

HÖGSKOLAN VÄST

Space in the Space

Designing Sound Environments for the Shared Indoor Workspace

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Abstract

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The sound environment in shared indoor workspaces emerges through the interplay of physical layout, materials, technology, and social dynamics. These spaces are designed with specific purposes in mind, taking acoustics into account during construction. However, the true quality of the sound environment can only be assessed when these spaces are actively used. The perception of a shared indoor sound environment is not fixed or absolute but is influenced by individual perceptions, attitudes, and intentions. Prior research has primarily focused on reducing unwanted noise through physical installations and assessing their effects, with the emphasis of sound environment management being the implementation of broad, global solutions that aim to cater to the majority. However, there has been minimal initiative toward proactively improving these complex environments while acknowledging the subjective and context-dependent nature of sound environments. This thesis suggests that the sound environment within a workspace ought to be perceived as a socio-technical system, wherein the design of such environments is a complex and 'wicked' problem.

By adopting a design approach that introduces prototypes of an ambient sound environment system into the workspace, this study aims to explore whether various adaptations of the sound environment using this technical solution can improve perceived sound quality. The research endeavours to examine the practical use of sound as a design element within workplace settings. The study incorporates laboratory research, field tests in four different offices, and interviews with professionals in indoor environment design.

The thesis presents a design program for shared indoor workplace sound environments, emphasizing the creation of pleasant, unnoticeable sound spaces that offer shielding from office disturbances, known as Space in the Space. It employs a 4E cognitive framework and views both sound, technology, and humans as design materials, aiming to craft a personalized and meaningful sound environment that balances noise reduction with qualitative sound aspects, enabling users to tailor their auditory space and collaborate in the design process. This inquiry explores the complex relationship between auditory comfort, personal preferences, and functionality in shared workspaces. The strong concept of 'Sound Users', is introduced as a view that emphasizes the interactive relationship between users and sound environments. Individuals are not just passive receivers of sound; they are active participants, shaping, modifying, and personalizing their auditory environments. Presented with options, users often want to customize them and tend to prefer sounds that not only mask unwanted noise but also provide a sense of comfort and pleasure. Their aim goes beyond simple utility, highlighting a pursuit of meaningful sound environments through sounds that are both functional and pleasant, not just passive receivers of sound; they are active participants, shaping, modifying, and personalizing their auditory surroundings to suit their needs and activities.