

# Introduction

## The needs for urban sound planning in the context of accelerating urbanization

*We are living in a time of rapidly increasing urbanization and urban development. To supply sufficient housing and infrastructure are key issues on the agenda of any bigger city in Europe and around the world. Having focus on what appears to be most urgent, there is a risk that we lose sight of other qualities also being relevant for a sustainable development of our cities.*

This risk is drastically increased due to the often-observed fragmentation of urban planning processes. The fragmentation also precludes the possibility to utilize potential synergy effects provided by a holistic planning approach. The sound environment in our cities is one of those qualities that typically appear on the agenda only very late and only when discovering that a project might not meet relevant regulations with respect to noise. In these cases regulations are experienced as hindering e.g. for an economically efficient urban development. This view reveals the lack of awareness about the tremendous importance

that an adequate sound environment has for the functioning of urban spaces.

We as acousticians might partly be responsible for this situation. Over many years we have been arguing that the sound environment strongly influences health and well-being. We have focused the discussion towards the negative impact of noise on society both with respect to health risks and their economic consequences. Although the problem of health risks and their economic consequences has been strongly confirmed during the recent years, the focus on these problems is rather diminishing the role of the sound environment in the context of urban planning instead of strengthening it.

The importance of the sound environment stems from the fact that the auditory perception of an urban setting is on par with its visual perception, a circumstance that also demands coherence between auditory and visual design. Residential areas, parks or meeting places are incomplete in their design when the sound environment is not coherent with the intentional use of the spaces. Non-adequate sound environments will reduce the functionality of such places or even destroy their usability completely.

To create the necessary awareness about the importance of the sound environment among all involved in the

urban planning process is a tremendous challenge. A natural solution would be that architects include the sound environment into their design processes as self-evidently as they do with the visual aspects. At the same time the process has to aim on the inclusion of urban sound planning in the planning process of cities at the earliest stage.

For this to happen, it is also necessary that we acousticians understand and learn the process of urban sound planning in all its complexity. The task of urban sound planning requires a comprehensive view on the future development of cities, including the development of their transport and industrial infrastructure. To cope with the complexity of this task, the consequent application of a transdisciplinary approach is needed: urban and traffic planning, architectural aspects, acoustics, noise control, and soundscaping, as well as political and administrative processes and economic aspects, must be considered from the very beginning of the planning process.

In order to integrate urban sound planning in the overall planning process, it is essential that tools are developed for controlling, communicating and designing the sound environment on a level beyond today's engineering solutions.

The booklet comprises a description of such tools as they have been de-

veloped in SONORUS. In Section 2 the control of the sound environment is related to e.g. decisions on traffic planning and urban form. Methods for predicting and auralising the sound environment, as essential tools for communicating the acoustic consequences of different planning scenarios, are presented in Section 3. Section 4 focuses on the use of the soundscape approach as a tool to design the perceived acoustic environment (i.e. the sonic environment) from an end-user perspective. Although tools are important, the most important advancement is the implementation of urban sound planning in real life cases. Section 5 presents four test sites where the idea of urban sound planning is converted to realistic scenarios for the cities of Antwerp, Brighton, Rome and Gothenburg. The discussions in the following text is adapted to the general view on planning by discussing urban sound planning on three different scales: on the

macroscale, related to urban planning; on the mesoscale, related to urban design; and on the microscale.

Although the process of urban sound planning has been initiated and first attempts have been made toward using such a process, it is essential to recognize that the work documented in this booklet is just the beginning of a development.

The on-going urbanization demands a different way of planning, where a holistic view is essential to create attractive cities. A positive sound environment is an essential part of the perception of cities. Only an attractive urban environment will be successful on an economic level, by being able to develop, attract and to keep competence, enterprises and financial resources, as well as creating means and capabilities for further development of future social, cultural, environmental and economic sustainability.