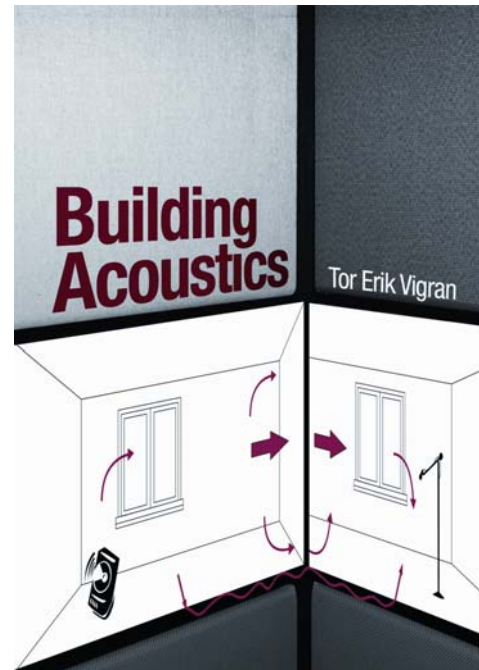


# Building Acoustics

Tor Erik Vigran

Building or architectural acoustics is taken in this book to cover all aspects of sound and vibration in buildings. The book covers room acoustics but the main emphasis is on sound insulation and sound absorption and the basic aspects of noise and vibration problems connected to service equipment and external sources. Measuring techniques connected to these fields are also brought in. It is designed for advanced level engineering studies and is also valuable as a guide for practitioners and acoustic consultants who need to fulfil the demands of building regulations.

It gives emphasis to the acoustical performance of buildings as derived from the performance of the elements comprising various structures. Consequently, the physical aspects of sound transmission and absorption need to be understood, and the main focus is on the design of elements and structures to provide high sound insulation and high absorbing power. Examples are taken from all types of buildings. The book aims at giving an understanding of the physical principles involved and three chapters are therefore devoted to vibration phenomena and sound waves in fluids and solid media. Subjective aspects connected to sound and sound perception is sufficiently covered by other books; however, the chapter on room acoustics includes descriptions of measures that quantify the "acoustic quality" of rooms for speech and music.



**June 2008:**  
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## Contents

1. Oscillatory Motion. Description and Analysis 2. Excitation and Response Relationships 3. Sound Waves in Fluids and Solid Media 4. Room Acoustics 5. Sound Absorbents 6. Sound Transmission. Properties of Simple Walls and Floors 7. Statistical Energy Analysis (SEA) 8. Sound Transmission Through Complex Systems 9. Sound Transmission in Buildings. Flanking Transmission

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