

## SmartSpace<sup>®</sup> Converting 3D Models to 2D SVGs

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## Contents

Converting a 3D model to a 2D SVG	1
Software required	2
SketchUp® Pro	2
Adobe® Illustrator® (trial version)	2
Correctly orienting a model for export using SketchUp®	3
Exporting a 2D model from SketchUp	6
Editing a PDF file in Adobe® Illustrator®	7
Exporting a vector graphic from Illustrator	12
Importing the image into SmartSpace	13

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

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

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 <u>https://www.sketchup.com/</u>.

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)

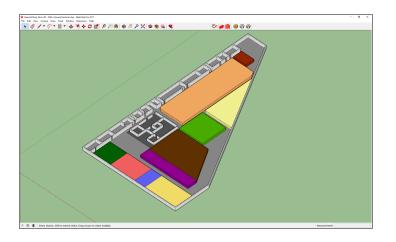
If you do not have a copy of Adobe® Illustrator®, you can download a free seven-day trial of the software.

Go to <u>https://www.adobe.com/uk/products/illustrator/free-trial-download.html#x</u> 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®

- 1. Open SketchUp by typing **sketchup** in the Start menu.The SketchUp startup window is displayed.
- 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:

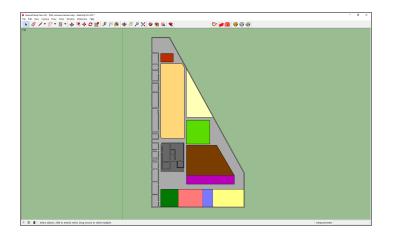


3. Change the view to top-down by choosing **Camera > Standard Views > Top**:



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

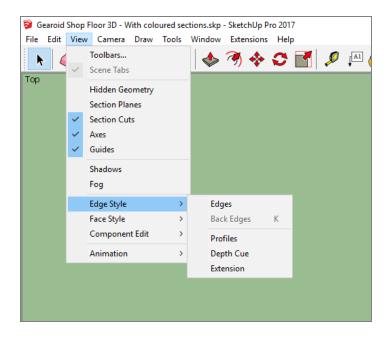
This will allow you to export a cleaner view of the model:

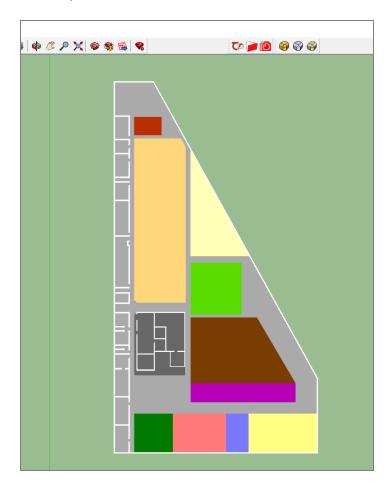


5. Remove the outlines of the model: these will make the SVG unnecessarily complex.

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):



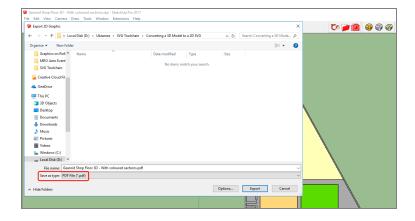


The simplified model looks like this:

## Exporting a 2D model from SketchUp

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

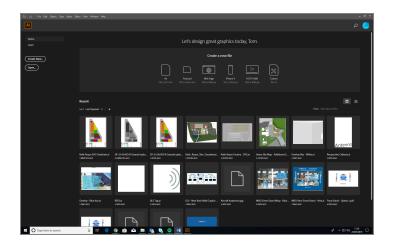
Choose File > Export > 2D Graphic... and save the file, ensuring its file type is PDF:



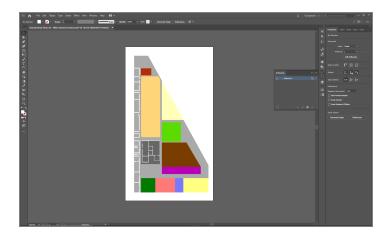
## Editing a PDF file in Adobe® Illustrator®

With the file in 2D format, you can complete the cleanup in Adobe Illustrator.

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

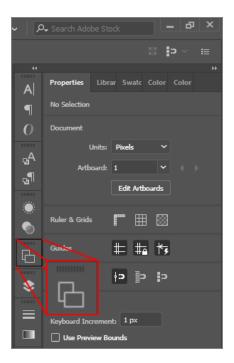


2. Choose **File** > **Open**, navigate to the location where you saved the PDF file, and open the file:

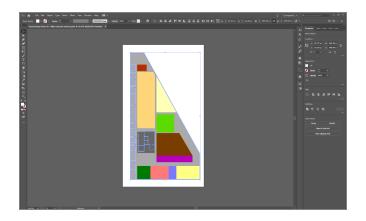


- 3. If necessary, adjust the size of the artboard:
  - a. Choose **Windows** > **Artboards**. If you are using the Essentials Classic workspace you can choose the Artboards icon from the tools on the right-hand side of the

workspace:



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

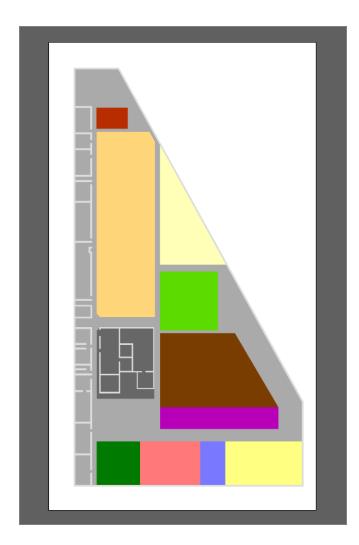


c. In the Color Picker dialog, drag the circular cursor to select your preferred colour, or type in the colour value (as HSB, RGB, CMYK, Hex#).

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

Select Color:				
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		() G:	221	9%
		⊖В:	221	10%
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The file looks like this:



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

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## 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:

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

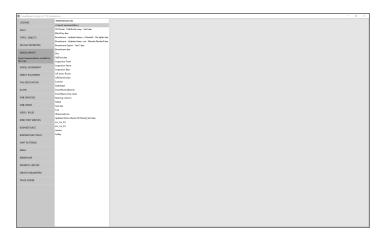


This will provide you with an SVG file which can be successfully imported into SmartSpace.

## Importing the image into SmartSpace

This section describes how you can import your 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:

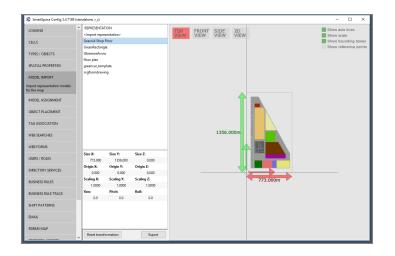


- 2. Double-click < Import representation >.
- 3. Navigate to the SVG file which you exported from Illustrator and select it.

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:



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

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### 5. Open the OBJECT PLACEMENT tab.

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

