

Living Room		Junction	Receiving Room	
Basic Element	Additional Layer	Type-No.	Basic Element	Receiving Room
1				
2	Acoustic Absorbent (1000 kg/m³) 240 mm, render 2x			
3	Lightweight brick 1 x 0.300 mm, render 2x15 mm	2	Lightweight brick 1 x 0.300 mm, render 2x15 mm	
4	Lightweight concrete (1200 kg/m³) 140 mm, render	1	Lightweight concrete (1200 kg/m³) 160 mm, render	
5	Concrete floor (2300 kg/m³) 140 mm, render 1x15 mm	2	Concrete floor (2300 kg/m³) 140 mm, render 1x15 mm	
6	Acoustic sulphate 40 mm, Aquaflex			
7	Complete floor (2300 kg/m³) 140 mm, render 1x15 mm	2	Complete floor (2300 kg/m³) 140 mm, render 1x15 mm	



The Building Acoustics
Planning System

BASTIAN®

The software-tool for calculations in building acoustics

BASTIAN is the most advanced software for predicting the sound insulation in buildings based on the European standard series EN 12354.

BASTIAN calculates the sound insulation regarding the following aspects:

- ☒ airborne sound insulation between rooms (according to EN 12354-1)
- ☒ impact sound insulation between rooms (according to EN 12354-2)
- ☒ airborne sound insulation against outdoor sound (according to EN 12354-3)

BASTIAN is highly flexible to handle all types of calculations:

- ☒ calculations in third-octave band width or with single number ratings
- ☒ for all parameters to express building performance according to ISO 717-1 and -2 (including the spectrum adaptation terms)
- ☒ for parameters STC and IIC according to ASTM E 413-87 and ASTM E 989-89

BASTIAN®

A fully Windows-based program – user-friendly and easy to use

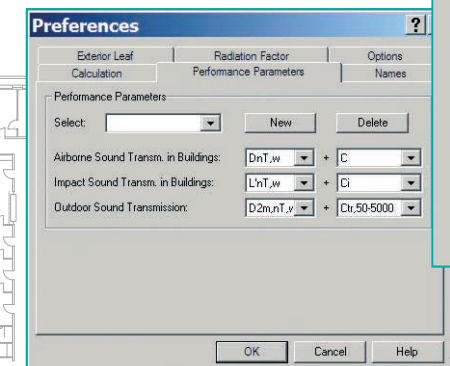
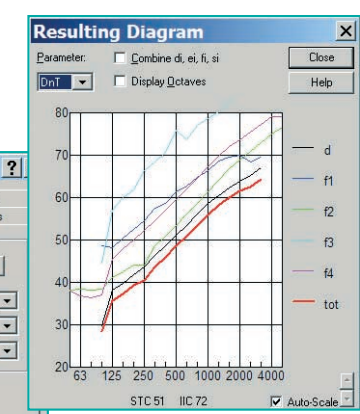
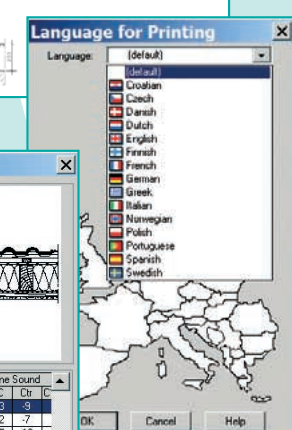
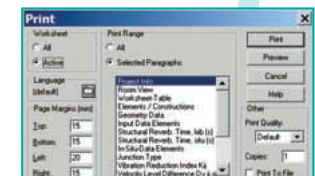
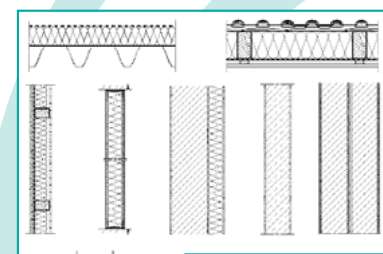
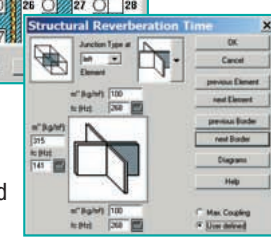
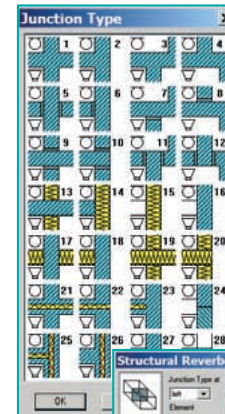
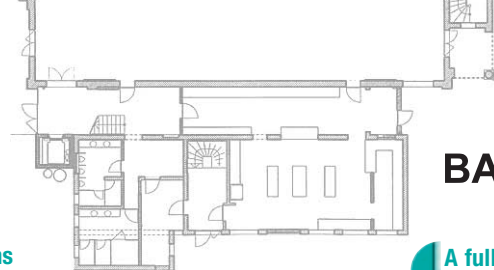
Some **BASTIAN**-features:

- ☒ calculation of the sound insulation based on data on the sound insulation of the transmitting elements and systems
- ☒ doors, windows, and air intakes can be inserted into the separating construction
- ☒ additional flanking elements or sound transmitting systems, such as ventilation and cable ducts
- ☒ junction types for combinations of heavy single and double-walls, lightweight walls and floors, and flanking cavity walls
- ☒ easy generation of variants by duplication and inversion of room situations for changed preferences
- ☒ calculation of the structural reverberation time in-situ
- ☒ correction of the radiation factor for flanking elements
- ☒ calculation of the interior sound pressure levels for sound transmission from the outside
- ☒ database with more than 1500 constructions and sound sources
- ☒ multi-lingual user interface in German, English, and in French

BASTIAN®

Data import & export

- ☒ database for constructions and sound sources expandable by the user
- ☒ import of sketch-files (BMP/JPG) for user-defined constructions
- ☒ import of noise immission spectra from **Cadna A**
- ☒ export of sketches for constructions
- ☒ export of all calculated data in MS-Excel-format
- ☒ configurable print-preview/print-outs
- ☒ print-preview/print-outs in 15 European languages



Construction	Joint	Airborne Sound
	X	Xw C Ctr C
[D] concrete tiles, Isover glass wool (type 1) 160 mm, gypsum board 2x12.5	R	52 -3 -9
[D] concrete tiles, Isover glass wool (type 1) 160 mm, timber 14 mm	R	46 -5 -12
[D] concrete tiles, plankings 24 mm, Isover glass wool (type 1) 160 mm, gyp	R	52 -3 -9
[D] concrete tiles, plankings 24 mm, Isover glass wool (type 1) 160 mm, gyp	R	47 -2 -6
[D] concrete tiles, plankings 24 mm, Isover glass wool (type 1) 160 mm, terb	R	45 -4 -10
[NLI] Eternit roofing tile 8 mm, roof lath 24 mm, wood 12 mm, Isover glass w	R	31 -1 -5
[NLI] Eternit roofing tile 8 mm, roof lath 24 mm, wood 12 mm, Isover glass w	R	48 -3 -8
[NLI] Eternit roofing tile 8 mm, roof lath 24 mm, wood 12 mm, Isover glass w	R	50 -3 -7
[NLI] tile 15 mm, roof lath 24 mm, wood 12 mm, Isover glass wool (type 1) 114	R	45 -2 -8
[NLI] tile 15 mm, roof lath 24 mm, wood 12 mm, Isover glass wool (type 1) 114	R	46 -1 -8



BASTIAN® - Auralization

Listen to the sound inside the receiving room!

- optional extension for **BASTIAN**
- renders audible all calculation results for airborne sound transmission between rooms and from the outside
- no additional hardware required – pure software solution (requires just a 16-bit sound card)
- 46 various interior (e.g. speech, stereo set, TV-set, several musical instruments) and exterior sound sources (e.g. road and air traffic noise, railway noise) and 9 different kinds of receiving rooms available
- considers 5 directions of transmission by use of the appropriate binaural head related transfer functions

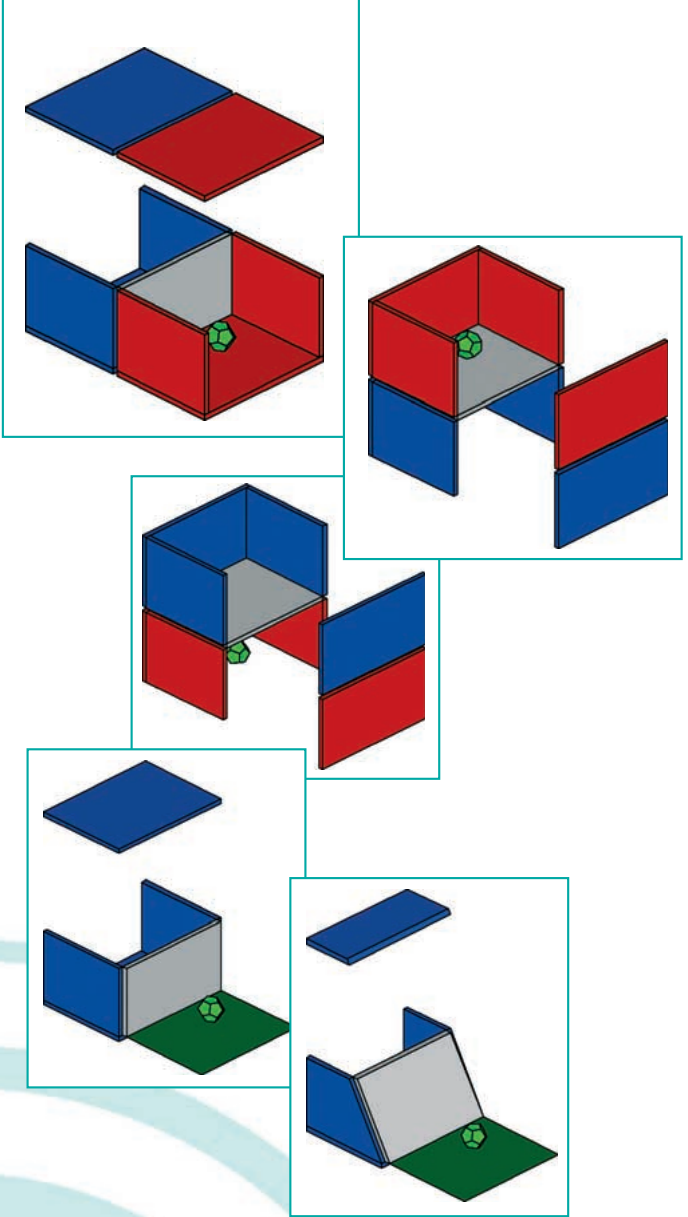
The screenshot displays the Bastian software interface. The main window shows a 3D model of a room with dimensions 4.00 and 8.00. A 'Rotator!' dialog box is open over the model. The 'Auralization' dialog box is also open, showing the following settings:

- Sound Source: interior exterior
- Highway A 7 (6 Lanes), 81 dB(A)
- Worksheets: Extrapolation
- [Sound Source original] Worksheet 1
- Type of Receiving Room: Living Room (V = 78 m³, T = 0.58 s)
- Level Adjustment: 0 dB +10 dB +20 dB +30 dB

The bottom part of the interface shows a table with the following data:

			2	81.4	1
			2	81.4	1
		Total		42.7	100
		T		L1	L2
		S		dB(A)	dB(A)
		highway A 7 (6 lanes)	0.5	78.6	31.8





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