Information on IMMI Update 1: IMMI Version 2025

As of: December 09, 2025

New Features

Extension of the reflection element for obstacle effect (floating screen)

Within the framework of the A-QNS (https://a-qns.de/), an association for the promotion of quality assurance in sound calculation software, a significant advancement has been implemented in close cooperation with all participating software manufacturers, representing a further step towards the harmonisation and standardisation of calculation methods in the various software products. This cooperation represents a major success for the A-QNS and underlines the common goal of enabling practical and scientifically sound acoustic calculations at the same level in all programmes.

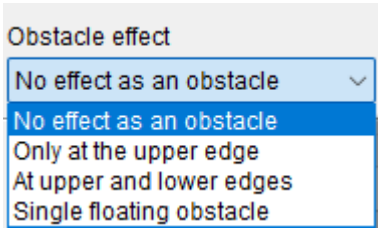
One of the resulting improvements concerns the reflection element, whose shielding effect can now be significantly expanded and mapped more precisely.

An essential property of the reflection element is its ability to act as a shield. In earlier versions, this property was called "diffraction" and had three settings:

- No diffraction
- Normal obstacle
- Floating obstacle

The names have therefore been changed and the functions revised. The shielding property is now called "Obstacle Effect" and has the following settings:

- No effect as an obstacle
- Only at the upper edge
- At upper and lower edges
- Single floating obstacle

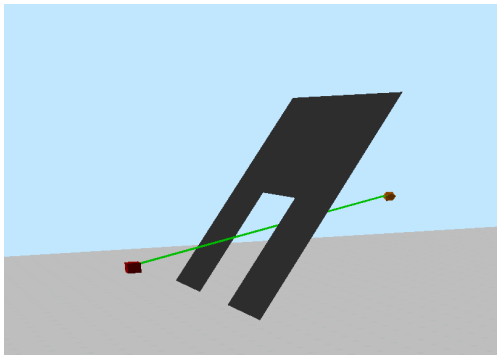


To understand the obstacle effect, here are the key features of the element's geometry.

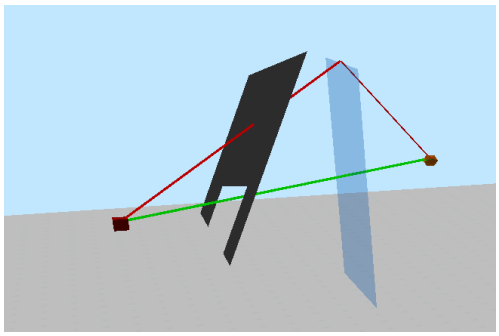
- Polygonal edges (not necessarily rectangular)
- Flat geometry
- Can be positioned anywhere in space (not necessarily vertical, like walls or houses)
- The element does not have to stand on the ground (unlike walls and houses)

Obstacle effect

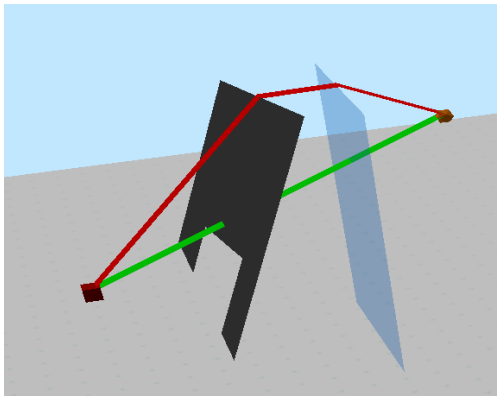
- No effect as an obstacle: The reflective element **does not** contribute to obstacle attenuation.
- Only at the upper edge:
  - First, it is checked whether the sound beam penetrates the reflective element. If this is **not** the case, the element does not contribute to the obstacle effect.
  - If the sound beam hits the reflective element, its upper edge is included in the obstacle calculation.
  - No tests are carried out on the lower edge(s).



The sound beam does not hit the obstacle, so there is no obstacle effect.

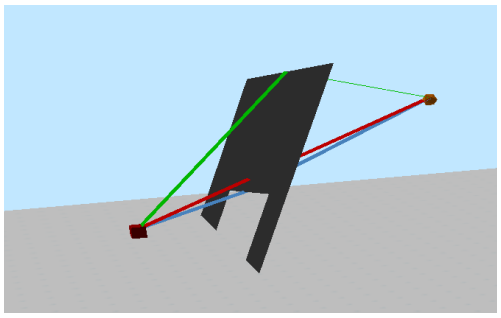


Here too, the sound beam does not hit the reflection element; the obstacle effect is only created by the wall (blue).

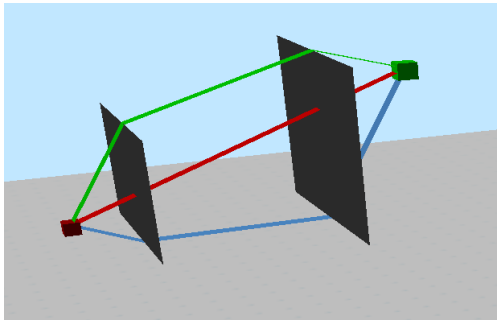


The sound beam hits the reflection element. It is included in the obstacle calculation.

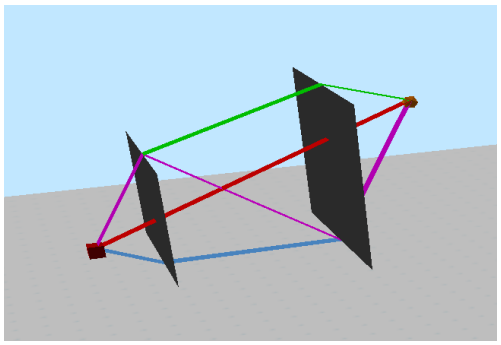
- At the upper and lower edges
  - First, it is checked whether the sound beam pierces the reflection element. If this is **not** the case, the element does not contribute to the obstacle effect.
  - If the sound beam hits the reflection element, the detour via the upper edge and the lower edge is calculated. The path that results in the lower shielding value is used.
  - If there is one or more walls or houses on the path from the source to the immission point, the detour via the lower edge is not considered, as houses or walls cannot be passed underneath.
  - Paths that partially run over both the top and bottom edges at the same time are not considered.



The direct path penetrates the reflection element. The path over the obstacle (green) and under the obstacle (blue) are calculated.



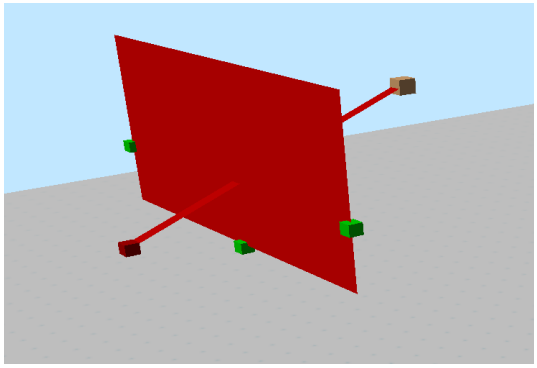
Path over the top or bottom edge with two floating screens.



Once again: path over the top or bottom edge. A combination of both paths (purple) is **not** used for obstacle calculation!

- **Single floating obstacle:** In this calculation mode, which was already available in versions prior to version 2025/Update 01, the floating screens are examined **individually** and compared with the obstacle effect of all walls and houses.
  - First, the obstacle effect of all walls and houses is calculated without any floating screens.
  - For each floating screen that the sound beam passes through, the following calculation is performed:
    - Drop a perpendicular line from the point where the sound beam passes through to all sides of the floating screen. This creates the so-called detour points.
    - Select the three detour points where the distance to the penetration point is smallest.
    - Calculate the obstacle attenuation on the path from the source to the detour point to the immission point for these three detour points.
    - Form the logarithmic sum of these three obstacle attenuations.
    - This is the obstacle effect of the individual floating screen.
  - Compare the obstacle effect of each floating screen calculated in this way with the obstacle effect of all walls and houses.
  - Use the most significant obstacle attenuation as the obstacle attenuation for the entire arrangement of walls, houses, and floating screens.

The procedure described above may seem somewhat unusual, but it corresponds to the detour calculation according to ISO 9613-2 and TR17534 for obstacle calculation with lateral detour.



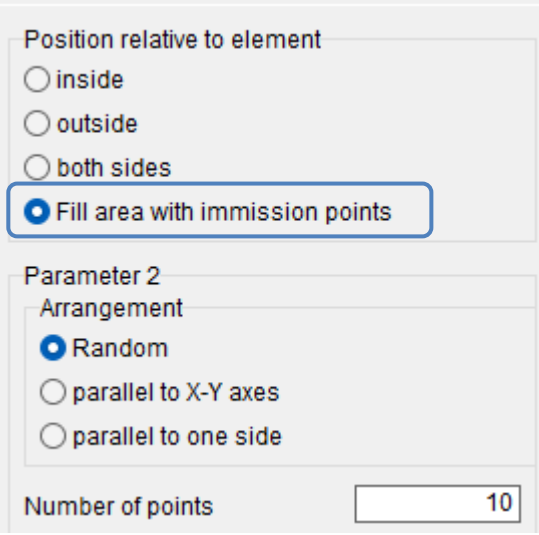
The three detour points (green) for the floating screen, with the shortest distances to the respective screen edges.

Important note: A floating screen is not described in any of the current regulations. The user should therefore use this element with caution and great care. It should also be noted how the floating screen interacts with other elements to reproduce the overall effect desired by the user. In CNOSSOS-EU, in addition to the "rubber band method" described above, the arc deviation method is also used to calculate the obstacle effect. This method does not apply to floating screens. For this reason, the use of a floating screen in CNOSSOS-EU is not recommended.

Compatibility note: Until update 1 of IMMI 2025, floating screens that were not flat were not always handled correctly. (Note that such elements are not permitted.) To ensure comparability with results from earlier versions, a compatibility switch has been introduced that activates the old calculation method. See menu: Settings I Environment I Compatibility.

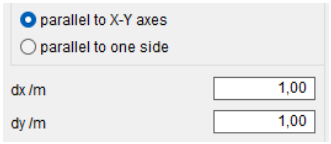
Macro: Create immission points

This macro has been expanded. It is now possible to fill an area element (e.g., a land-use area) with immission points (IPs). To start the macro, select an area element in the site plan, then choose the pop-up menu: **Macros I Create immission points**. The macro now includes the new option **Fill area with immission points**.



The IP can be generated in three different ways:

- **Random:** The X-Y coordinates of the IPs within the area are determined randomly. **The number of points** specifies how many points to generate.
- **Parallel to X-Y axis:** The IPs are arranged parallel to the coordinate axes. dx and dy specify the distance in the X and Y directions.

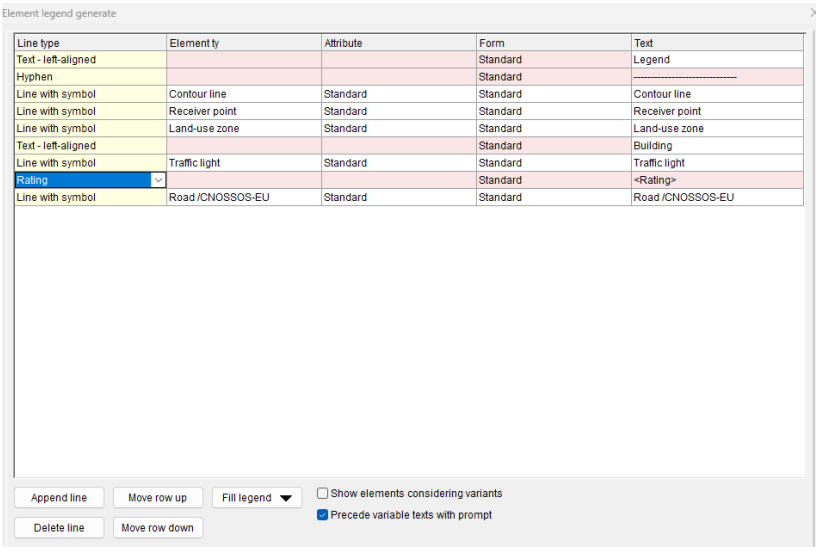


- **Parallel to one side:** The IPs are aligned parallel to one of the sides of the surface element. dx and dy specify the distance in the X and Y directions. The start node defines the side to which the IPs are aligned.

Element legend: New display options

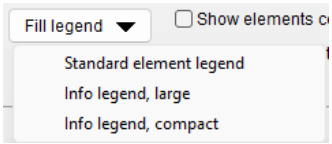
Various project parameters can now be displayed in the element legend. If the parameters change, the legend is automatically adjusted. The following can be displayed: Variant, shift, coordinate system, assessment name, file name, and plan title.

To display these parameters, the dialog for defining the legend content has been redesigned and expanded.



The parameters are selected via the line type, and the parameter value is then displayed symbolically in the Text column.

The **Fill Legend** help function makes it easy to preset element legends.

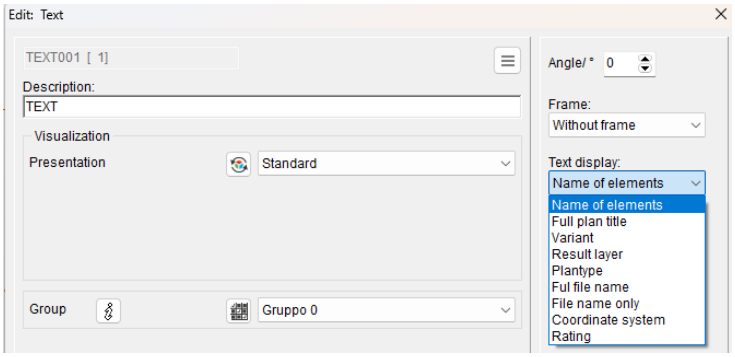


Extensions of the text element

Previously, a text element displayed the text entered in the "Description" field. Now you can also select whether one of the system parameters should be displayed:

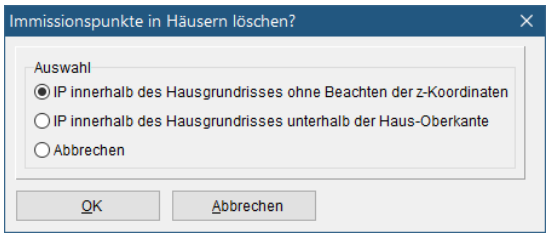
- Full plan title
- Variant
- Result layer
- Plan type
- Full file name
- File name only (without path)
- Coordinate system
- Name of the assessment

The display is selected using the **Text display** selection field.



New control function: Delete immission points in buildings

The menu **Calculation I Control I Delete immission points in buildings** can be used to delete IPs that are located within the floor plan of a building.



- Option 1 deletes IPs located within the house floor plan. The house's height and the IP's z-coordinate are irrelevant.
- Option 2 only deletes the IP if the IP is located within the floor plan of a house and the upper edge of the house (excluding the roof) is above the IP's z-coordinate.

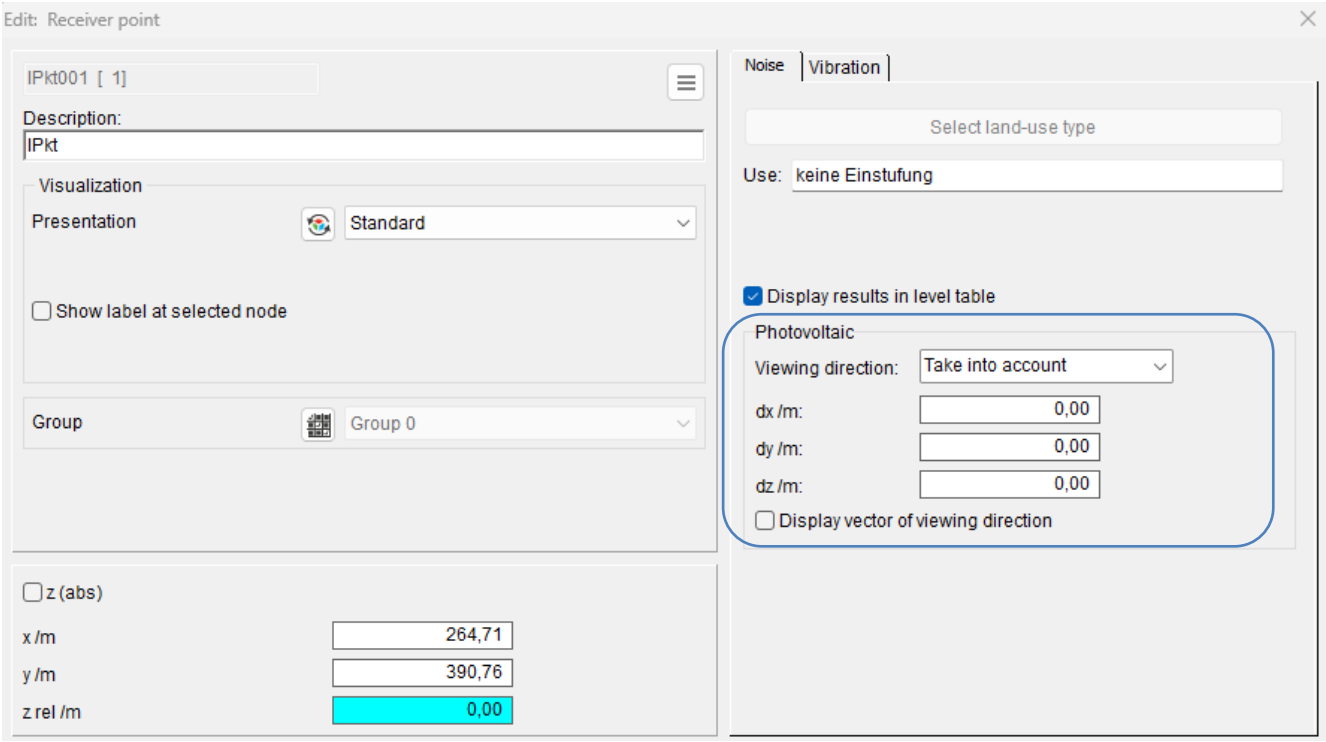
Note: This operation cannot be undone.

Extension of the "photovoltaic glare" forecast type to include the viewing angle

Since specific regulations and work instructions stipulate that a viewing angle must be considered to account for glare and reflections, this requirement has also been incorporated into IMMI. The underlying viewing angle is usually specified as at least +/- 30° in the direction of view. To provide this functionality, the definition of the immission point has been expanded to include the viewing direction, and a specification of the viewing cone's solid angle has been introduced for the calculation. In addition, functions are provided that automatically preset the viewing direction of immission points.

Introduction of a viewing direction for the immission point

Each immission point (IP) can now be assigned a viewing direction. This means that IPs defined on a road, for example, can now be assigned viewing directions, which can then be taken into account when calculating glare. Only if glare can be detected in the direction of travel or in the opposite direction is it accepted as such. The IP element input dialog has been expanded as follows.

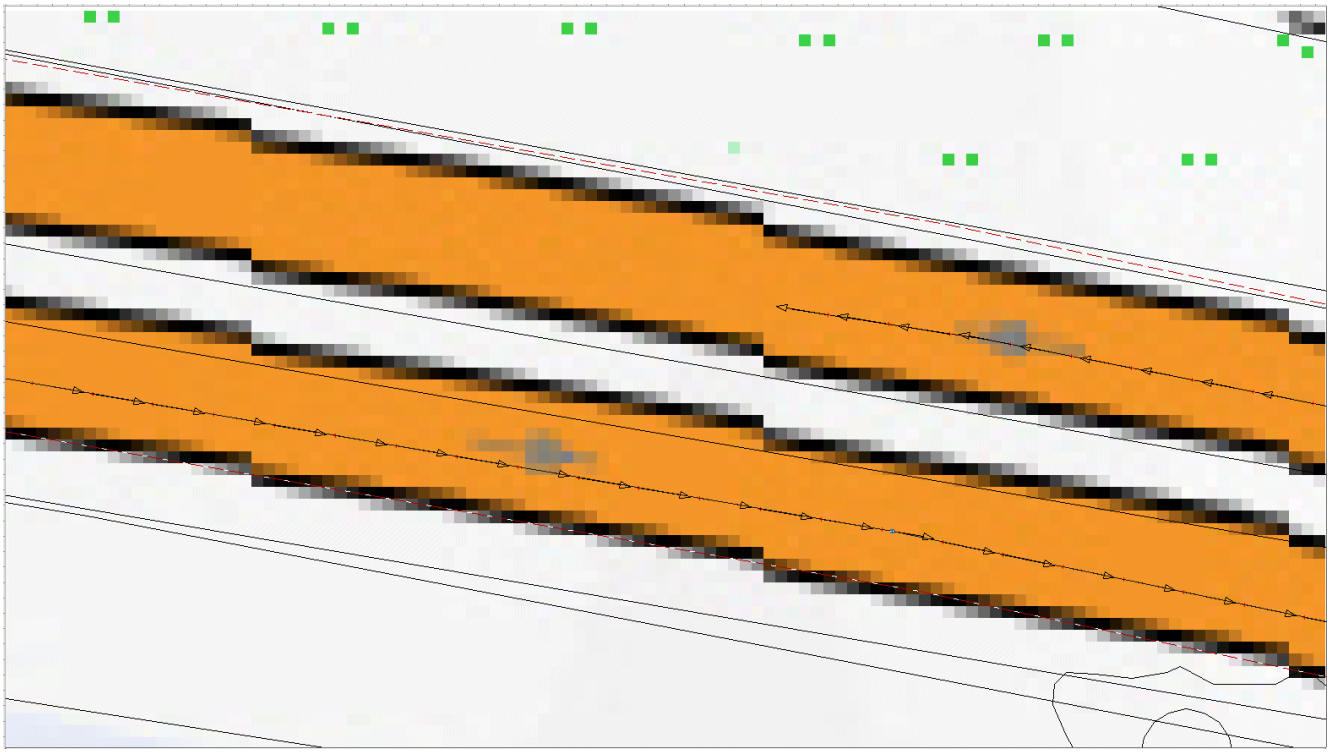


The desired viewing direction can be specified using the new **photovoltaic** input field on the right-hand side.

The **viewing direction** selection field can be used to select from the modes **Do not take into account**, **take into account**, and **Include opposite viewing direction**.

If the viewing direction is to be taken into account, it can be specified as a 3-dimensional vector using the input fields **dx/m**, **dy/m**, and **dz/m**. If the mode "Include opposite viewing direction" is selected, the entered angle of 180° is also used to determine the glare times.

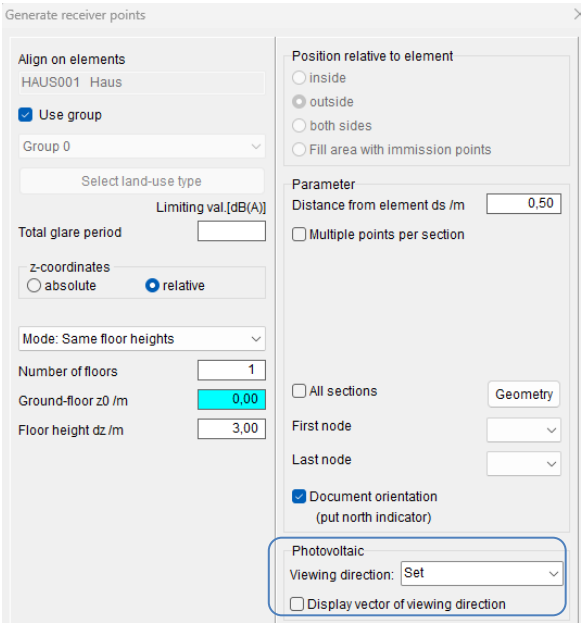
This vector can also be displayed as an arrow symbol on the site plan using the **Show viewing direction vector** button.



Extension of the "Create immission points" macro for the viewing direction:

The **Generate receiver points** macro (pop-up menu in the site plan: "Macros... | Generate receiver points") has been extended for the photovoltaic glare forecast type so that the viewing direction can be automatically determined and set during creation.

The "Generate receiver points" macro can be used, for example, to automatically create immission points along a road using the "Auxiliary line" element.



The **photovoltaic** input area on the right-hand side now also allows you to set the viewing direction automatically.

The **Viewing direction** selection field can be used to select from the modes **Do Not Set**, **Set**, and **Set Opposite View Direction**.

The parameter **Display vector of viewing direction** can be set directly using the same button.

When the immission points are generated, the viewing directions of the individual immission points are now also determined geometrically on the generation path, and the photovoltaic element parameters are automatically assigned.

Introducing block functions for the viewing direction

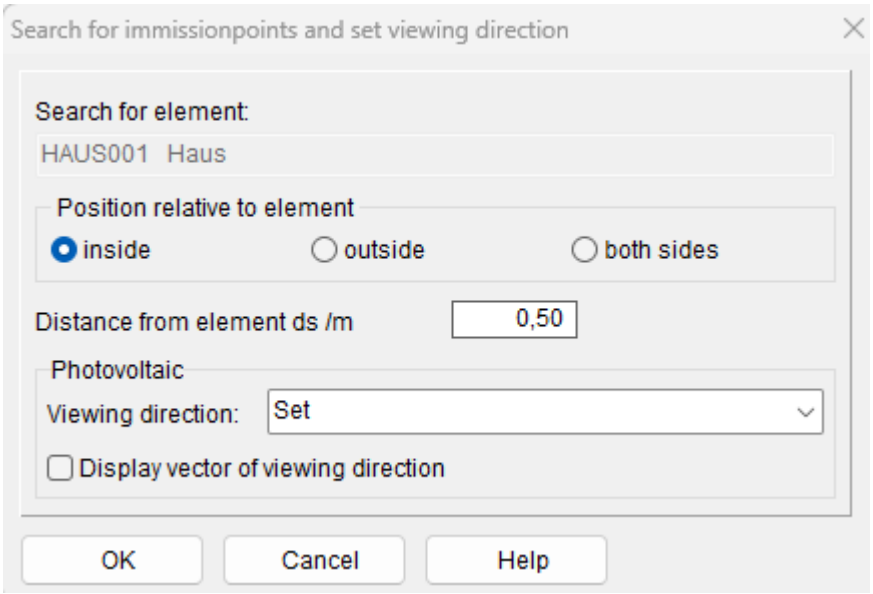
The "Edit block" function has been expanded for the parameters of the viewing direction of an immission point. The following additional entries are now available for this purpose:

- Consideration of the viewing direction for photovoltaic glare
- Viewing direction dx
- Viewing direction dy
- Viewing direction dz
- Display vector of the viewing direction in the site plan

New macro: Search for immission points – Set viewing direction:

If immission points were generated, e.g., via an auxiliary line on a road, but no viewing direction was specified during generation, this can now be done using the new macro "Search for immission points – Set viewing direction." To do this, select the corresponding auxiliary line in the site plan and select the macro (pop-up menu: Macros... | Search for immission points – Set viewing direction).

The dialog box "Search for immission points and set viewing direction" is provided for this purpose.



The Search for element: display field shows the selected element for the search by name and description for information purposes.

The Position relative to element selection area can be used to specify whether immission points should be searched for on the left, right, or on both sides of the line element. Left and right refer to the viewing direction from node (i) to node (i+1) of the element. If the reference element is an area element, the terms "left" and "right" are not used, but rather the more descriptive terms 'inside' and "outside."

The input field Distance to Element ds /m can be used to specify the vertical search distance in the x-y plane to the reference element.

The desired viewing direction parameters are selected in the Photovoltaic input area.

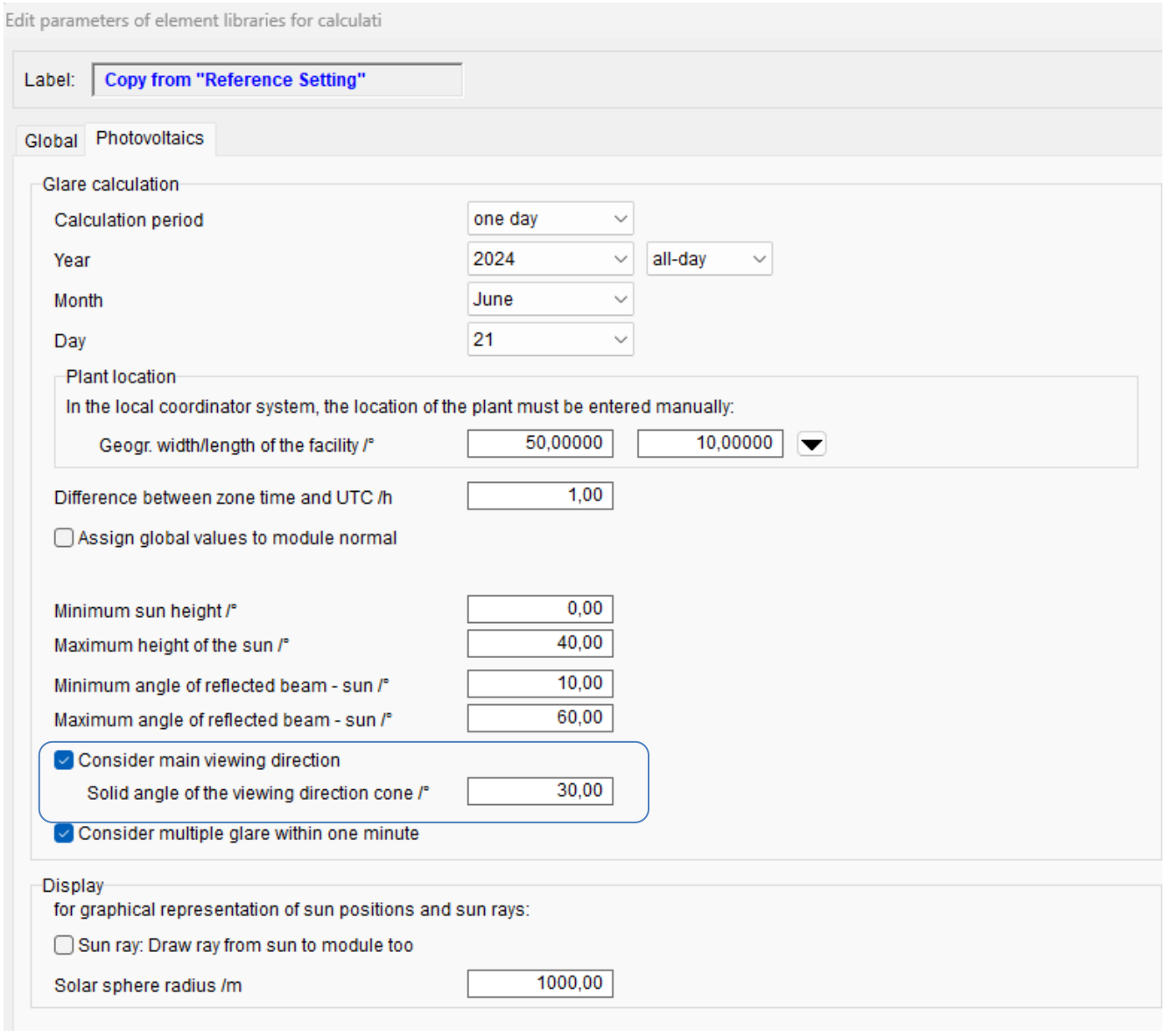
The View direction selection field can be used to select from the modes Do not set, Set, and Set opposite view direction.

The parameter Display vector of viewing direction can be set directly using the same button.

Once the desired immission points have been found, the view directions of the individual immission points are determined geometrically, and the element parameters are automatically assigned.

Photovoltaic glare calculation Parameters for the viewing direction

Whether and how the viewing direction should be used for a glare calculation is defined using additional parameters on the "Photovoltaics" page in the "Edit parameters of element libraries for calculation..." dialog box. This can now also be used to specify the solid angle of the viewing direction cone for the calculation.



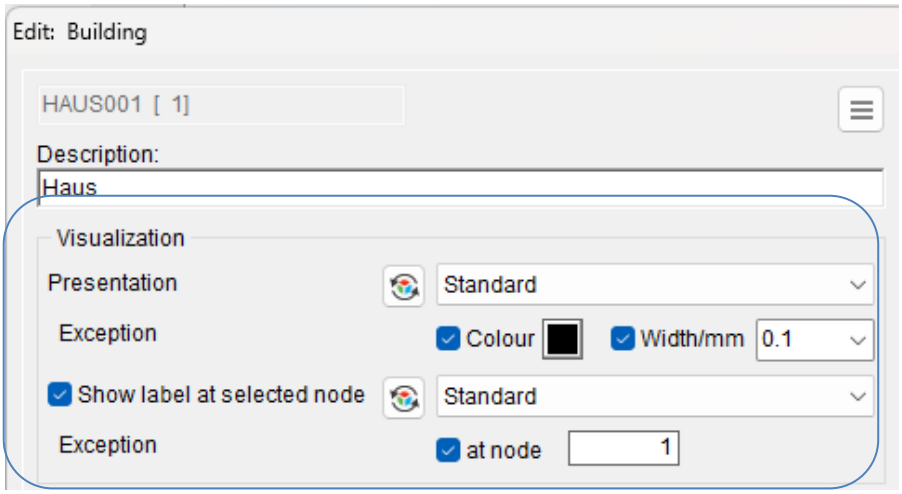
The main viewing direction is activated/deactivated for the calculation using the Consider main viewing direction check box.

If the main viewing direction is to be taken into account, the solid angle of the viewing direction cone /° can also be specified. This is preset to 30 °.

Optimizations in the element dialog

The individual visualization parameters of the element dialog have been combined in a new **visualization** group box.

The input lines **Presentation**, **Exception** for **color** and **width**, **Show label**, and **Exception at node**... have been included in a visualization group box. This has made it possible to eliminate the horizontal lines used for demarcation (which only appear in line and area elements).



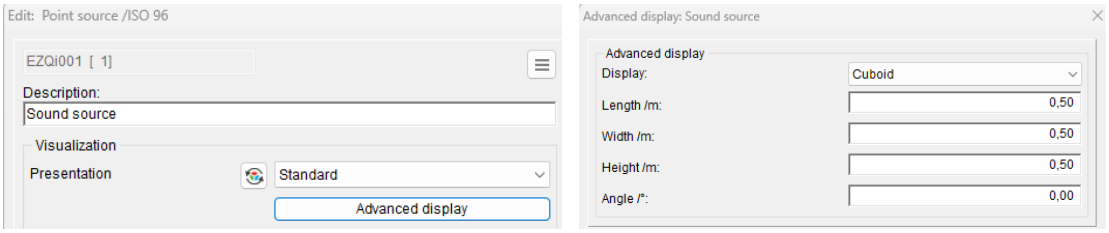
Advanced display for point sound sources

For point sound sources (PSS), a 3D body can be defined, which is only positioned visually in the site plan and in the 3D viewer as a wireframe model around a PSS.

Example: A heat pump (HP) is drawn in the site plan as a PSS with the dimensions of the actual HP.

This provides the user with a tool for placing a point sound source above the control system for calculation, and also for displaying a visual representation of the body represented by the point sound source.

To activate the advanced display of a PSS, the **Advanced display** button is provided in the **Visualization** input area of the element dialog.



The **Advanced display** button opens the **Advanced display: Sound source** dialog box.

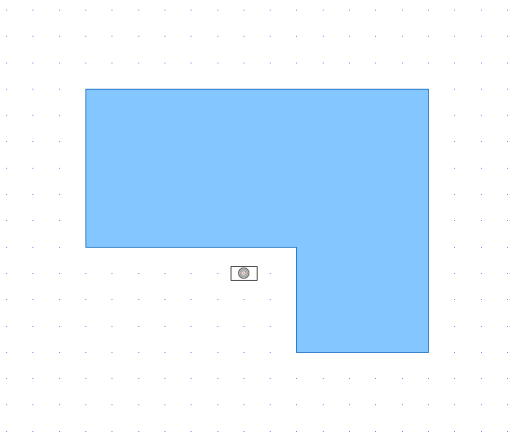
The advanced display can be set to **None**, **Cuboid**, or **Cylinder** using the **Display** selection field. Depending on the selection, additional geometric parameters are available for defining the body.

For the cuboid, the dimensions are length, width, and height in meters. In addition, an angle in degrees can be entered for the alignment.

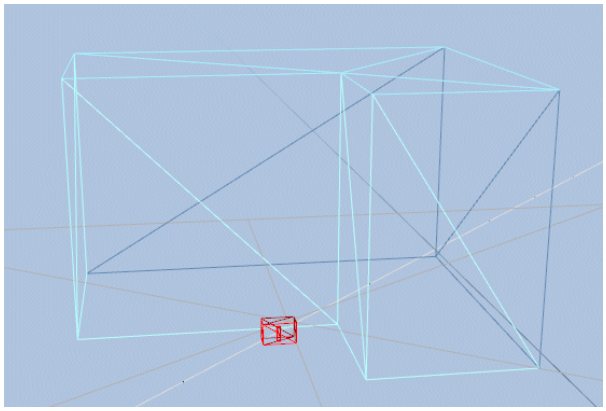
For the cylinder, the radius and height can be entered in meters.

Note: The advanced display is only a visual tool and therefore does not affect the calculation!

Example of a display in the site plan:



Example of a display in the 3D viewer:



Site plan functions for rotating the expanded view:

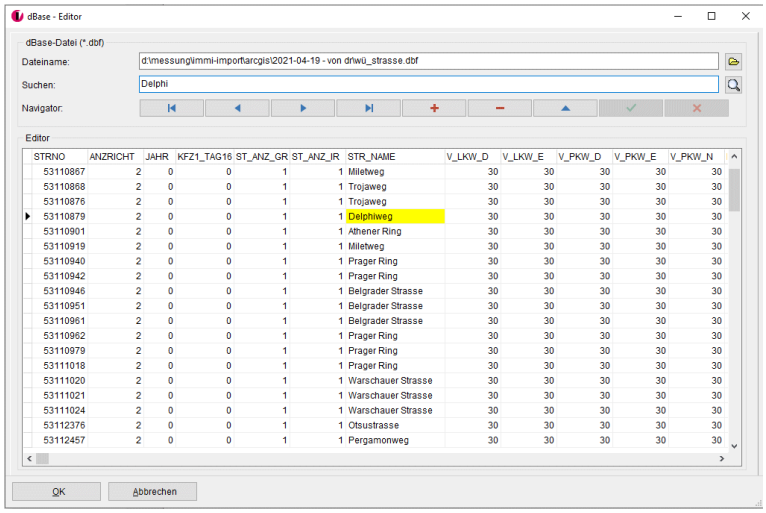
The body of the expanded view can also be rotated around the pivot point using the **Rotate element** function in the site plan. There are two alternatives for this:

- Using <Shift> + left mouse button or
- Using the pop-up menu: Elements … | Rotate element

New project input help – editing dBase (DBF) files

In connection with the import and export of ArcGIS files (SHP, SHX, DBF), our customers have repeatedly expressed the need for a straightforward dBase editor. This editor can be used, for example, to maintain factual data or to check and adjust character encodings quickly. Since not every user has access to complex GIS software, a simple dBase editor is now available via IMMI.

The new menu item "dBase Editor" can be accessed via the "Project | Input aids" menu. This allows dBase files (*.dbf) to be opened and edited. In addition, a text search can also be performed in the dBase file.



STRNO	ANZRICHT	JAHR	KFZ1_TAG16	ST_ANZ_GR	ST_ANZ_IR	STR_NAME	V_LKW_D	V_LKW_E	V_PKW_D	V_PKW_E	V_PKW_N
53110867	2	0	0	1	1	Miletweg	30	30	30	30	30
53110868	2	0	0	1	1	Trojaweg	30	30	30	30	30
53110876	2	0	0	1	1	Trojaweg	30	30	30	30	30
53110879	2	0	0	1	1	Delphiweg	30	30	30	30	30
53110901	2	0	0	1	1	Athener Ring	30	30	30	30	30
53110919	2	0	0	1	1	Miletweg	30	30	30	30	30
53110940	2	0	0	1	1	Prager Ring	30	30	30	30	30
53110942	2	0	0	1	1	Prager Ring	30	30	30	30	30
53110946	2	0	0	1	1	Belgrader Strasse	30	30	30	30	30
53110951	2	0	0	1	1	Belgrader Strasse	30	30	30	30	30
53110961	2	0	0	1	1	Belgrader Strasse	30	30	30	30	30
53110962	2	0	0	1	1	Prager Ring	30	30	30	30	30
53110979	2	0	0	1	1	Prager Ring	30	30	30	30	30
53111018	2	0	0	1	1	Prager Ring	30	30	30	30	30
53111020	2	0	0	1	1	Warschauer Strasse	30	30	30	30	30
53111021	2	0	0	1	1	Warschauer Strasse	30	30	30	30	30
53111024	2	0	0	1	1	Warschauer Strasse	30	30	30	30	30
53112376	2	0	0	1	1	Otsustrasse	30	30	30	30	30
53112457	2	0	0	1	1	Pergamonweg	30	30	30	30	30

The "dBase file (*.dbf)" input area can be used to select a dBase file, enter a search text, start the search, and use a navigator.

The "Editor" input field displays the contents of the dBase file as a table and allows editing.

The "File name" input field opens the "Load DBF file" dialog box, which can be used to load/open a DBF file from the existing directories.

A search text can be entered in the "Search:" input field, and the search can be started using the button on the right. Repeatedly pressing the button jumps to the following search result. The element found is highlighted in yellow. The search always starts at the current cursor position.

The following functions can be accessed using the "Navigator" buttons:

- First record
- Previous record
- Next record
- Last record
- Insert record
- Delete record
- Edit record
- Apply
- Cancel editing

Note 1: Unfortunately, editing column headers is not possible. The column headers of a dBase file cannot be changed here because modifying the file header is technically complex, can damage the file, and may cause compatibility issues. Specialized tools are required for this.

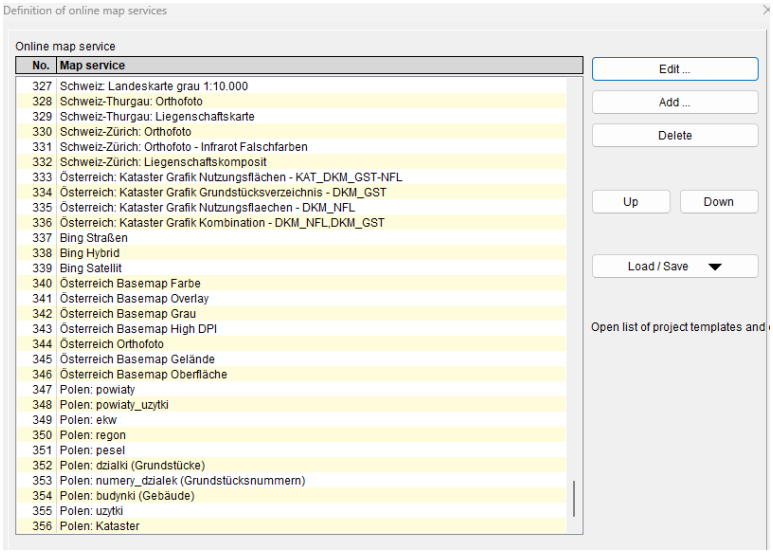
Note 2: Before editing a dBase file (DBF), always make a backup copy of the original file. This way, you can always revert to the original state in case of unexpected errors or data loss.

If you exit the dialog box by clicking the "OK" button, all changes will be applied, and the original file will be overwritten. If you click the "Cancel" button, the original file will remain unchanged.

Expansion of the freely accessible online map service list

- New WMS layers for Poland: The list of online map services has been expanded with various WMS layers for Poland. The entry "Poland: Cadastre" provides property boundaries, property numbers, and buildings as an online map service.
  In Poland, official cadastral data or other reliable geodata is often required for noise immission forecasts to:
  - determine the exact location of property boundaries,
  - define the correct calculation and assessment locations,
  - identify and avoid possible exceedances in good time.

  In Poland, when assessing noise immissions, the protected area is usually defined at the property boundary. Therefore, precise boundary lines are essential for forecasts and expert reports.



New parameter for the minimum zoom level

Every online map service provides its online maps for different zoom levels. These zoom levels are limited by a minimum and a maximum zoom level.

The maximum zoom levels are specified via the options parameter "numZoomLevels" and are transmitted directly to the Web Map Service. We have to specify the minimum zoom level on the IMMI page. Currently, this has been set to zoom level 5. This has enabled us to provide a very wide range of zoom levels.

However, some online map services support only a very limited range of levels (e.g., 18, 19, and 20). If other zoom levels have been preset, the online map service will only deliver white tiles. Finding the correct zoom levels can be a bit tedious. For this reason, we have now introduced a new parameter for each map service that can specify the minimum zoom level. The user can now specify this minimum zoom level. This means that zoom levels below the minimum will no longer be available. The selectable zoom range can thus be restricted.

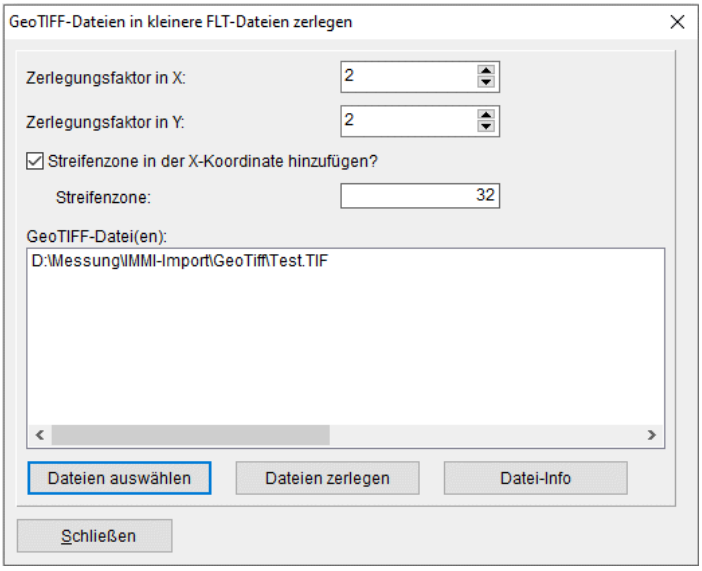
When the provider provides no explicit information, determining the smallest zoom level for a layer often requires trial and error.

In the **Add I edit map service** dialog, this can now be specified using the "Smallest zoom level:" input field.

New input help for splitting large GeoTIFF files into smaller FLT files

GeoTIFF files are often provided for importing terrain data into an IMMI project. These files can cover very large areas (1000 × 1000 m) and can be made available directly. The actual working area of the project often requires only a fraction of the area provided. To make this easier to handle, there is now a new input help option to convert large GeoTIFF files into smaller FLT (ArcGIS binary grid) files. This allows several small terrain tiles to be created as FLT files from large GeoTIFF files. These can then be imported individually to make the terrain model.

The new input help can be accessed via the menu **Project | Input Help | Split GeoTIFF Terrain Data**. The "Split GeoTIFF files into smaller FLT files" dialog can be used to parameterize and split the GeoTIFF files.



The factors for decomposition in the X and Y dimensions are specified using the input fields **Decomposition factor in X** and **Decomposition factor in Y**. If, for example, four smaller tiles are to be generated from a large square terrain tile, the decomposition factors must be parameterized with 2 in each case.

The **Add Strip Zone in X Coordinate?** The button can be used to enter the strip zone via the Strip Zone input field, which is then taken into account when generating the FLT files. The header file (*.HDR) is then created with the desired X coordinate (XLLCORNER). The correct strip zone can then be useful again when importing the FLT file if the existing coordinate system contains it.

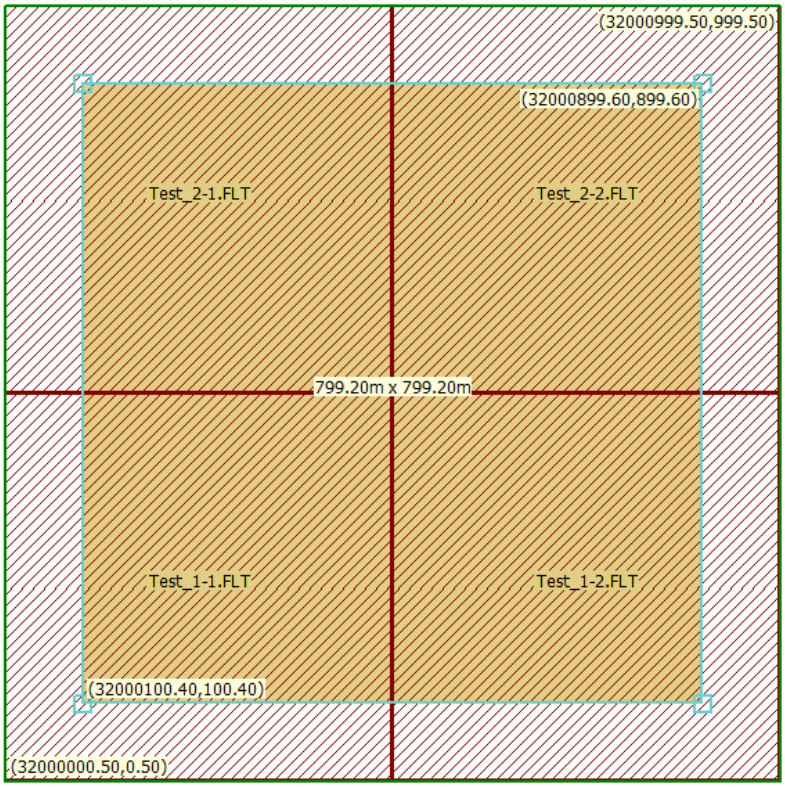
Use the **Select Files** button to select one or more TIF files for decomposition using **multiselect**.

The selected **GeoTIFF files** are listed in the GeoTIFF file(s) display field.

The **Split files** button splits the selected TIF files into several FLT files using the split factors. These newly created FLT files are stored in the existing directory of the TIF file(s). The file names of the FLT files are composed of the TIF file name and an addition containing the row and column numbers. The numbers are counted from bottom to top and from left to right.

Example:

- TIF file name: "Test.tif"
- Split factor in X and Y: 2
- Generated FLT file names: "Test_1-1.flt" (lower left tile) to "Test_2-2.flt" (upper right tile)



After successful decomposition, a corresponding success message is displayed.

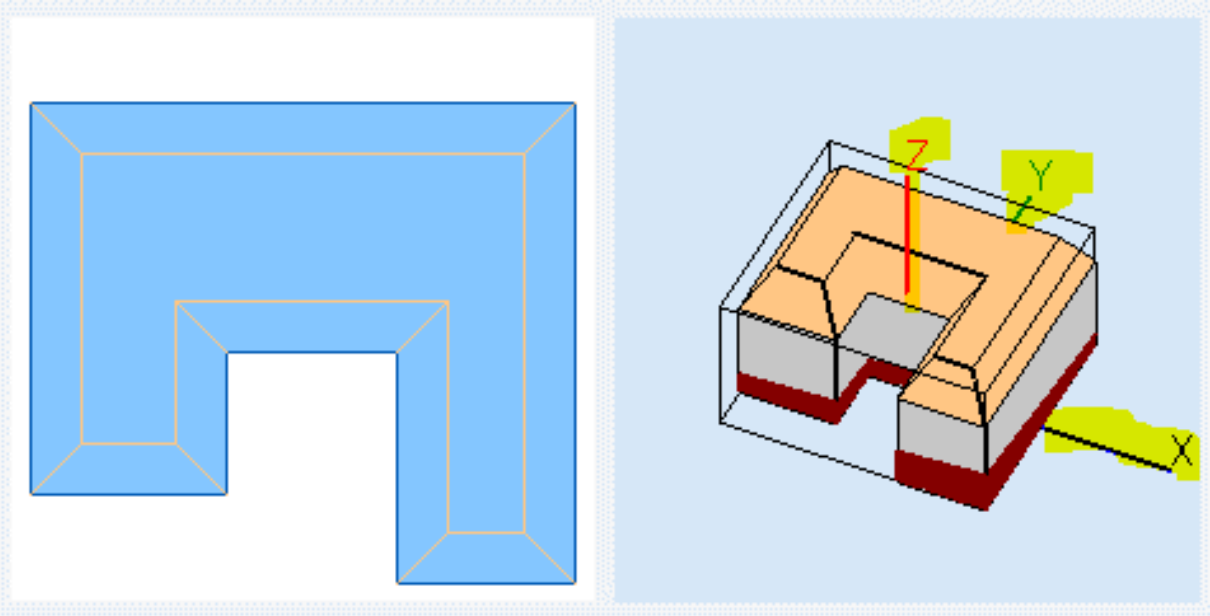
The "File Info" button displays information/properties of the selected GeoTIFF file in a list.

Expansion of the 3D view of elements

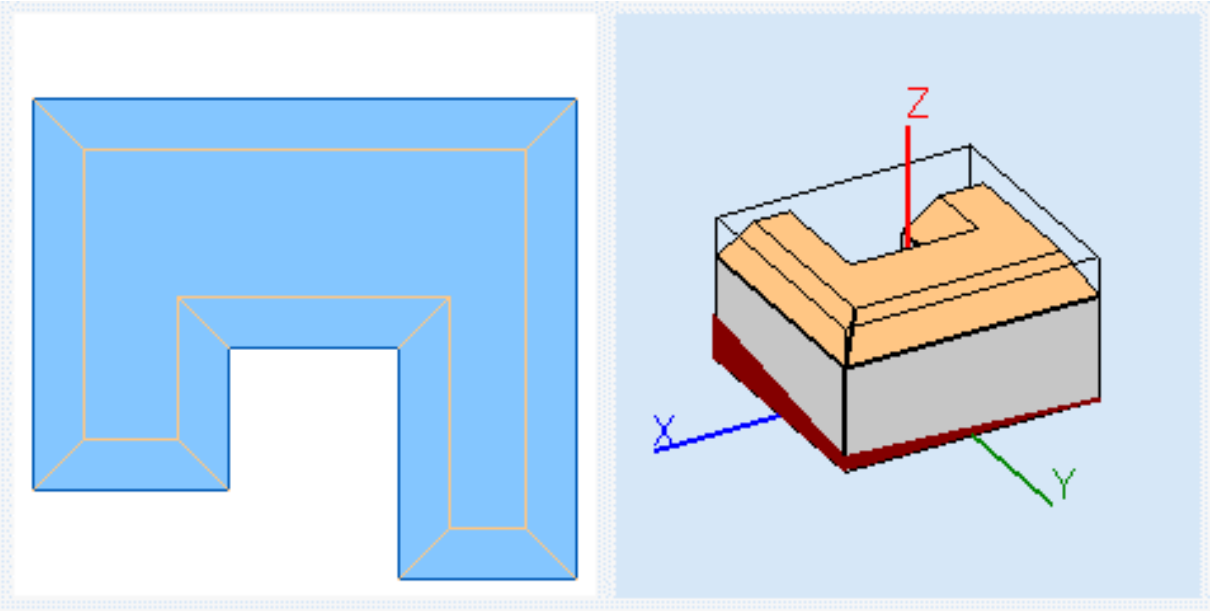
Currently, the "Element Input" dialog box provides a floor plan and 3D display for some element types (e.g., house, wall, bent noise barrier, or reflection element). However, the 3D display is static; you cannot rotate the object and view it from all sides, for example. This 3D view has now been revised and expanded.

The following new features are now available:

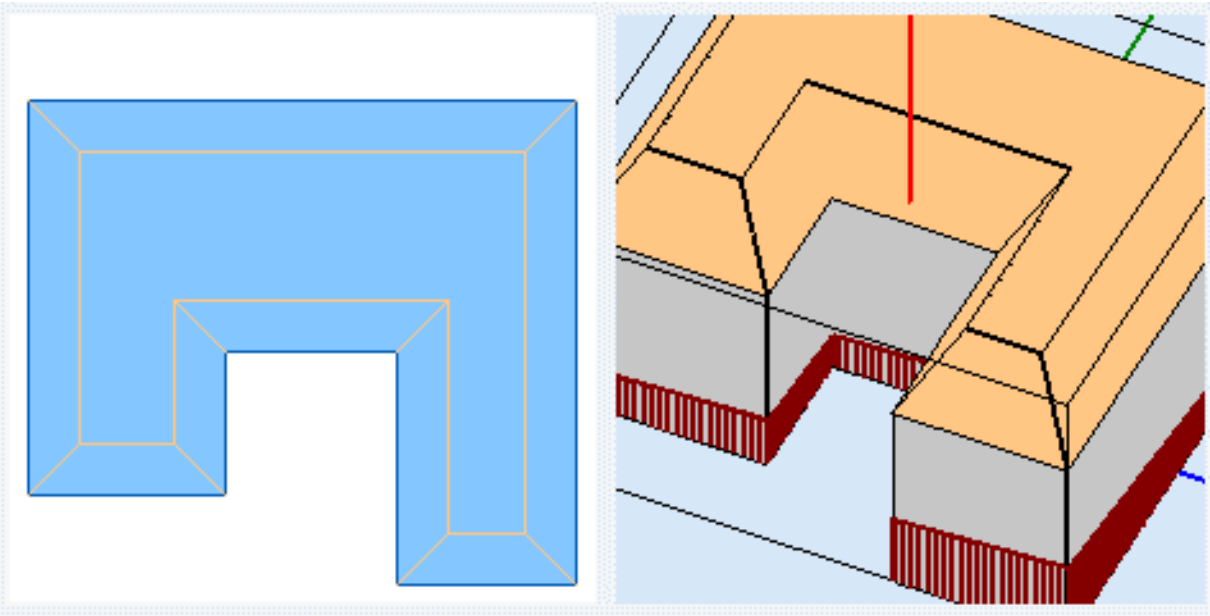
- **Display of the X, Y, and Z axes:** To maintain orientation while rotating the object, the three spatial axes are also displayed (X axis = blue; Y axis = green; Z axis = red).



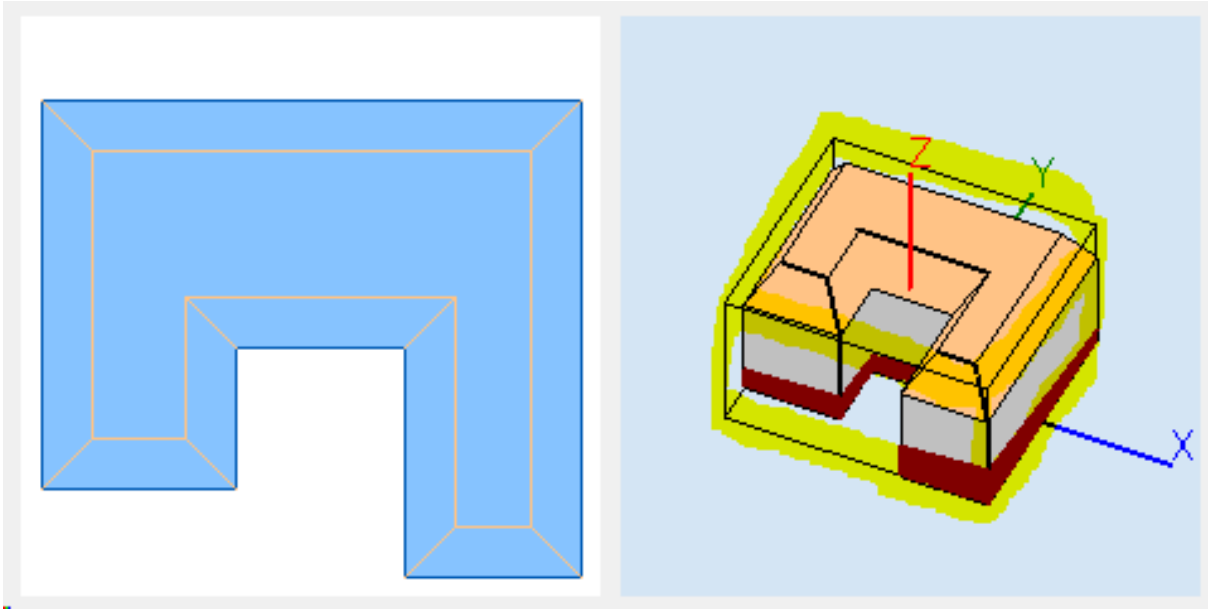
- **Rotating the element using the mouse:** Hold down the left mouse button and move the mouse to rotate the object as desired.



- Zooming in using the mouse wheel: You can zoom in or out of the 3D view by turning the mouse wheel. This moves the camera closer to or further away from the 3D object being displayed. This allows you to adjust the distance between the camera and the object flexibly.
- Zoom in: Turn the mouse wheel back (toward the user) to zoom in closer to the 3D object.
- Zoom out: Turn the mouse wheel forward (away from the user) to move away from the 3D object.



- Display of a bounding box: The element is additionally displayed with a "bounding box." This bounding box is placed as a rectangular box parallel to the axes around the element object.



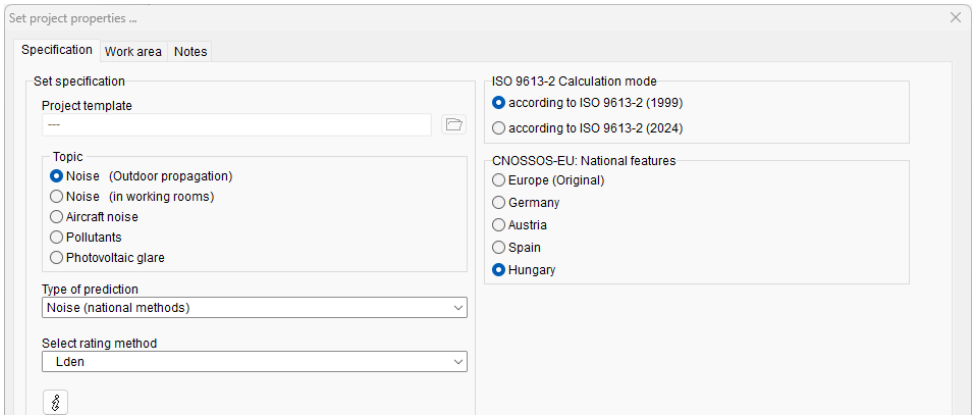
Note: If the 3D display is not shown, this may be because no terrain is available or has been calculated. This can be remedied, for example, by using the site plan function **Terrain | Recalculate terrain** (available in the pop-up menu in the axis area).

Extensions to the CNOSSOS-EU library for Hungary

In Hungary, Government Decree No. 284/2007 (X. 29.) (Korm. rendelet a környezeti zaj és rezgés elleni védelem egyes szabályairól) applies to the calculation of sound propagation from road, rail and industrial sources.

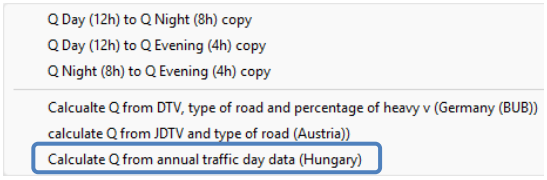
Ministerial Decree No. 93/2007 (XII. 18.) (93/2007. (XII. 18.) KvVM rendelet a zajkibocsátási határértékek megállapításának, valamint a zaj- és rezgéskibocsátás ellenőrzésének módjáról) lays down detailed rules on calculation methods.

The CNOSSOS-EU element library has been expanded for Hungary. To use the regulation, set the default setting to Hungary in the **Project I Properties** menu.

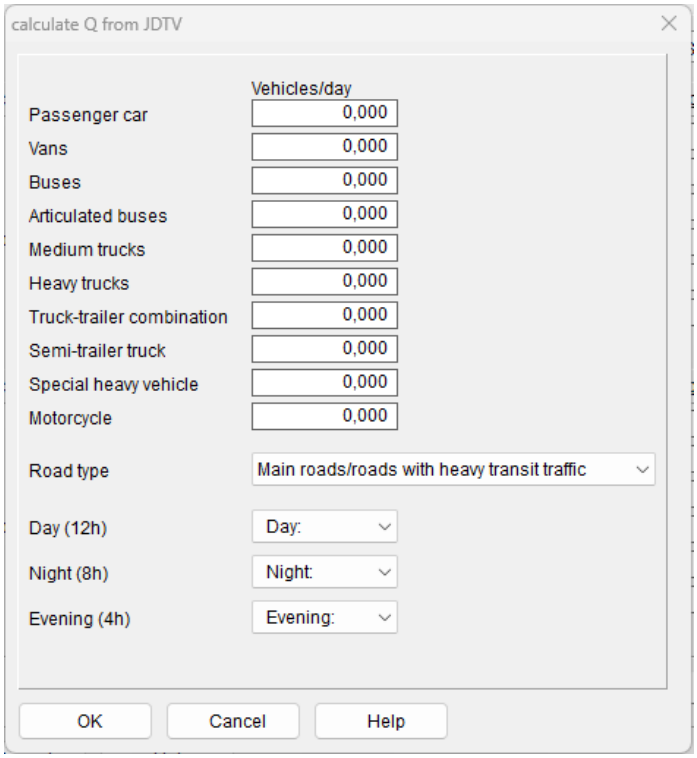


Roads - Hungary

- Hungarian road surfaces have been added. If such a road surface is selected, the parameters AR, AP, etc. are used.
- The parameters AR, AP, BR, BP, ASpike and BSpike for Hungary have been added.
- The country 'Hungary' can now be selected in the project properties. This activates the gradient surcharges specific to Hungary.
- The traffic load Q (in vehicles/hour) can be calculated from the annual daily traffic figures (ADT).



Input dialogue for the ADT to calculate the parameter Q in vehicles/hour.



Rail - Hungary

- Hungarian rail vehicles have been added.
- New values have been added for the following spectra for Hungarian rail vehicles:
  - LRVEH
  - A3
  - LHVEH
  - LW0IDLING
  - LW0Const
  - LW0AERO

The rail vehicles were then generated using these and the CNOSSOS standard spectra.

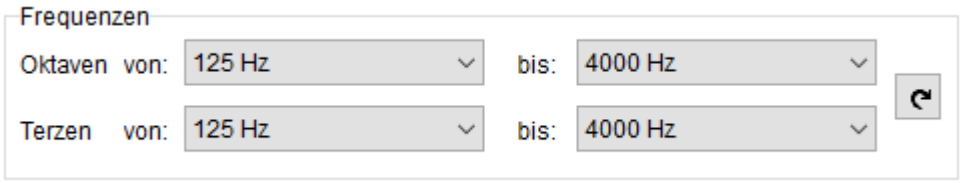
Changes

- Menu file: The entries "New Project," "Load Project," etc. have been replaced by the terms "New," "Load," etc. The menu item "RKZ History List" has been removed.
- Shape import: The dialog for shape import (menu: File/Import/ArcGIS files) has been revised. In particular, it is now possible to edit a newly defined filter directly in memory.
  - Redefine filter: Creates a new import filter and allows you to assign dBase entries to element properties.
  - Edit filter: The last filter created or loaded can be edited.
  - Load filter: Loads a saved filter.
  - Save filter: Saves the filter that is currently in memory.
  - Document filter: Lists the assignments made in the filter.
    In the "Define filter" dialog (see Redefine filter), some help functions have been placed on a menu button:

  - Delete all assignments: Deletes the assignments of all dBase columns to all element properties.
  - Delete selected assignments: Deletes only the assignments marked with the cursor.
  - Load filter: Loads a filter file and immediately displays the filter for editing.
  - Save filter: Saves the filter currently being edited.
- New emission values for British Standard BS 5228: Tables C1,2009 to C12 2009 (tables 1 to 12 in the above list) of BS 5228, 2009 have been supplemented. This means that the emissions described there for sound sources in accordance with BS 5228 are now also available.
  See: BSI British Standards, "Code of practice for noise and vibration control on construction and open sites – Part 1: Noise," BS 5228-1:2009
  The new dBase editor is used to edit these tables.

  Important note: Projects created before version 2025/Update 1 do not yet contain these lists. However, the lists can be added to the new project using the "Provide new tables" button if desired.

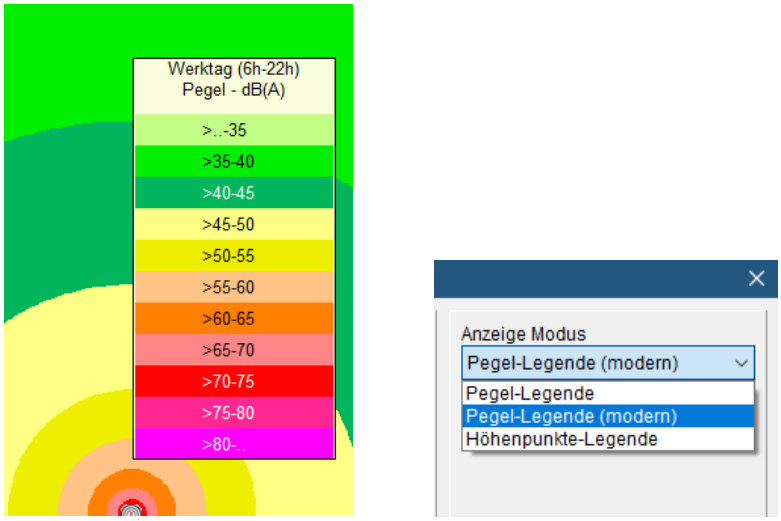
- Input dialog box for BS 5228 sources: This dialog box has been revised to make input easier and clearer.
- Shielding effect of photovoltaic modules: The barrier effect of a photovoltaic module can now only be switched ON or OFF. (It is no longer possible to select the type of diffraction, as is the case with the reflection element.) It is also no longer possible to select which edge allows diffraction and which does not. The element itself knows how to handle shielding or shading.
- Blend time of a photovoltaic module: Previously, the blend time of a module determined in the last calculation run was displayed in the module dialog box. In IMMI, it is highly unusual and very confusing to display calculation results in an element's input dialog box. Therefore, the blend time is no longer displayed in the input dialog box. The results lists are available for this purpose.
- Label element: This (very old) function placed a text element next to the element to be labeled. Now, when this function is used, the "Enable label" property is activated, and the text entered in the "Label" field is displayed. The advantage of this new procedure is that when the element is moved, the label is automatically moved with it.
- Display node direction: This option is evaluated for all line styles. In addition, the node direction is now also displayed for area elements.
- Frequency range for statistical room acoustics: The upper and lower frequencies for third octave and octave calculations can now be set. This allows, for example, the reverberation time to be calculated for a different frequency range than usual (125Hz..4000Hz). This can be used, for example, if values are not available for an absorption material across the full frequency range from 125 to 4000Hz. For this reason, the reverberation time should be calculated only over a narrower range.



- Terrain shading: Drawing terrain shading has been significantly accelerated. This is particularly noticeable when zooming in on the site plan.

  Note: The terrain shading display is not saved. When loading a project, the shading display is always off at first.

- Color Legend Element: The Color Legend element can now also be displayed in a modern style on the site plan. The display then corresponds to the modern color legend in the toolbox. The display mode can be selected in the color legend dialog box. The options for the modern display are based on the settings made for the color legend in the toolbox.



A "color legend" element in the site plan with a grid. (left) Setting the display mode in the dialog box (right)

Note: If no calculation result is displayed in the site plan, only a gray rectangle is displayed as a placeholder instead of the colored legend. This happens regardless of the display mode.

Bug Fixes

- Definition of grid areas for calculation: Previously, the "Copy from" button could be used to apply an existing grid definition as a template. However, in some cases, this function could cause crashes. Copying now works correctly.

  The "Copy from" button has been renamed "Template." (This is the usual term for this functionality in IMMI).

- Extended directivity (XHN): If the directivity vector of an extended directivity with XHN file pointed exactly in the direction (0,1,0) (in the direction of the Y-axis), the directivity was not taken into account. This has now been fixed.
- Align immission points with buildings: When automatically aligning immission points (IP) with buildings, the variants in which the buildings are located were not taken into account correctly. This could result in the IP being aligned with a building that was not shown on the site plan because it did not belong to the currently displayed variant. The IPs were therefore not aligned with the desired, visible building. Now, only the buildings that are visible in the current variant are used for alignment.
- Exclusive editing of element types: If the "Exclusive editing of element types" function was enabled in the toolbox when the project was saved, a runtime error could occur when the project was reloaded. The error has been fixed.
- DXF import: When importing solid elements, the geometry dialog for the solid element was not displayed correctly after import. This meant that z-coordinates could be entered for this element, but they were not used, which could lead to confusion. The geometry dialog box is now displayed correctly.
- Bent noise barrier: If a bent noise barrier was used in a project with different variants, it could happen that the shielding effect of the wall was not correctly taken into account in every variant. The error has now been fixed.
- CNOSSOS-EU library: When calculating the average level between the source and the first relevant obstacle, the terrain height at the obstacle point could be calculated incorrectly. The error has been fixed.
- Element: Color legend: The "Color legend" element (always displayed within the site plan) was sometimes displayed with incorrect colors in the report manager. The display is now correct.

Note: The "Color legend" field (usually displayed outside the site plan) was previously displayed correctly.

If you have any questions, please feel free to contact us:

Wölfel Engineering GmbH + Co. KG
Max-Planck-Straße 15
97204 Höchberg
Germany
Telephone: +49 931 49708-0
Email: info@immi.eu
Homepage: www.immi.eu

Technical support/hotline:

Ms. Denise Müller
Telephone: +49 931 49708-505
Email: denise.mueller@woelfel.de
Hotline email: info@immi.eu