Department of Architecture



Analysis, evaluation, and design of sound environments and reverberation in urban and architectural spaces

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Research Fields

Architectural acoustics, Sound environment

Keywords

Complex environment, Subjective evaluation

Research Outline

ROOM ACOUSTICS

By measuring the acoustic condition of various spaces and understanding the acoustic index values such as reverberation time and clarity, we evaluate whether the acoustic condition is appropriate for the room volume and room use. If not, we will consider how to improve them.

VR AND REVERBERATION

We measure the audiovisual impressions that people receive in VR-displayed architectural spaces and clarify the relationships and interactions between them. Based on the results, we study the appropriate combination of visual and auditory information that constitutes the VR space.

SOUND ENVIRONMENT DESIGN AND "SOUND SPACE" DESIGN

We look at the sound environment around us from various perspectives, including soundscape, universal design, and information accessibility, and evaluate and design them. We also propose "sound space" design, which focuses on creating spaces with sound, and put it into practice by creating custom-made sounds to suit the space and examining speaker placement.



Evaluation of measured reverberation time



Relation between expected reverberation time and volume