



# MINERVA

For noise calculations in environmental and building acoustics

## Acoustic Calculation Tool

### FEATURES:

- Calculates transmission from indoor to outdoor, outdoor to indoor, room to room or outdoor propagation.
- Has built-in databases of noise sources, transmission loss and absorption.
- Replacement for spreadsheets and hand calculations.
- More powerful, robust and intuitive than an "in-house" spreadsheet.
- Moving sources can be easily evaluated.
- Variety of source data entry options
- Quicker, simpler and less expensive than full 3D acoustic modelling software.
- Key information shown pictorially for easy review.
- Demo version available.

This software was developed by Keith Ballagh, Senior Partner with Marshall Day Acoustics. It was developed to speed up and formulate the repetitive calculations associated with acoustic calculations.

Marshall Day is an independent acoustical consulting firm. The firm is located in New Zealand, Australia and Asia with offices in Auckland, Wellington, Christchurch, New Plymouth, Melbourne, Sydney, Adelaide and China.

MDA have approximately fifty professional staff, each bringing their own unique experience to the firm and providing a wide range of acoustical, environmental noise, and noise control design services.

Contact Keith Ballagh at MDA Auckland for further information:

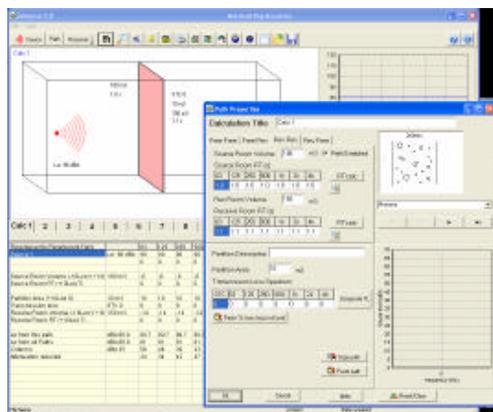
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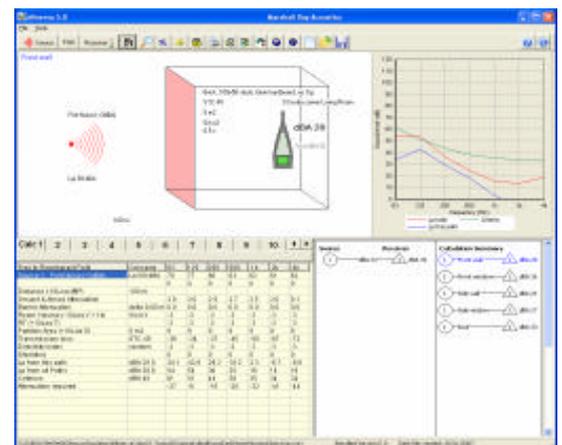
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Minerva software is designed to automate and speed up the most common sound transmission calculations. For instance calculating the noise level inside a building from road traffic noise, or the noise level at a house due to an industrial plant nearby. It has been developed by acoustical consultants as an everyday tool which is easy to use and has a variety of ways of entering information. It uses the simple "source-path-receiver" model with input forms for each. There are easily accessed databases for: noise sources, sound transmission loss, and sound absorption coefficients. The reverberation time of a room can be quickly calculated by choosing materials from the built-in database.



The basic details of the calculations are shown pictorially, graphically and in a tabular form. Calculations are carried out in octave bands from 63 Hz to 4 kHz.

There are twenty "pages" available for calculations and these can be easily cross-linked. For instance, one source can be used on several different calculation pages to represent different transmission paths from an aircraft into a house (wall, window, roof, etc), changes to the source are instantly reflected on each page. There are four basic sound transmission situations; indoor to outdoor, outdoor to indoor, room to room, and purely outdoor propagation (ISO 9613 and Concawe). The effect of noise barriers, ground absorption and atmospheric absorption can be modelled.



The software has been developed by a large acoustic consulting group and Version 5 represents the latest point in a long and continuous development process.