

The book "Environmental Methods for Transport Noise Reduction" is a hardback book edited by Mats E. Nilsson, Jörgen Bengtsson and Ronny Klæboe. The book has 264 pages plus an index (16 pages) and a glossary of basic terms. It is published by the CRC Press, a member of the Taylor & Francis Group. Editors have united the work of 38 researchers in a way that the book forms an entity, which is simple to follow and easy to read. Since the book is also a public presentation of the research conducted by the Hosanna project, the project itself is briefly introduced before the first chapter.

The Hosanna project is about the research on the use of green abatement strategies to achieve acceptable sound barriers for improving existing conventional barriers, not only in terms of sound level reduction, but also in perceptual effects and cost-benefit analyses.

The first two chapters provide a brief description of the important parameters for the description and measurement of traffic noise and the impact of atmospheric conditions (e.g. temperature, wind speed and direction) on the results. Harmonoise and Imagine were projects where researchers tried to explain the discrepancies between calculation and measurement. The results of sound insulation achieved by innovative barriers made of natural materials and plants were shown. The efficiency of those barriers is evaluated numerically and the results of measurements are presented. The insertion loss is based on built barriers with real and measurable effects, not on models and projections. Since we are talking about values of sound insulation between 3 dBA and 8 dBA, these configurations are not negligible, especially in urban environments where space is confined.

The third, fourth and fifth chapter show the impact of vegetation on the acoustic properties of the barrier. The third chapter shows the impact of plant species, orientation and density of leaves and soil types on the propagation of sound, while the fourth chapter deals with basic interaction between sound waves and vegetation. Vibration measurements by LDV, impedance tube and *in situ* measurements show that the model can take into account only the absorption and scattering of sound as important phenomena of the propagation of sound through the vegetation. The research described in the previous sections enable the development of models that can be successfully used for the design of noise protection. Finally, chapter five presents successful rules to be followed when designing protective strips of greenery around roads.

Sound that is reflected from the ground interferes with the direct sound coming from the source. The type of interference is determined by the frequency of sound, position and distance of the source and receiver and acoustic properties of the soil located between the source and the receiver. Unlike in previous chapters, in chapters six through eight research is focused on "low barrier" that are influenced by the ground. Porous asphalt and embedded resonators are discussed, but the tests were carried out on specimens. The practical application is questionable due to installation issues and maintenance problems. Chapter eight shows how the selected greenery in the urban environment can contribute to reducing traffic noise. Studies have been made with computer models. Especially interesting is the study of undergrowth vegetation that is suitable for green roofs.

Noise mitigation decreases the audibility of noise on the receiving side, making noise less noticeable, thus interfering less with ordinary human activities. The combination of changes in the spectral and temporal contents of noise leads to soundscape approach which may result in the introduction of new, desired sounds that suppress unwanted. Finally, visual changes of the environment emerge as well which can result in environments acceptable to human, not necessarily quieter than the residual noise that surrounds it.

Noise control in the environment developed through the Hosanna project has the economic potential to replace existing methods of reducing noise. This method may not be better, but it is certainly cheaper to apply than the previous ones. Chapter ten presents the basic cost-benefit studies based on initial analyses and show potential for practical use. All of these efforts make sense if cities (i.e. local authorities) are ready to provide and invest funds in creating a good environment to attract employees and thus create quality living and working conditions.

While the first chapter includes some basics of acoustics, the book is not intended for people who do not have basic knowledge in the field of acoustics, but to those who already have experience with protection from the traffic noise and want to expand that knowledge.

Hrvoje Domitrovic