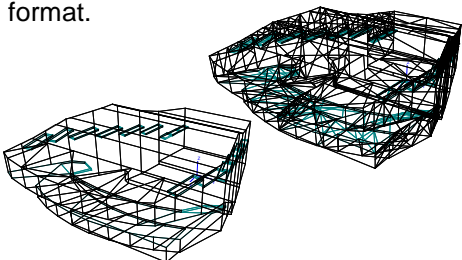


Standards Supported

- ISO 3382 series – Performance places, ordinary rooms, open-plan offices.
- ISO 14257 – Workplaces.
- IEC 60268-16 – Speech Transmission Index.

Open Room

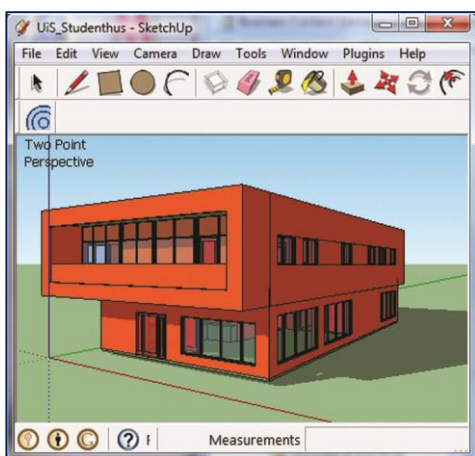
Room geometries can be imported from most CAD systems in the .DXF or .3DS format.



ODEON takes care to simplify the room for optimized acoustic simulations.

SketchUp Plug-in

Download a free plug-in for importing models directly from Trimble SketchUp (www.sketchup.com) to ODEON.

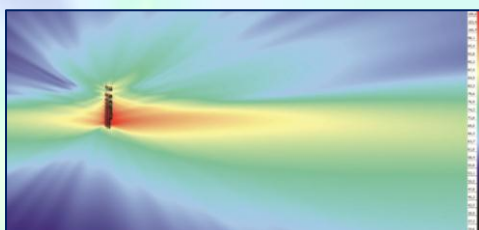


Free Trial

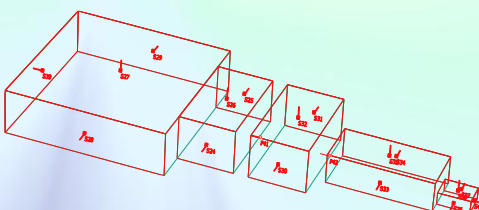
Try ODEON without time limitations:
www.odeon.dk/free-demo-version.

Sound Sources

Point sources are described by a directivity pattern, a power spectrum and a delay, allowing the definition of natural sound sources as well as loudspeaker systems. *Array sources* can be imported from an extensible XML-format or can be created from point sources within the ODEON array source editor.



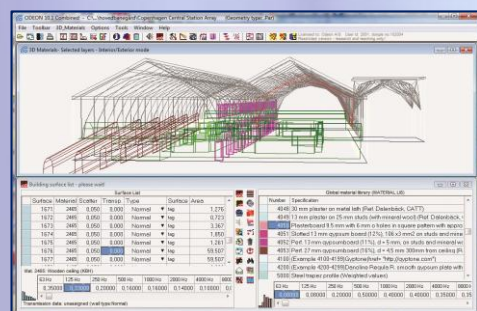
A near field plot obtained by the ODEON array source editor in a few seconds.



Line sources and *surface sources* are useful for calculations in industrial environments. The above example is a turbine from a power station.

Materials

The room surfaces are assigned materials, with absorption coefficients for the octave bands from 63 Hz to 8000 Hz, as well as scattering and transmission properties.

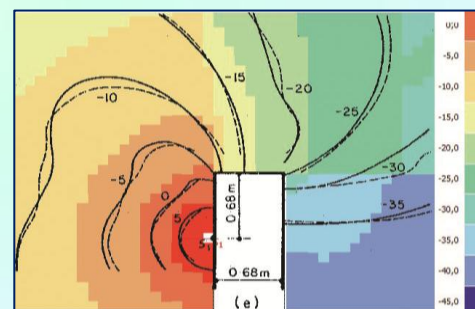


User-friendly assignment of materials from a long and extendable library.

Methods

ODEON makes use of hybrid algorithms, highly optimized for maximum accuracy at modest calculation time. Early reflections are calculated using the *Image Source Method*, while late reflections are simulated by a technique called *Ray Radiosity*, with *secondary sources* placed at all reflection points. Scattering/diffraction is handled properly using the *Reflection Based Scattering* method.

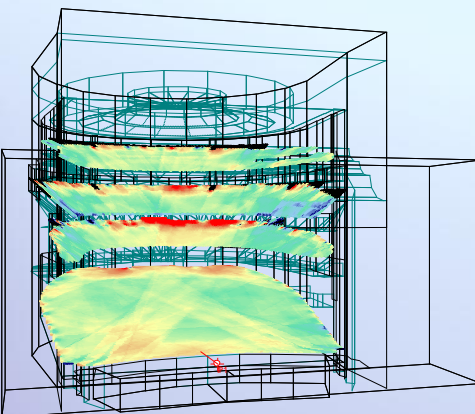
One and two point *diffraction* paths over screens are automatically detected by ODEON, allowing the sound attenuation behind the screen to be calculated.



Sound distribution in the shadow zone of a screen.

Grid Maps

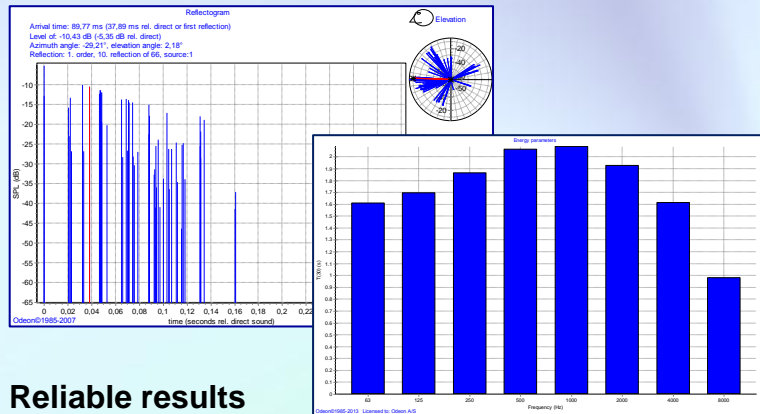
Maps of calculated acoustic parameters are shown for any number of selected receiver surfaces.



Distribution of clarity C_{80} at 1 kHz.

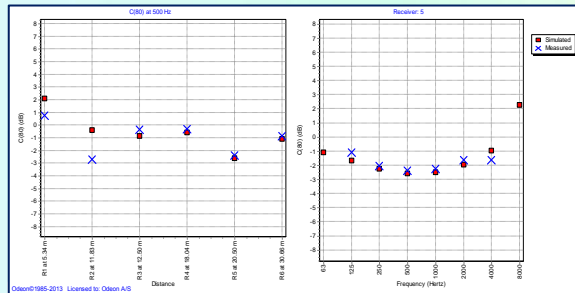
Job List

The Job list is where calculation of point responses and auralisation results are organised and displayed. Point responses, multi-point responses, grid maps and reflection paths can be calculated in the job list.



Reliable results

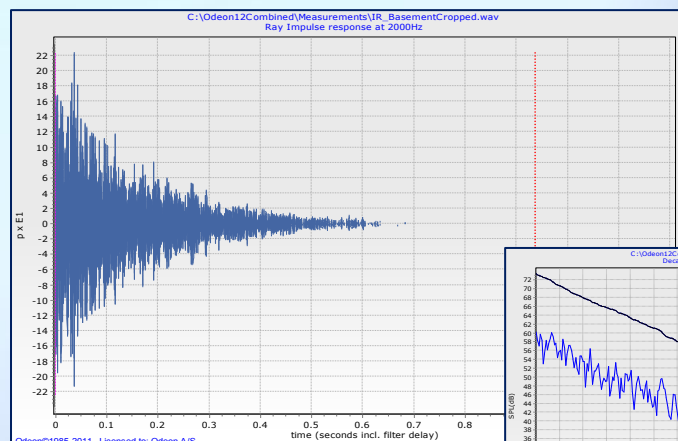
The frequency-dependent reflection based scattering method in ODEON is one of the reasons for excellent agreement with measurement results. In this example simulated and measured clarity C_{80} at 500 Hz is shown for the Elmia concert hall.



The Elmia concert hall (2nd international Round Robin on room acoustic prediction models).

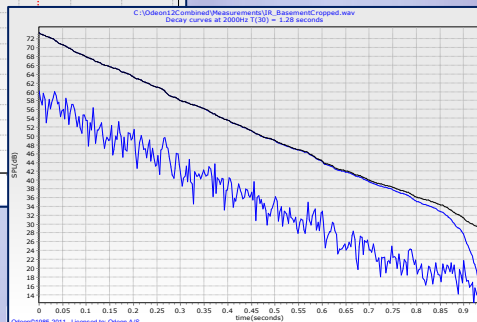
Measuring system

Measuring and simulating room impulse responses can be done from within the same software! ODEON version 12 is equipped with a powerful measuring system that allows the user to measure impulse responses in a room, calculate the ISO 3382 room acoustic parameters and make comparisons with simulations.



In ODEON you can measure, simulate and compare the results side by side!

Measured results are displayed in the same way as simulations.



Auralisation

Listen to the rooms and demonstrate predicted acoustics to clients, as it sounds in reality. Auralisation works both for headphone and surround system reproduction.



Ordering Information

Odeon A/S
Scion-DTU, Diplomvej, Bldg 381
DK-2800 Kgs. Lyngby, Denmark
www.odeon.dk

Elegant and user-friendly interface

Fast and reliable calculation

Astonishingly realistic auralisation

