

## New Environmental Noise Planning Software Ideal for Occasional Users

Europe's roads are currently undergoing a transformation, with more emphasis on protecting its citizens from excessive noise. Noise is not only an issue throughout Europe but is becoming a global issue as well. As the world population increases, the need for quiet places near schools, parks, hospitals, and homes is becoming ever more critical. Noise modeling software is used to analyze existing noise situations, determine where noise reduction plans are needed, and provide options for noise planning.

Noise planning software calculates the noise levels from roads, railways, airports, and industry and leisure facilities. Each of these can be calculated individually, or added together for a total picture. Once existing noise levels are determined, maps can be made to show results. Maps can show current noise levels, the difference between predicted noise and noise limits, and the difference between planning options.

Software that calculates and maps all of these is expensive and complex. Many jobs require only a few of the many features. Companies do not want to invest money and time in complex software when they have less comprehensive noise control objectives. A new software, SoundPLAN-essential, is available for less complex jobs and occasional users, saving both time and money for planning noise reduction.

SoundPLAN-essential was conceived with occasional users in mind, who do not have an in-depth background in acoustics and want to attain results of noise calculation

quickly and professionally. SoundPLAN-essential is based on the original SoundPLAN calculation core, known for its power, fast data processing, and striking graphics. SoundPLAN-essential is a compact version of SoundPLAN, and is said to be so easy to use, even engineers without special training for noise control have no trouble using it. And since it includes SoundPLAN's noise contour map capabilities, presentations are easy to create and easy to understand.

SoundPLAN-essential is a single-document application with all the basic information for planning noise control. It calculates noise from roads, railways or industry. Each is included in the software, but the calculations are completed for a single noise type at a time.

Every country has its own noise calculation guidelines and assessment methods. These automatically appear during installation, so each user installs a country specific setup.

SoundPLAN-essential calculates any amount of data so it can be used for any size job. Data are imported from GIS and CAD or digitized on top of bitmaps. It has all the basic tools and editing functions needed.

Result tables and graphics show what is happening with the noise. The emission-level calculations and results of the noise propagation are presented in tabular form in predefined tables.

SoundPLAN-essential calculates single receivers and noise-limit and regular contour lines. A "single-receiver" calculation shows noise levels, assesses correct time

slots, and applies the level additions for the noise descriptor required in the country (day and night or day, evening, night ( $L_{den}$  . . .)) for all receivers and floors. The level chart shows the magnitude of the noise received. The rays in the diagram depict noise coming to the receiver from a certain direction. The length depicts the magnitude. Yellow shows noise coming directly into the receiver, and red shows reflected noise. The total noise level is derived by adding the contributions of all the rays. A single-receiver map shows the results from single-receiver calculations and presents the noise-limit contour lines for the calculated time slots. An example of a single receiver is at the bottom of Figure 1.

Grid noise maps are used for color contour maps for day and night or the  $L_{den}$  time slots. The grid noise maps and noise contour maps can show sound levels using either color bands or numeric values. A map showing noise contour lines is in the middle of Figure 1. The top of Figure 1 is an inner-city scenario, with receivers on the building and a coordinating table showing sound levels during day and night time slots.

Noise-control walls and berms are often used to reduce noise along roads. Tables and graphics can show sound levels with and without the control wall. It is easy to see how much the wall reduces the noise Figure 2.

Whether modeling noise from roads or parking lots, noise protection walls or berms, SoundPLAN-essential allows standard noise control cases to be processed quickly, efficiently and with minimal overhead. S&V

Additional information on SoundPLAN-essential and other SoundPLAN products can be obtained from: [marketing@soundplan.com](mailto:marketing@soundplan.com).

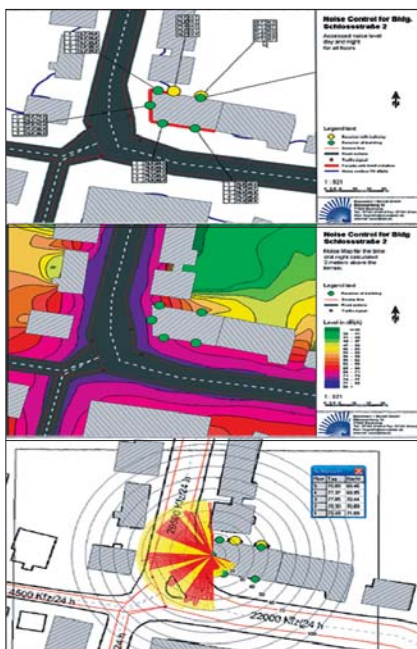


Figure 1. Top to bottom: inner-city scenario; noise contour lines; and single receiver map.

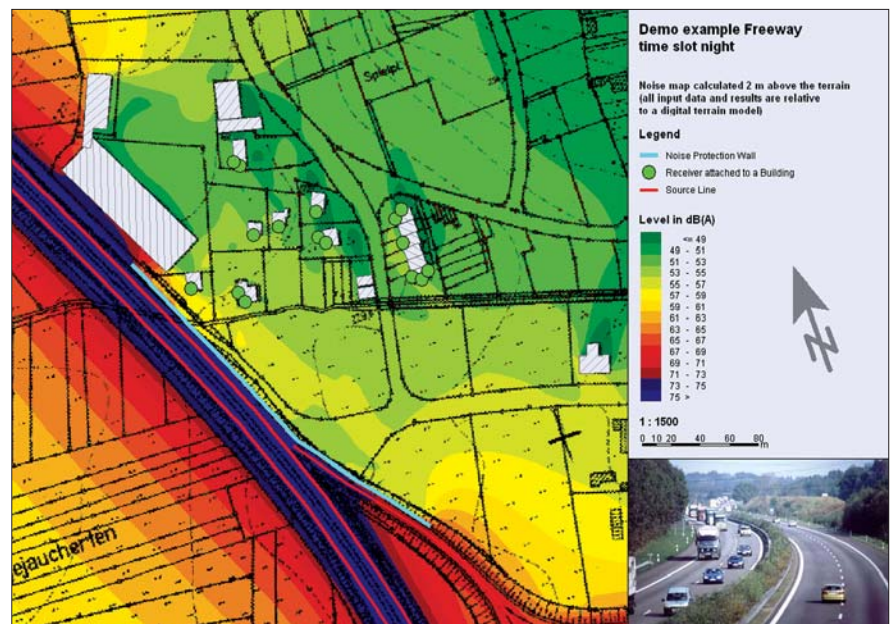


Figure 2. Noise-control wall (light blue) and resulting noise reduction.