SU2Odeon version 4.00

SU2Odeon version 4.00 is an ODEON plug-in for SketchUp (SU) version 2008 and later on the Windows platform. Version 4.00 works for the Make as well as for the Pro editions of SketchUp. SU2Odeon version 4.00 creates output files which are compatible with ODEON 19. For ODEON 18 to 15 use SU2Odeon3.03, ODEON 14 and older, use SU2Odeon1.09.

Downloading the right version of Sketchup

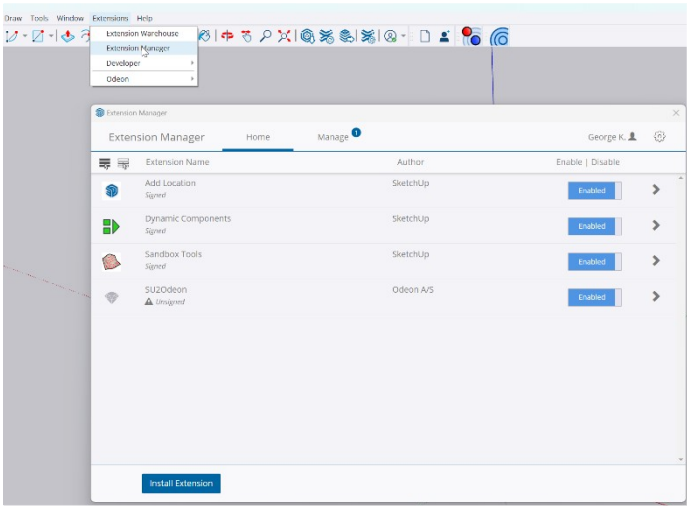
Sketchup Make 2017 is free and may only be used for non-commercial projects. For commercial projects, Sketchup Pro must be purchased. In either case, the installers can be downloaded from: https://www.sketchup.com/download/all where the license terms can also be found.

Sketchup 8 is free for commercial and non-commercial projects and can be downloaded e.g. from various sites on the internet (at own risk). Eg. techspot.com.

Installation of SU2Odeon 4.00

Since November 2021, the SU2Odeon plugin has become available on the **SketchUp Extension Warehouse**. This means you can download it from this page. The plugin is compatible for all SketchUp versions after 2008.

1) Select Extensions|Extension Warehouse (Window|Extension Warehouse in SketchUp 2020 and later).
2) Search for SU2Odeon and click on it.
3) Press the Install button.

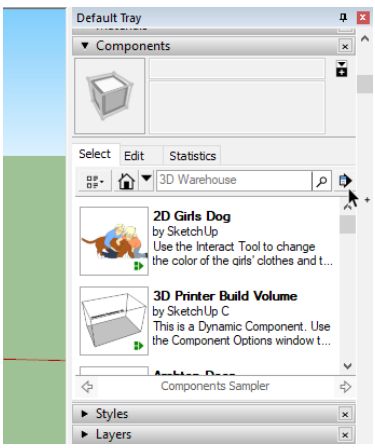


Alternatively, you can install the plugin manually from the ODEON's webpage.

1) Download the SU2Odeon 4.00 (SU2Odeon.rbz) plugin from https://odeon.dk/downloads/su2odeon/
2) Select Extensions|Extension Manager.
3) Click Install Extension.
4) Select the file SU2Odeon.rbz that you downloaded at step 1).

Installing components for source and receiver modelling for ODEON

Enter the Components folder in the SketchUp Default Tray (For older versions of SketchUp, the installation procedure is slightly different. If there is no Default Tray in your SketchUp then select the Window|Components menu).



1) Click on the arrow icon at the left end of the components box.
2) Select Open or create a local collection.
3) Choose the folder: OdeonComponents.

Installation of SU2Odeon 4.00 for SketchUp 8

If you want to use **SketchUp 8** (which can be found for free) you have to download SU2Odeon 4.00 from https://odeon.dk/downloads/su2odeon/ and install it manually.

1) Download the SU2Odeon 4.00 plugin.
2) Open SketchUp (SU).
3) Select the Window|Preferences menu. In the System Preferences dialog that appears, select Extensions in the left panel.
4) Select the file SU2Odeon.rbz that you downloaded at step 1).

Installing components for source and receiver modelling for ODEON

1) Click on the arrow icon at the left end of the components box.
2) Select Open or create a local collection.
3) Choose the folder: OdeonComponents.
4) In Sketchup 8, select C:\Program files (x86)\Google\Google Sketchup 8\Plugins\OdeonComponents\.

Usage

The plug-in has a dual functionality. Once a surface model has been created in SketchUp, it allows for:

1) Saving and exporting the modelled geometry to ODEON using the ODEON icon .

2) Creating a set of sources and receivers in the model, and export them to ODEON using the source/receiver icon .

These two ODEON icons may be floating on their own undocked toolbars. In that case, drag each of them to the main toolbar area - this needs only be done once (note that on dual-monitor PC's the ODEON icons are probably located on the primary monitor even if SketchUp is displayed on the secondary monitor). The Icons are also accessible from the menu Extensions|Odeon in SketchUp.

Additionally, since ODEON 17, any ODEON model (.par file) can be imported into SketchUp. The model must be made compatible with SketchUp from within ODEON, by choosing File|Make .par file (and model) compatible with SketchUp.

Save and Export Geometry into ODEON

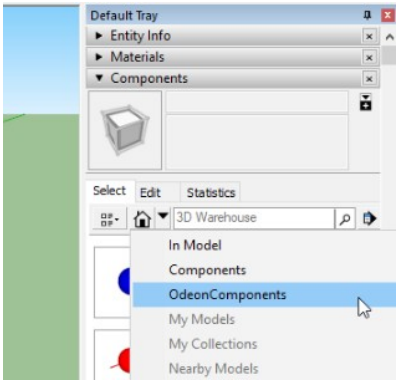
When clicking the ODEON icon in SketchUp, the model in its current state is saved in SketchUp; and a standard ODEON .par geometry file is exported from the SketchUp model. The .par file will reside in the same directory as the SketchUp geometry file (.skp). While extending and remodeling the geometry in SketchUp it

is perfectly alright to re-export the model from SketchUp and then reload it into ODEON again. When copying a room project from within ODEON, the .skp file is automatically copied with the room files.

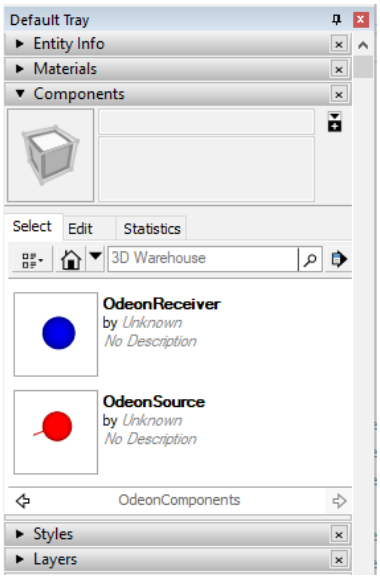
A number of tutorial videos showing how to use SketchUp and the ODEON SU2Odeon plug-in are available at: https://odeon.dk/learn/video-tutorials/import-export/

and an extensive number of instruction videos for the SketchUp software is available at the Sketchup homepage at: https://learn.sketchup.com/

Create Sets of Sources and Receivers



Two components: OdeonReceiver and OdeonSource are available in the Components folder of the SketchUp Default Tray, under the sub-folder OdeonComponents. In *earlier version of Sketchup e.g. Sketchup 8 and Sketchup Make 2017 there is no* Default tray *– instead select the* Window| Components menu which opens the Components folder including the installed OdeonComponents.



Insert any number of these components in your model and use the Move and Rotate tools in SketchUp to change their positions and orientations.

Descriptions for sources and receivers can be added to sources and receivers:

1) Select the source/receiver
2) Right click and select the Entity Info option
3) Type the desired description in the Instance edit box – in older versions of Sketchup use the Name edit box

This description will be transferred to ODEON when the .SouRecScript file is imported

Export Sources and Receivers into ODEON

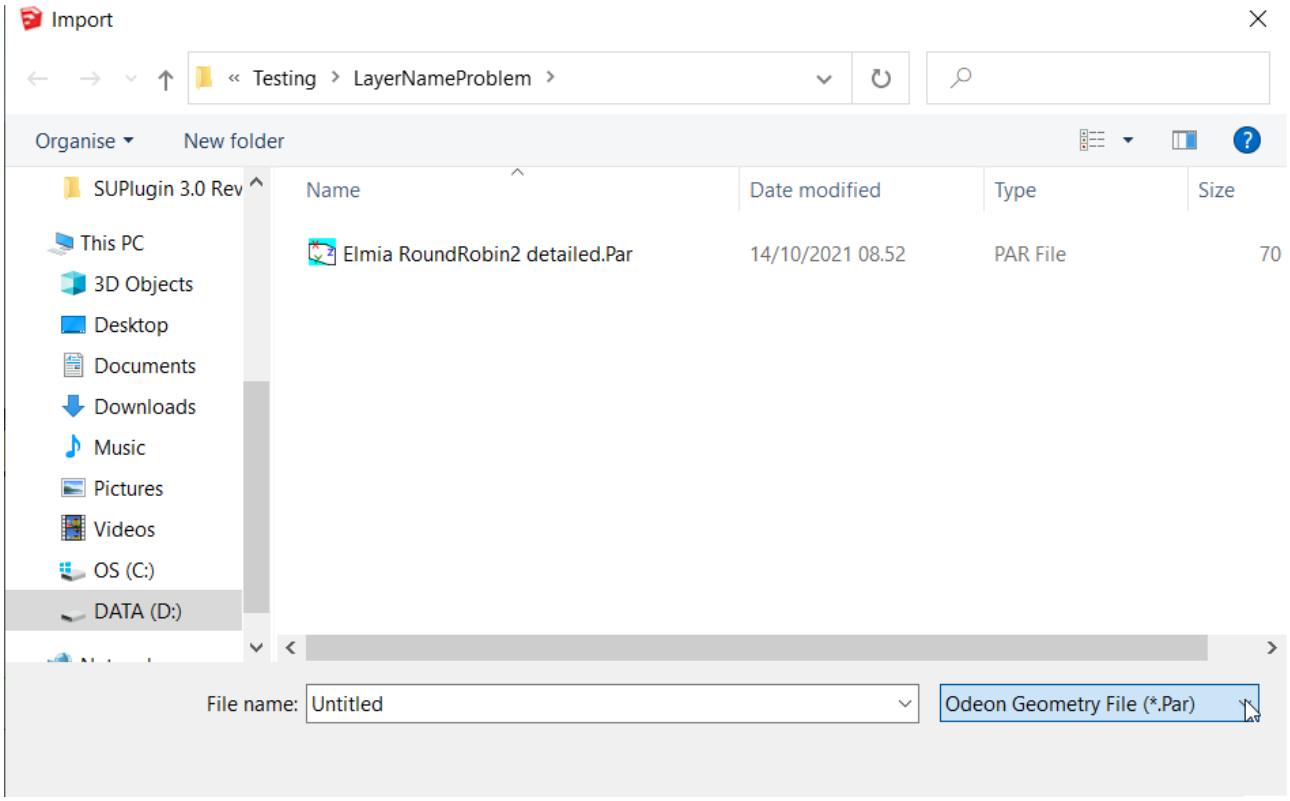
Use the source/receiver icon to create an ODEON .SouRecScript file which will reside in the same directory as the SketchUp geometry file *(*.skp) and the ODEON geometry file (.par). The exported file can be imported into the room model when loaded in ODEON, using the Import Source receiver script option (Alt+I shortcut available in the Source receiver list inside ODEON).

Sources and receivers can be grouped in different SketchUp layers, representing different scenarios for simulation. Disabled layers are not exported to the .SouRecScript file. Sources and receivers are exported separately not as a part of the geometry file.

Import ODEON models into SketchUp

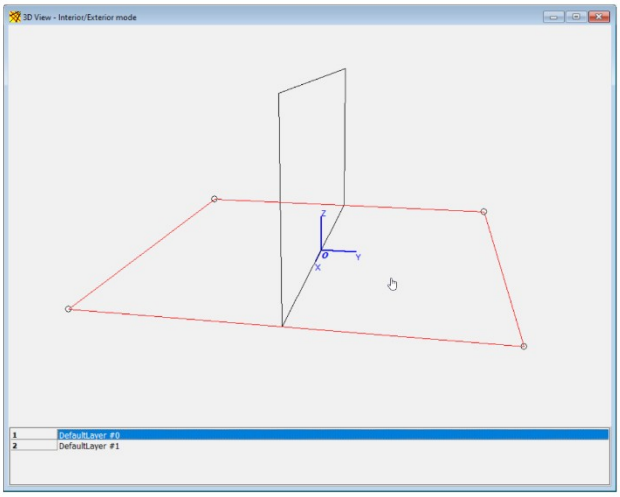
After ODEON 17, users can create SketchUp compatible .par files which can be imported in SketchUp. Once a room model is loaded in ODEON, select File|Make .par file (and model) compatible with Sketchup in the upper menu bar.

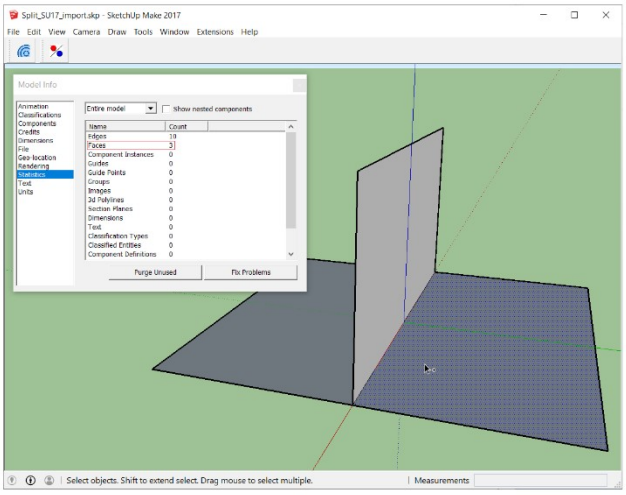
The resulting Par file can be imported into SketchUp by selecting File|import… functionality. The extension of the file to be imported must be changed to “Odeon Geometry File (*.Par)” as indicated in the figure below.

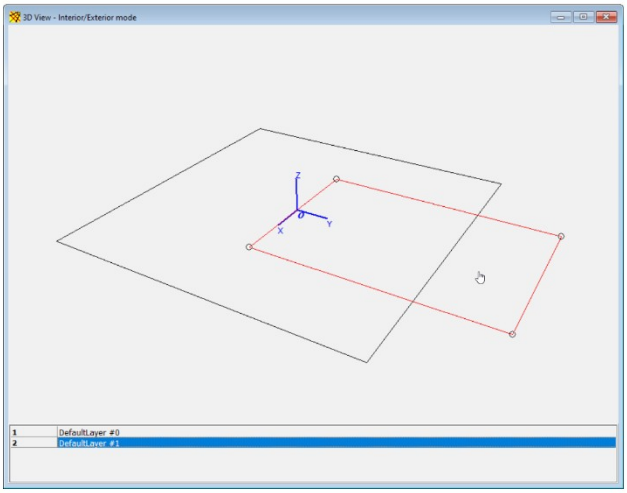


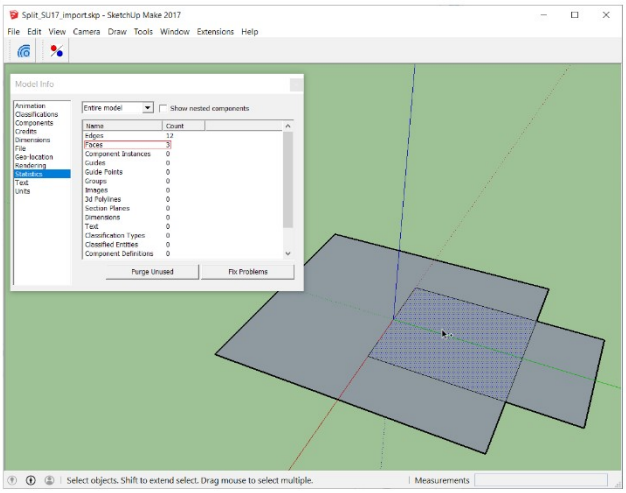
Alternatively, users of SketchUp 2019 and newer versions, might drag and drop the .par file in the SketchUp window. Once the model is imported in SketchUp the users can benefit from the edition tools in SketchUp to prepare their geometries for their use in ODEON. Imported models can be exported back to ODEON by clicking on the ODEON icon , as usual.

When the ODEON model is imported in SketchUp, the geometry is modified according to SketchUp standards which merge elements from different surfaces co-existing in the same plane. Typical examples of this operations are split of surfaces and cleaning of overlapped surfaces (see upper and lower panels respectively on below figure). Rarely, complex geometries can be triangulated during the import. In general, the resulting SketchUp model looks the same than the original ODEON one but contains a number of extra surfaces. Most of the new surfaces will retain their original material when exported back into ODEON.









Functionality of the plug-in

In order to make the use of the SketchUp models in ODEON as easy as possible, a number of conversions of and checks on the SketchUp model are automatically performed on the SketchUp model upon export to ODEON:

Consistency check

- Redundant points are removed, e.g. points almost coinciding are merged.
- Surfaces with no area are not included in the exported geometry.

Point list

A point list is compiled so each coordinate only appears once in the .par file.

Layers

Layers are included in the .par file if there are any in the SketchUp model. It is recommended to make use of layers in your SketchUp models as this can make it easier to assign materials inside the ODEON software (use the Ctrl+L shortcut in the Materials list in ODEON to enable or disable selected layers).

Only layers that are enabled in SketchUp when exporting to ODEON will be included in the exported model – this gives an option to exclude some details or parts of the model that you do not wish to see in you model inside ODEON.

The colour of the layers in Odeon will be taken from SketchUp.

Persistent surfaces

Properties assigned to surfaces inside ODEON in terms of; materials, reflector coverage, grids surfaces and surface sources are maintained even if surfaces have been added or deleted in SketchUp after the model was exported the first time. This is accomplished by the SU2Odeon plug-in by having the *SketchUp* model remember the surface numbers as they were exported to ODEON.

Auto explode

Groups and Components are automatically ungrouped/exploded - from any level - upon export from SketchUp. This is a requirement from SketchUp in order to enable the 'persistent surfaces' mentioned above. For this reason, if some Groups or Components need to be moved or changed – it is highly recommended that this is done before the first time the export to ODEON is performed. When a model with Groups and Components is exported, the plugin automatically explodes the geometry and overwrites the .skp file with the exploded geometry. This causes loss of the original geometry with its high-level information provided by Groups and Components. We have included a dialog that announces this upon export and allows saving a copy of the geometry to an alternative filename before the explode operation is performed.

Modifying surfaces for full compatibility with ODEON

Complex surfaces in SketchUp are defined by an outer loop, describing the outer perimeter of the surface, and a number of inner loops describing holes in the surface if any.

Since version 15 ODEON supports such loop surfaces with the LSurf surface keyword in the ODEON .par geometry file. When ODEON reads a LSurf, the outer loop (outer perimeter of a surface) is automatically stitched with the inner loops (if any) of the surface (holes in the surfaces) so each surface is defined inside ODEON by one loop only - inner loops are inserted using an insertion point on the main loop which is estimated when ODEON reads the geometry file exported from SketchUp.

Known problems and limitations

- Exporting complex geometries with the SU2Odeon plug-in may in special cases take quite a while - SketchUp may appear as "Not responding" and you might assume that it has crashed - however be patient - WAIT - the process may succeed if given an hour or two..... If you have modeled the geometries in SketchUp yourself this problem probably doesn't exist - if the model has been imported into SketchUp from another CAD package e.g. in the .dwg, .dxf, .ifc or .ifcxml formats (using some other plug-in) - it is likely to be the case.

- In SketchUp, the ODEON export icons may not appear docked immediately after the SU2Odeon installation - if this is the case - search your screen(s) for each of the 1-icon-toolbars - then mouse-drag them to a location on the SketchUp toolbar.

Revisions

Version 4.00 7 October 2025

- Support for SketchUp layer colours.

Version 3.03 9 December 2024

- Full UNICODE support for layer names in SU2008. Filenames and paths still require ASCII characters.
- Resolved some high DPI issues with ODEON's icons and components.
- Export to ODEON functionality changes its name to Save and Export to ODEON.
- SketchUp components facing the camera are excluded from the export, including all people at origo.

Version 3.02 5 July 2024

- Resolved bug in SU 2008 regarding failures exploding models containing groups.
- Teddy (SU 2024) is not exported.

Version 3.01 10 September 2023

- Resolved bug regarding unnumbered surfaces after Odeon Import + Export operation
- Niraj (SU 2022) and Heather (SU 2023) are not exported.

Version 3.00 14 October 2021

- Import Odeon model functionality

Version 2.03 19 March 2021

- The plugin becomes available on the official SketchUp Extension Warehouse. From now on it can only be downloaded from there and appears as a *Signed* extension in the Extension Manager inside SketchUp.

Version 2.02 14 January 2021

- Sumele and Helen (SU 2021) are not exported. The Sumele figure caused serious problems for the SU2Odeon plugin and caused it to fail because the dress of the figure contains more than 6000 points.
- Fixed issue when trying to export a room when the Sketchup drawing file has not been saved yet (in some cases the backup of the original Sketchup file as well as export failed).

- Warning on script error when loading the SU2Odeon plugin into Sketchup 8 solved.

Version 2.01 April 2020

- Description can be added to sources and receivers from within Sketchup by typing the descriptions in the Instance field (or name field in older versions of SketchUp) of the inserted source and receiver components.
- Marc (SU 2019) and Laura (SU 2020) are not exported.

Version 2.00 May 2018

- Support for SU 2008 to 2018
- Processing of the surfaces is performed internally in ODEON, and most of the algorithms involved in this procedure have been further developed. Overall gains in speed typically range from 2 to 10 (depending on the room exported).
- Developed algorithm for detecting and repairing self-crossing loops.
- Improved algorithm for removal of redundant points and construction of the Corner List.
- Revised algorithm for stitching the loops of complex surfaces (moved inside ODEON for higher processing speed).
- Full UNICODE support for filenames, paths and layer names (except SU 2008 that requires ASCII characters).
- Automatic opening of geometry .Par files in ODEON on request.
- Josh and Stacy (SU 2018) and Lisanne (SU 2016) are not exported.

Version 1.09 October 2017 (to be used for ODEON 14 and older versions)

- Full support for any character set
- Fix for some cases where the plugin froze and no export file was created
- Not exporting the “Sketchup people” which is by default located at origo in a new Sketchup drawing (the following person components that will currently be omitted in the Odeon2SU export are Sang, Susan, Steve, Sophie, Derrick, Bryce(SU6), Nancy and Chris(SU2017).

Version 1.08 March 2015

- ODEON will avoid the Steve component (the man at origo) from being transferred with the model to the ODEON .par file.

Version 1.07 March 2014

- Support for SU 2013 and 2014

Version 1.05 February 2013

- Fixed issue: Occasionally previous versions of the SU2Odeon plug-in failed to export geometry to ODEON when there were no components in the model. This typically happens when the scale figure (named Sang, Susan Derrick or Sang) which by default is present in new drawings has been erased by user.
- Fixed issue: Layer names containing letters such as æ, ø, å… are exported correctly – some character sets e.g. Chinese may still fail – in that case use Standard English characters.

Version 1.04 September 2012

- Automatically saves Sketchup file when exporting model to ODEON – this way it is ensured that the .skp and .par file are always consistent (user does not need to save the *.skp* file manually)
- Order of point sequence in multi loop surfaces (surfaces with holes) are automatically modified in order to produce correct area estimates in ODEON.

Version 1.03 June 2011

- Enhanced export for better compatibility with OpenGL.

Version 1.02, October 2010

- Updated for *SU* version 8, avoiding to export the *SU* Origo figure (named Susan) to ODEON.
- Fix: repeated points problem fixed (a rare problem occurring in complex geometries). These incorrect surface definitions are automatically corrected or discarded upon export.

Version 1.01, 8. June 2010

- Fixed/improved algorithm for removal of redundant points.

Version 1.00, first release may 2010.