ODEON Quick Workflow Guide

Step-by-step guide for making fast, simple projects in ODEON.

Make a simple model (using SketchUp)

Draw geometry

- **Draw square(s)** with *Shape* tool  .
- **Pull up to box(es)** with the *Push/Pull* tool  .
- **Add windows**, using again the *Shape tool* on the sides of the box(es).

Export geometry

- **Save the geometry** in the same folder where your ODEON model will be.
- **Press the SU2ODEON button.** This will create an ODEON .par file, with the same name. The plugin can be downloaded from our homepage.

Setup the model in ODEON

Import geometry

- **Open ODEON.**
- **Import file.** Choose File > Open room and search for the .par file created previously.

Place a sound source

- **Open the *Source Receiver List*** by pressing  , by hitting SHIFT+CTRL+S or by going to *Toolbar > Source Receiver List*.
- **Insert a point source** by pressing  , by hitting CTRL+P or by going to *Source-Receiver list > New point source*.
- **Position the source** directly on the *light blue grid* in the *3D Edit Source Receiver* view by holding CTRL and using the Left Mouse Button (LMB). Alternatively, set the position precisely by typing the coordinates in the *Point source editor*.
- **Confirm the changes** by closing the *Point source editor*. You can always double-click an existing source (or receiver) to make changes.

Choose materials

- **Open the *Material list*** by pressing  , or by going to *Toolbar > Material List*.
- **Choose material** from right side list, Global Material library. You can search for materials when the window is active.
- **Select one or multiple layers/surfaces** from the list on the left. You can toggle between *Layer* and *Surface* mode by pressing  . The currently selected surface or layer is highlighted in red in the 3D Materials window above.
- **Assign a material** by pressing  , or hit the INS key for as many surfaces that need that material.

- Repeat the process until all surfaces have a material assigned.
  - If there are surfaces that should have a high scattering, set this in the surface list.
  - If you want to make a surface transparent (i.e. removing from calculations), use material number 0.
- **Confirm the changes** by closing the *Material List* window.

Set calculation accuracy

- **Open the *Room Setup*** by pressing  , by hitting SHIFT+CTRL+P, or by going to *Toolbar > Room Setup*.
- **Change the Number of Late rays**. Use a low number for faster calculations, or a high number for more accurate calculations. You can get a suggestion with the *Engineering* OR *Precision* buttons.
- **Change the Impulse Response Length** to the expected reverberation time. You can press  to obtain a number directly from the *Quick Estimate* tool (found also from within the Material List). If the impulse response length is too low, some results will not be able to be obtained and will be replaced by '*.*'.
- **Confirm the changes** by closing the *Room Setup* window.

Global Estimate (calculation of average Reverberation time)

Available in **ODEON Industrial**, **Auditorium** and **Combined**.

Make a Global Estimate

- **Open the *Global Estimate*,** by pressing  , by hitting SHIFT+CTRL+E or by going to *Toolbar > Global Estimate*. The calculation will start automatically. If already calculated, you can press the *ReCalculate* button.
- **Wait until** the curves have converged to each other and flattened out.
- **Stop the calculation** by pressing the *Finish Calculations and Derive Results* button.
- **Change tab** to *Estimated reverberation times*. This will display the calculated T_{20} and T_{30} per octave band, for the whole room – independent of receiver location.

Export the graph

- Copy the graph by hitting CTRL+C.
- Paste in Word, Excel, or any other software that supports graphics, with CTRL+V.

Point Responses (calculations of parameters at specific locations)

If you are interested in acoustical parameters (EDT, T_{15}, T_{20}, T_{30}, C_{50}, C_{80} etc.) at specific receiver positions, use either Multi Point response or Single Point response. You will also need to define a receiver first.

Place Receiver(s)

- **Open the *Source Receiver List*** by pressing  , by typing SHIFT+CTRL+S or by going to *Toolbar > Source Receiver list*.

- **Insert a new receiver** by pressing  , by typing CTRL+R, or by going to *Source-Receiver list > New receiver*.
- **Position the receiver** directly on the *light blue grid* if the *3D Edit Source Receiver* view, by holding CTRL and using the Left Mouse Button (LMB). Set the position precisely by typing the coordinates in the *Point source editor*.
- **Confirm the changes** by closing the *Receive editor*. You can always double-click an existing receiver (or source) to make changes.

Run calculations

- **Open the Job List** by pressing  , by typing SHIFT+CTRL+J, or by going to *Toolbar > Job list*.
- **Select any job** in the Job List.
- **Activate source(s)**, by ticking the checkboxes in the *Active Sources* section on the left.
- **Activate a Multi point response calculation**, by ticking the *Multi* checkbox in the middle of the Job List window.
- **Activate a Single point response calculation** (available in **ODEON Auditorium** and **Combined**), by ticking the *Single point response receiver* checkbox and selecting a receiver from the job's dropdown receiver menu.
- **Select and run a single job**, by pressing  , typing ALT+R, or by going to *Job list > Run Single Job*.
- **View the results after calculation,** by pressing  (ALT+M) or  (ALT+P).
- **Change tabs** to navigate through different displays and results.
- **Use the left/right arrow keys** to change parameters.
- **Use the up/down arrow keys** to change octave bands.

Export Graphs

- Copy parameters or graphs, by selecting and typing CTRL+C.
- Paste in Word, Excel, or any other software that supports graphics, with CTRL+V.

Grid calculations (colour maps of room acoustic parameters)

Available in **ODEON Industrial**, **Auditorium** and **Combined**. Colour grids are a great option for visualizing the values of acoustic parameters across surfaces in the room.

Define the grid area

- **Open Define Grid**, by pressing  , typing SHIFT+CTRL+G, or by going to *Toolbar > Define grid*.
- **Highlight surfaces** from the *Room Surfaces* list on left side, using the LMB. Hold CTRL or SHIFT to highlight multiple surfaces. The highlighted surfaces are shown in the *3D Grid* display above.
- **Assign the highlighted surfaces** by pressing  by hitting the INS key or by choosing *Define grid > Select Receiver surface*.
- **Obtain a preview of the grid** for the selected surfaces, by pressing  in the icon bar in the middle, or by typing CTRL+G.

Run the grid calculation

- **Open the Job List** by pressing , by typing SHIFT+CTRL+J, or by going to *Toolbar > Job* list.
- **Select any job in the Job List**.
- **Activate source(s)**, by ticking the checkboxes in the *Active Sources* section on the left.
- **Activate a Grid response calculation**, by ticking the *Grid* checkbox in the middle of the Job List window.
- **Select and run a single job**, by pressing , typing ALT+R or by going to *Job list > Run Single Job*.
- **View the grid after calculation**, by pressing or by typing ALT+G.
- **Use the left/right arrow keys** to change parameters.
- **Use the up/down arrow keys** to change octave bands.

Export colour grids

- Copy the grid view, by typing CTRL+C.
- Paste in Word, Excel, or any other software that supports graphics, with CTRL+V.