

Extra hints for 3D import into PV*SOL Premium 2020 - 10/04/20

This document is linked from our website FAQ:

https://www.solardesign.co.uk/faqpvsol.php#pvsolfaq_50

PV*SOL premium programs also contain an example project called '3D Mesh Import'.

3D model import into PV*SOL Premium 2019/2020 can lead to very large file sizes, slow program behaviour and unexpected changes in scaling/measurements. Furthermore when using drone flying, used to capture a sequence of 2D images photogrammetry or LIDAR, may result in reduced accuracy compared with say using a laser measuring tool on site and the existing PV*SOL 'Extrude' function. At present PV*SOL Premium will apply the modules (Module coverage/mounting) on a flat plane irrespective of any undulations on the imported mounting surface. The benefits of using 3D model import should be carefully considered. Whereas it may ultimately look impressive for the client the existing PV*SOL Photoplan and texture options already within PV*SOL premium can achieve a quicker, more accurate photo-realistic view of buildings.

3D import can be practiced using various sometimes free 3D models online before investing in this procedure. Third party services such as with a 'Pix4D' license may provide you with further sample files. Even without a 3rd party, a drone with camera can be used to take a single 2D image from directly overhead the building or terrain. The existing 3D map import and extrude functions may then provide a similar outcome rather than imported a complete 3D model.

- 3D imports can be very time consuming and memory hungry. Take care that accuracy is not lost through the conversion processes and try to double check at least one dimension of an import against a known real value.
- The maximum import file size is 250MB and the maximum number of points is 500,000. In any case reduce the files to a minimum. Every single node in the 3D model can evoke shading slowing the calculations down.
- Internal structure information is not needed and can bloat the file size
- Save and open the PV*SOL project directly from within the folder where the folder with the 3D-model is located
- Texture format preferred as *.PNG. Edit textures in open source software <https://www.blender.org/> and reducing resolution to 1024 by 1024. This will make it blurry but it is much better than having no texture at all
- The import and the shading calculation in PV*SOL works best when the objects in Sketchup are defined as volume objects (this is the case when you see a volume in the object properties in Sketchup). With SketchUp you can add Plugins from the Extension Warehouse such as 'SketchUp STL' or 'SolidInspector2' then export a file to .STL format and import this into PV*SOL.
- An open source converter link is: <http://assimp.org/index.php> along with the tool 'Open3Mod' to load the files, reduce the points and convert the files into .obj

The following tuition videos may assist:

<https://www.youtube.com/watch?v=T0nqJV-oQ90&t=4s>

<https://www.youtube.com/watch?v=pGWFx5TvOJc>

<https://www.youtube.com/watch?v=B7Dd-FDKYgo>