

## Acoustics of Multi-Use Performing Arts Centers

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Multi-use halls are a North American phenomenon. This contrasts with Europe, where most cities have performance halls dedicated to specific genres: symphony, opera, chamber music, dance or popular music. In these halls the acoustics can be optimized for its intended program type.

Designing a new multi-use hall, or adapting an existing hall to this function, requires physical changes at the stage and audience chamber. These changes may include stage ceiling and sidewall panels, adjustable forestage ceiling sound reflectors, stage alterations using lift systems, stage pits, variable sound absorption such as moveable draperies and banners, special considerations for low-frequency reverberation control, acoustically transparent surfaces to couple nearby room volumes, and finally, electronic-acoustic system (electronic architecture) enhancements. All of these features necessary to make a successful multi-use hall are described in this practical volume.

The book is written by a practicing acoustic consultant with 37 years experience whose firm, Jaffe Holden Acoustics, has designed over 1200 halls of different types.

A profusely illustrated book, it is divided into five sections covering:

1. Building blocks (history of multi-use halls and acoustic criteria)
2. Creating the building (planning concepts for existing and new buildings and preliminary acoustic design)
3. Detailed architectural design (stage and orchestra pit, floor and balcony seating, wall and ceiling shaping, and seats and acoustic finishes)

4. Acoustic variability (adjustable acoustic finishes, electronic architecture systems and tuning the adjustable acoustic elements for best results) and
5. Eleven case studies describing halls and their unique acoustic challenges and programming requirements.

Written in a highly accessible style, with little mathematics to enhance its readability, this book will appeal to a wide audience. Specialists, such as acoustic consultants, theater planners and architects, will find much to learn about this complex building type. Generalists such as performing arts administrators, building design committees and music directors will benefit from the author's narrative style on technical matters.

This book, which is primarily a book on room acoustics, briefly discusses aspects of HVAC noise control, architectural sound isolation, building vibration and sound reinforcement systems, where these apply to the specific case study examples.

For the reader, this book is like having an assistant at the ready to guide one through the complex and interrelated design decisions that must be considered for a successful multi-use hall.

As much as I like and can recommend this book, it is not without faults. There is some repetition on topics in the main body and the case study examples. The index is fairly complete, although I did find several missing topics that were contained in the book. Typographical errors are few. The main problem is many of the figures, which are tied to the text, are poorly edited with missing graphic line leaders and incomplete figure narratives. This makes the reader's understanding of the design concepts less thorough and complete. Hopefully, a later printing will correct these problems.

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