

Principles and Design

Form, Space, and Order

Deaf Architects & Blind Acousticians?

Architectural Acoustics

Architectural Press Library of Design and Detailing: Acoustic Design focuses on the techniques and principles employed in acoustic design, as well as room acoustics, hearing, speech, sound insulation, and noise control and design. The book first elaborates on the perception of sound form. Concerns cover sound absorption, room acoustics, sound insulation, physical data, units and measurement, sound at a point, and hearing and speech. The manuscript then takes a look at noise control and design. Topics include prediction and prescription, control at source, and building elements. The text is a valuable source of information for researchers interested in acoustic design.

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 measuring techniques connected

Explores the Science and Practice Of Acoustics for Arts Centers Employing the experiences of a world-renowned acoustician celebrated for the successful design of multi-use performing arts centers, Acoustics of Multi-Use Performing Arts Centers examines the complexities of factors that arise in the conce

Entering Architectural Practice is a practical and honest guide for architecture students, entering the world of architectural practice. There is often a disconnection between what you are taught in architecture school and the actual practice of architecture in the workplace. As a tutor, the author has first-hand experience of this disconnection and so helps students bridge this divide between academia and practice. Focused on providing industry insight, dispelling myths, and above all providing a combination of reality and hope to students of architecture, richly illustrated, providing a compelling visual story alongside the invaluable information it imparts. Serious but enjoyable, thoroughly researched but highly approachable, this book is simply essential reading for every individual about to embark on a career in practice.

Electroacoustics

A Compendium of Sound Absorbing Materials for Architecture and Design

Historical Acoustics

Architecture

Acoustics and Sound Insulation

This book is a collection of contributions to the Special Issue “Historical Acoustics: Relationships between People and Sound over Time”. The research presented here aims to explore the origins of acoustics and examine the relationships that have evolved over the centuries between people and auditory phenomena. Sounds have indeed accompanied human civilizations since the beginning of time, helping them to make sense of the world and to shape their cultures. Several key topics emerged, such as the acoustics of historical worship buildings, the acoustics of sites of archaeological interest, the acoustics of historical opera houses, and the topic of soundscapes as cultural intangible heritage. The book, as a whole, reflects the vibrant research activity around the “acoustics of the past”, which will hopefully be serve as a foundation for inspiring the future path of this discipline.

Electroacoustic devices such as microphones and loudspeakers are used everywhere from cars and mobile phones to homes, places of worship, and sports arenas. They are a key part of the modern communication society, helping to transmit information to our ears. A contemporary introduction to the subject, Electroacoustics explains the scientific and engineering principles behind the design of these sound transducers. It also examines the compromises that are necessary when designing transducers for use in the real world. Learn about Ultrasonic Transducers, Loudspeaker Enclosure Design, and More This accessible textbook book is based on the author's extensive experience teaching electroacoustics to advanced graduate and graduate students. He uses the concept of electrical circuit analogies to help readers quickly grasp the fundamentals of acoustical and mechanical systems. The book covers both traditional electrodynamic audio and ultrasonic transducers and includes up-to-date material on arrays, planar transducers, loudspeaker enclosure design, and more. To meet the needs of a broad range of readers, the book also includes background material on room acoustics, electrical circuits, and electrical filters. Electroacoustic theory is explained in an easy-to-read style without resorting to matrix theory. Throughout, a wealth of illustrations and exercises make the ideas more concrete. Get a Solid Foundation in Electroacoustic Engineering Principles The book emphasizes multidisciplinary engineering principles, preparing students for the broad range of applications they may encounter in their research as well as later in their careers. The modern treatment of transducers also makes this a valuable reference for transducer designers, acoustical consultants, hobbyists, and anyone involved in electroacoustic design.

It gives a complete overview of the practical applications of acoustical science to construction, from basic physics of sound to specific challenges and solutions.

A superb visual reference to the principles of architecture Now including interactive CD-ROM! For more than thirty years, the beautifully illustrated Architecture: Form, Space, and Order has been the classic introduction to the basic vocabulary of architectural design. The updated Third Edition features expanded sections on circulation, light, views, and site context, along with new considerations of environmental factors, building codes, and contemporary examples of form, space, and order. This classic visual reference helps both students and practicing architects understand the basic vocabulary of architectural design by examining how form and space are ordered in the built environment.? Using his trademark meticulous drawing, Professor Ching shows the relationship between fundamental elements of architecture through the ages and across cultural boundaries. By looking at these seminal ideas, Architecture: Form, Space, and Order encourages the reader to look critically at the built environment and promotes a more evocative understanding of architecture. In addition to updates to content and many of the illustrations, this new edition includes a companion CD-ROM that brings the book's architectural concepts to life through three-dimensional models and animations created by Professor Ching.

A guide to integrated thinking

Environmental and Architectural Acoustics

Handbook of Sound Studio Construction: Rooms for Recording and Listening

Relationships between People and Sound over Time

Acoustics of Multi-Use Performing Arts Centers

Avoid Costly Mistakes for Specialists and Non-Specialists Alike Bad acoustics in buildings is a nuisance that is not dealt with easily. The problem applies just as much to open-plan offices and restaurants and to production facilities and transportation stations as it does to performance halls, not to mention homes. It does not merely affect oral communication or enjoyment of music but has quite profound consequences on well-being. Gives Guidance on What to Expect from Design Teams and Contractors Building Acoustics is devoted to practical building and room acoustics, illustrated by numerous examples. It introduces the basics for the different specialists in a design team and for the client and sets out the issues for shared consideration. It guides them in the drawing up of sensible acoustic specifications. It is written for non-specialists and gives an outline of potential problems. It also shows what to consider before the construction stage. It empowers its readers to express their needs to a specialist consultant and to avoid the worst pitfalls. Covers interactions between acoustics and other disciplines Shows through numerous real-life examples the route to understanding and solving the problem Illustrates various points of views through real projects

Discover sustainable methods for designing crucial building systems for architects. This indispensable companion to Norbert Lechner's landmark volume Heating, Cooling, Lighting: Sustainable Design Methods for Architects, Third Edition completes the author's mission to cover all topics in the field of sustainable environmental control. It provides knowledge appropriate for the level of complexity needed at the schematic design stage and presents the most up-to-date information available in a concise, logical, accessible manner and arrangement. Although sustainability deals with many issues, those concerning energy and efficiency are the most critical, making an additional goal of this book one of providing architects with the skills and knowledge needed to create buildings that use electricity and water efficiently. Guidelines and rules-of-thumb are provided to help designers make their buildings use less energy, less water, and less of everything else to achieve their primary objectives. In addition, this book: Addresses ways to reduce electricity usage through more efficient lighting systems and appliances and by incorporating automatic switches and control systems that turn off systems not in use. Covers the design of well-planned effluent treatment systems that protect against potential health hazards while also becoming a valuable source of reclaimed water and fertilizer.r Provides coverage of fire protection and conveyance systems, including very efficient types of elevators and escalators and designs that encourage the use of stairs or ramps. Complete with case studies that illustrate how these systems are incorporated into large-project plans, Plumbing, Electricity, Acoustics is an indispensable resource for any architect involved in a sustainable design project.

A vibrant history of acoustical technology and aural culture in early-twentieth-century America. In this history of aural culture in early-twentieth-century America, Emily Thompson charts dramatic transformations in what people heard and how they listened. What they heard was a new kind of sound that was the product of modern technology. They listened as newly critical consumers of aural commodities. By examining the technologies that produced this sound, as well as the culture that enthusiastically consumed it, Thompson recovers a lost dimension of the Machine Age and deepens our understanding of the experience of change that characterized the era. Reverberation equations, sound meters, microphones, and acoustical tiles were deployed in places as varied as Boston's Symphony Hall, New York's office skyscrapers, and the soundstages of Hollywood. The control provided by these technologies, however, was applied in ways that denied the particularity of place, and the diverse spaces of modern America began to sound alike as a universal new sound predominated. Although this sound—clear, direct, efficient, and nonreverberant—had little to say about the physical spaces in which it was produced, it speaks volumes about the culture that created it. By listening to it, Thompson constructs a compelling new account of the experience of modernity in America.

Victoria Newhouse, noted author and architectural historian, addresses the aesthetics and acoustics in concert halls and opera houses of the past, present, and future in this stunning companion to the highly regarded Towards a New Museum. Site and Sound explores the daunting, perennial question: Does the music serve the space, or the other way around? Heavily illustrated throughout—with historic images, spectacular color photographs, detailed drawings—this volume is an informed and enjoyable presentation of a building type that is at the heart of cities small and large. Newhouse starts with a survey of venues from ancient Greek and Roman times and progresses to contemporary works around the world. She singles out Lincoln Center in particular for its long history and its transitions and remodelings over the years. Two major chapters cover the present: one focuses on recent work in the West, including the National Opera House of Norway in Oslo by Snøhetta (2008), the Casa da Música in Porto, Portugal, by Rem Koolhaas (2005), and many more; the second examines the boom in concert halls in China. A final chapter looks at projects that are currently planned and the future of an architecture for music.

Soundscape and the Built Environment

Designing with Light

The Art, Science, and Practice of Architectural Lighting Design

Sound Materials

Acoustic Concepts and Parameters for Architectural Design

This corrected version of the landmark 1981 textbook introduces the physical principles and theoretical basis of acoustics with deep mathematical rigor, concentrating on concepts and points of view that have proven useful in applications such as noise control, underwater sound, architectural acoustics, audio engineering, nondestructive testing, remote sensing, and medical ultrasonics. Since its publication, this text has been used as part of numerous acoustics-related courses across the world, and continues to be used widely today. During its writing, the book was fine-tuned according to insights gleaned from a broad range of classroom settings. Its careful design supports students in their pursuit of a firm foundation while allowing flexibility in course structure. The book can easily be used in single-term or full-year graduate courses and includes problems and answers. This rigorous and essential text is a must-have for any practicing or aspiring acoustician.

Architects need a working knowledge of acoustics in order to distribute sound and control unwanted noise within a building. Sound control is important not only in places like concert halls, but also in offices where privacy is essential.

Acoustics as a branch of physics involves heavy mathematics, and the practice of architectural acoustics involves knowledge of a broad range of subjects. For these reasons, many people believe that good acoustics are almost impossible to obtain and exist only in concert halls. With a solid understanding of the basics, however, rooms with good acoustics are not as hard to design and build as people might think. This work describes acoustics and the factors to be considered in constructing a room or building with good sound quality. Among the topics covered are intonation, tuning and temperaments of classical music, environmental noise, noise and vibration control, sound measurement, sound systems, acoustic models, and acoustical design for various settings and purposes, including acoustics for chamber music, synagogues, churches, and classrooms. The work looks at places like Clemens Theatre, Congress Hall, Binns Rehearsal Room, and Philharmonic Hall, to name just a few, as models of small and large buildings with excellent acoustics. Many diagrams and other illustrations enhance the text.

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 "firstlook" 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 through 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.

Principles and Practice

Entering Architectural Practice

Worship Space Acoustics

Rock and Pop Venues

Acoustic and Architectural Design

Architects are used to designing visually. In order to expand their basic design tools, this book explores the interactions between sound, space, hearing, and architecture. To this end, the author uses contemporary and historic buildings and projects, but also fictional, philosophical, and theoretical approaches – the idea is not only to define sound as a source, but also as an instrument of architectural space. By introducing a metatheory of "critical hearing", designers are able to acoustically test their projects and contribute to their design with auditive input, already at the design stage.

Acoustics and protection against noise do not perhaps number among the primary parameters that normally influence the design of a building. Nevertheless, at the very latest when the lecturer in the seminar room cannot be heard, when the noise level in an open-plan office reaches unbearable levels, or when a neighbor's noise deprives you of sleep, it becomes clear just how essential acoustic can be to everyday well-being. It is not just concert halls or the amphitheatres of antiquity that call for acoustic quality; rather, every building, indeed every room, has an acoustic dimension that changes according to the nature of its particular requirements. This practice-oriented volume provides expert planners and architects but also interested developers with practical knowledge on the subject of acoustics in high-rise architecture, beginning with standards on methods of planning and prognosis and moving on to the areas of acoustics of rooms and architecture and noise protection in urban planning. Typologically organized chapters comment on proper approaches to the subject with examples of different types of building such as residential and office buildings, schools, kindergartens, lecture halls, event spaces, and so on, because appropriate acoustic conditions make an essential contribution to the success of a project.

Principles, Planning, Examples

Principles and Practice NCARB Edition