



Architectural Acoustics Illustrated

By Michael Ermann

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Architectural Acoustics Illustrated By Michael Ermann

Unite the science of sound and the principles of design to enhance any space

Architectural Acoustics Illustrated translates the quantitative and qualitative content of acoustics into the graphic language of architecture. This highly-visual guide includes over 350 illustrations that outline the physics of sound and the best design practices for limiting or mitigating noise in buildings by using the latest in materials and techniques. Each chapter includes a summary checklist of design guidelines to help prevent mistakes and oversights, and the Instructor's website offers video animations demonstrating acoustical concepts. Designed as a "first look" at the interaction of sound and space, the book explains the principles of architectural acoustics and their practical applications, providing a comprehensive guide for designing with acoustics in mind.

Architectural acoustics is more than just concert halls – it may determine building placement, division of interior space, exterior construction, and even siting. When addressed early in the design process, the resulting space can be free of unwanted sound and promote good hearing; if left unaddressed, the problems with the space can lead to lawsuits and costly post-construction remediation. *Architectural Acoustics Illustrated* helps designers solve most acoustical problems in advance, by enabling readers to:

- Understand the physical science underlying the behavior of sound
- Consider the interactions of sound and space in the initial design approach
- Mitigate building sounds such as those produced by HVAC and plumbing with early design planning
- Design spaces for listening, and incorporate acoustics best practices into every plan

The highly visual format of the book helps readers grasp complex concepts quickly, and thorough discussion of each concept's real-world application ties the science directly into the design process. All design professionals need to have a fundamental understanding of acoustics, and *Architectural Acoustics Illustrated* is a comprehensive, practical guide in an easy-to-read format.

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Editorial Review

From the Back Cover

APPLY THE PRINCIPLES OF DESIGN TO THE SCIENCE OF SOUND

RECIPIENT OF THE VIRGINIA SOCIETY AMERICAN INSTITUTE OF ARCHITECTS 2014 PRIZE FOR SCHOLARSHIP AND DESIGN RESEARCH

Architectural Acoustics Illustrated translates the quantitative and qualitative content of acoustics into the graphic language of architecture. Important to performance space design—as well as surface material selection, room shaping and sizing, building placement and orientation, building skin and barrier composition, space planning, and architectural detailing—building acoustics begins at the earliest stages of schematic design and continues through construction administration. Better building acoustics makes better buildings and architectural acoustics needn't be a mystery.

This highly visual guide includes over 350 illustrations that outline the physics of sound and the established methods of mitigating unwanted noise in buildings. With authoritative guidance on the latest materials and techniques, topics include a summary checklist of acoustic design guidelines. The Companion website offers video animations that help readers to:

- **Understand the fundamental behaviors and movements of sound, including sound level, propagation, and frequency**
- **Select building surfaces with sound absorption (or reflection) in mind**
- **Design to make music fuller and speech clearer**
- **Reduce unwanted noise from both within the room and from outside the room**
- **Master the calculations that direct acoustic design solutions**

All design professionals should have a clear understanding of how sound and space interact, and *Architectural Acoustics Illustrated* is a comprehensive, practical guide designed for the visual learner.

About the Author

MICHAEL ERMANN is an associate professor at Virginia Tech's School of Architecture + Design, and a past undergraduate architecture program co-chairman. He teaches architectural acoustics, design studio, and environmental building systems. Prior to joining the VT faculty, Professor Ermann was an acoustical consultant at Artec in New York, NY and Siebein Associates in Gainesville, FL.

Users Review

From reader reviews:

Gussie Steller:

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Cynthia Tso:

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