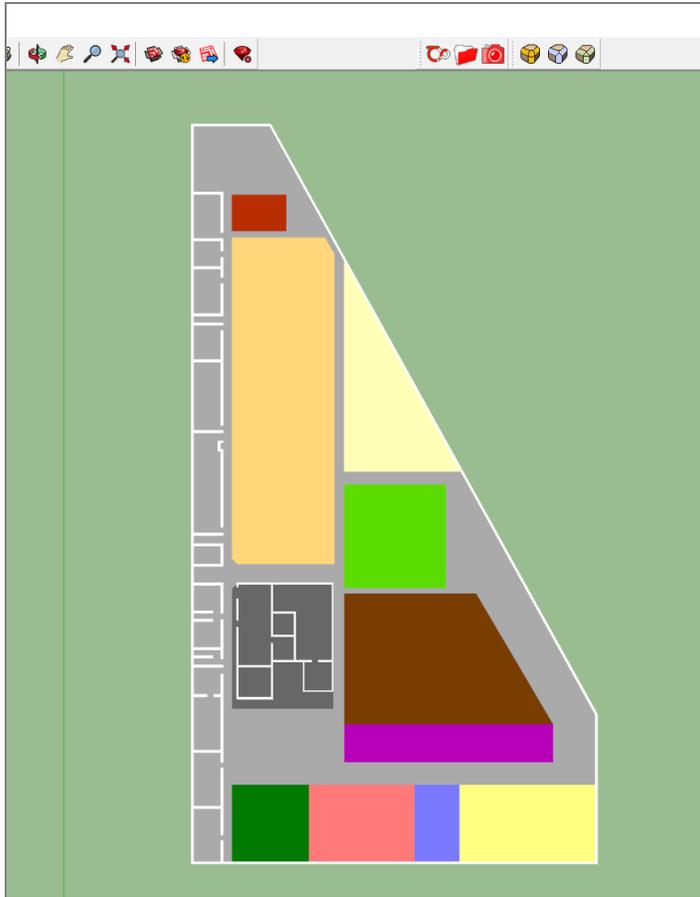
5. Remove the outlines of the model: these will make the SVG unnecessarily complex.

Deselect Edges and Profiles by choosing **View > Edge Style > Edges** and **View > Edge Style > Profiles** respectively.

After deselection, the menu looks like this (there should be no ticks by any of the edge styles):



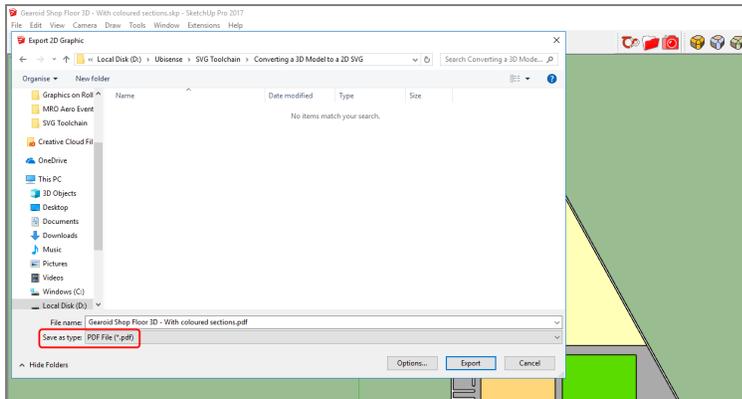
The simplified model looks like this:



# Exporting a 2D model from SketchUp

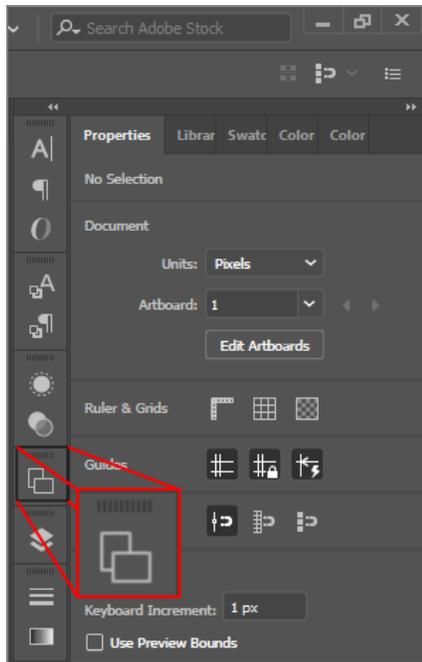
With the model correctly oriented and cleaned up, you can export a 2D file.

Choose **File > Export > 2D Graphic...** and save the file, ensuring its file type is PDF:

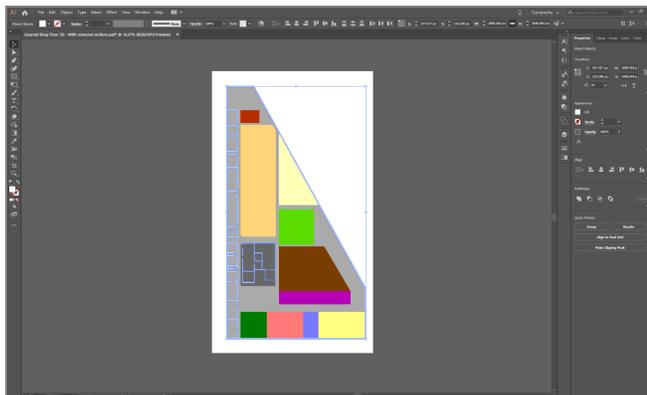




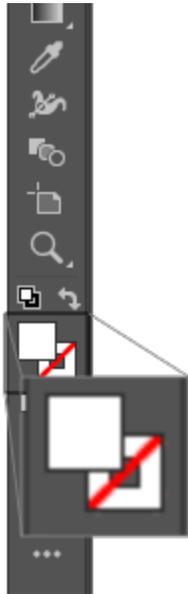
workspace:



- b. Select **Artboard 1** in the Artboards panel and choose **Object > Artboards > Fit to Artwork Bounds**.
4. Set the color of the walls (where you previously removed their outlines in SketchUp).
  - a. Hold down Shift and click on each of the walls to select them all:

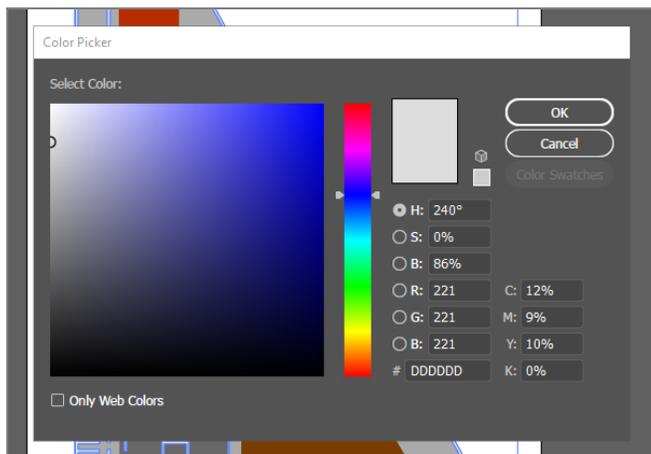


- b. With the walls selected, double-click the Fill icon in the toolbar on the left-hand side of the workspace:

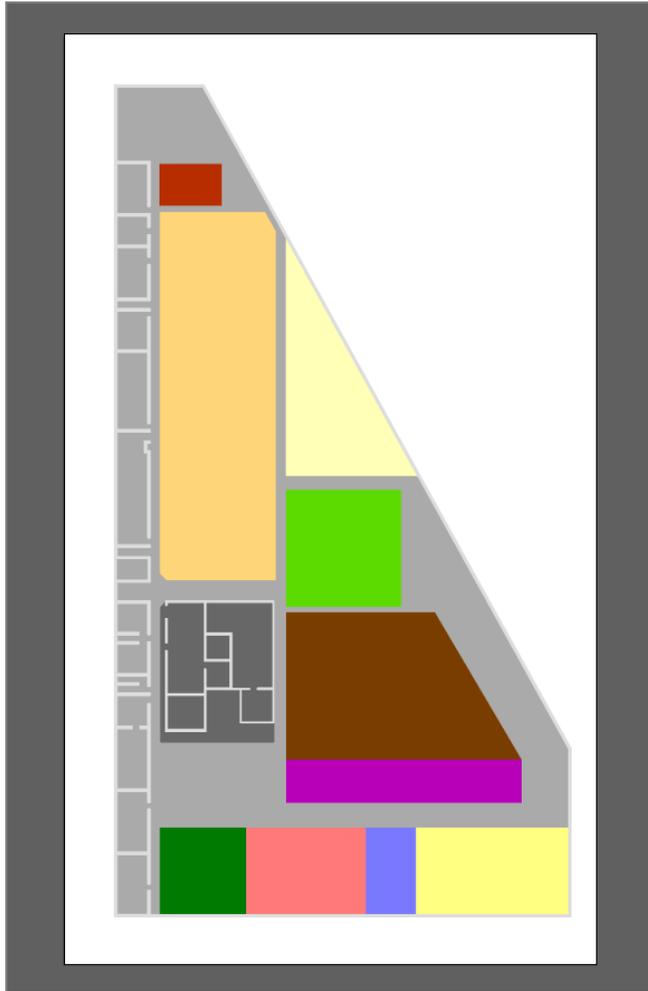


- c. In the Color Picker dialog, drag the circular cursor to select your preferred colour, or type in the colour value (as HSB, RGB, CMYK, Hex#).

For example, enter the RGB values, R: 221 G: 221 B: 221 to choose a light gray:

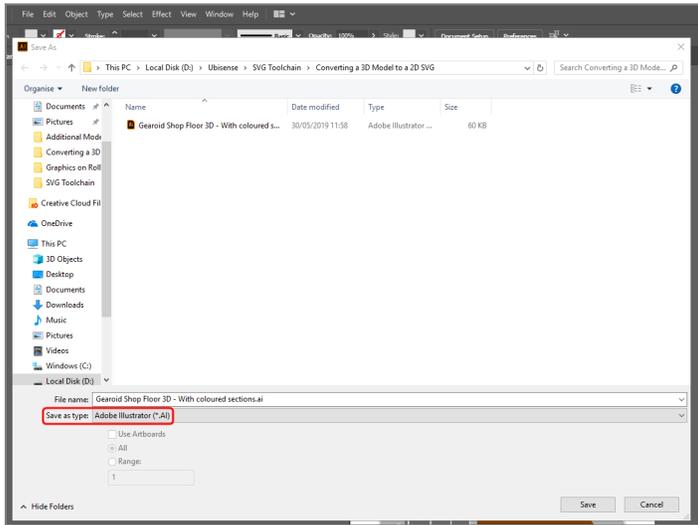


The file looks like this:



5. Choose **File > Save As...** and save the file, ensuring the file type is set to **Adobe Illustrator (\*.Ai)**:

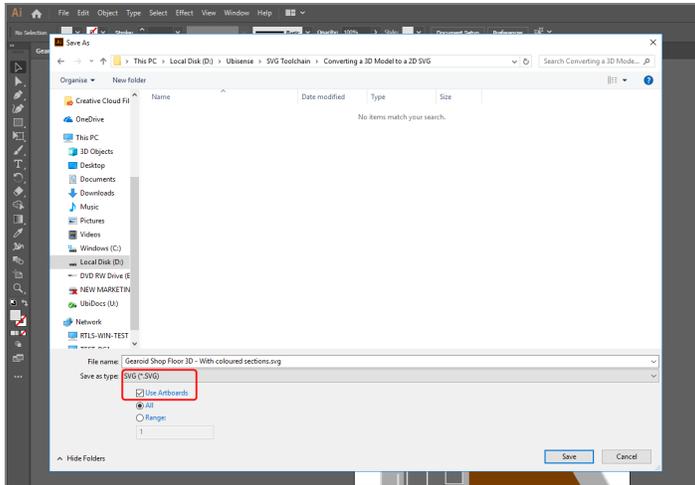
## Editing a PDF file in Adobe® Illustrator®



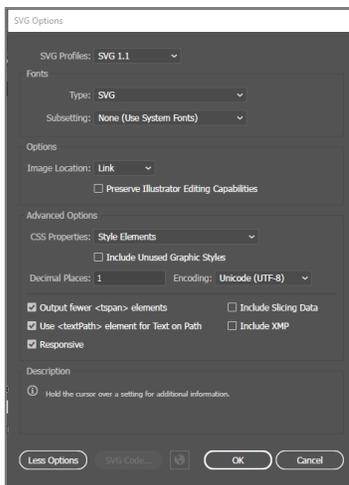
# Exporting a vector graphic from Illustrator

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:



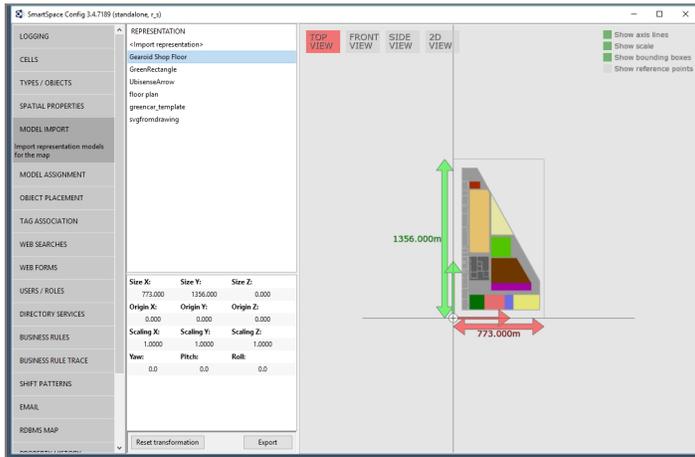
2. Give the file a name.
3. Click **Save** and then click **OK** to save the default settings in the SVG Options dialog:



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

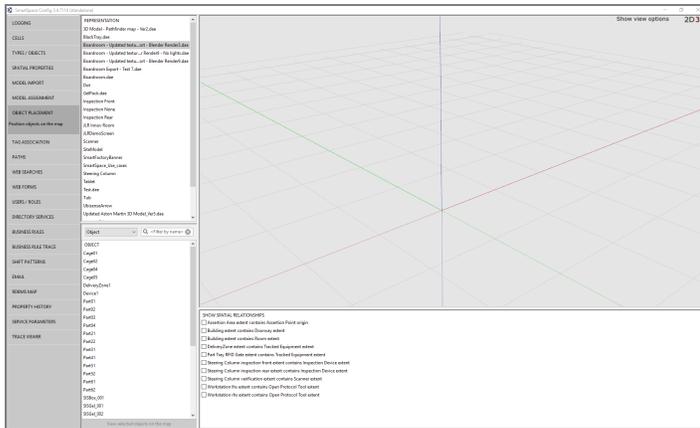


## Importing the image into SmartSpace



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

5. Open the OBJECT PLACEMENT tab.



6. Drag the file that you just imported into the workspace:

