

Muqarnas form efficiency in diffusing Soundwaves within the Space

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Abstract

This study evaluates the sound performance of Muqarnas geometrical configuration and its effect on diffusing sound waves when exposed to sound source.

A description of Muqarnas design and its element`s composition in addition to a description of different types of sound diffusers geometry is presented. Some Given models are selected in a practical study to evaluate their performance as Sound diffusers.

This is done practically by choosing some forms of Muqarnas elements to create a Modular unit that are designed and analysed as proposed case studies (different types of geometrical design of Muqarnas models) to test the behavior of sound wave spreading and its random reflections from its surfaces.

The objective is to study the Muqarnas form efficiency in scattering sound waves to treat some sound problems and improve the hearing environment within a space by giving the appropriate forms configuration of Muqarnas to act as a sound wave diffuser.

This study concludes some useful findings depicting appropriate new forms of Muqarnas that act as efficient sound wave diffusers proposing their location in the closed space.

Keywords: Architectural acoustics, Muqarnas design, Sound diffusion, Diffusers, Muqarnas forms