

Ashrae Underfloor Air Distribution Design Guide

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Air-conditioning System Design Manual - Walter T. Grondzik 2007

The Air Conditioning Manual assists entry-level engineers in the design of air-conditioning systems. It is also usable - in conjunction with fundamental HVAC&R resource material - as a senior- or graduate-level text for a university course in HVAC system design. The manual was written to fill the void between theory and practice - to bridge the gap between real-world design practices and the theoretical calculations and analytical procedures or on the design of components. This second edition represents an update and revision of the manual. It now features the use of SI units throughout, updated references and the editing of many illustrations. * Helps engineers quickly come up with a design solution to a required air conditioning system. * Includes issues from comfort to cooling load calculations. * New sections on "Green HVAC" systems deal with hot topic of sustainable buildings.

Sustainaspeak - Elizabeth Lewis 2018-02-01

Architecture 2030; BUG; Biophilic Design; BIPV; Circular Economy; LEED; Passive Design; Solar Chimney; Systems Thinking; WELL; Xeriscaping. What does it all mean? The complex and evolving language used in the sustainable design community can be very challenging, particularly to those new to environmentally friendly and resource-efficient design strategies that are needed today. Definitions of over two hundred terms with further sources. Clearly cross-referenced with Sustainaspeak, Theoryspeak, and Archispeak terms. Illustrated throughout with sustainable award-winning buildings by e.g. Behnisch, Brooks + Scarpa, EHDD, KieranTimberlake, Lake|Flato, Leddy Mahtum Stacy, SmithGroup, Perkins+Will, ZGF, VMDO, and McDonough + Partners. Sustainaspeak: A Guide to Sustainable Design Terms provides a current guide to the sustainable design strategies, terms, and practices needed for the next generation of designers, architects, students, and community leaders to design a carbon-neutral world for future generations.

[Energy-Efficient HVAC Design](#) - Javad Khazaii 2014-10-17

This book provides readers with essential knowledge enabling the successful design of today's new energy efficient HVAC systems. The author introduces important concepts such as Knowledge Categorization, Performance Based Design Standards, and Quantification of Uncertainty in Energy Modeling for Buildings. Pivotal topics that all HVAC and architectural engineers must master in order to navigate the green building renaissance are given focused attention, including the role of renewables, air quality, automatic controls, and thermal comfort. Relevant ASHRAE standards, as well as sustainability scoring systems such as BREEAM, HQE, LEED and CASBEE are explained in depth. Armed with the material contained in this practical reference, students and practitioners alike will become more effective and prepared for engineering success.

Underfloor Air Distribution (UFAD) Design Guide - Fred S. Bauman 2003

This guide is ideal for HVAC design engineers, architects, building owners, facility managers, equipment manufacturers and installers, utility engineers, researchers, and other users of underfloor air distribution (UFAD) technology. UFAD systems are innovative methods for delivering space conditioning in offices and other commercial buildings. Improved Thermal Comfort, Improved Ventilation Efficiency and Indoor Air Quality, Reduced Energy Use and Reduced Life-Cycle Building Costs -- The guide explains these as some of the advantages that UFAD systems have over traditional overhead air distribution systems. This guide provides assistance in the design of UFAD systems that are energy efficient, intelligently operated, and

effective in their performance. It also describes important research results that support current thinking on UFAD design and includes an extensive annotated bibliography for those seeking additional detailed information.

[Sustainable Commercial Interiors](#) - Penny Bonda 2014-07-30

Discover new approaches to green design and sustainable building with this comprehensive guide There's a substantial amount of information designers and architects need to understand about sustainability and commercial projects, especially as expectations for professionals in the industry become clearer. Luckily, the second edition of Sustainable Commercial Interiors has been revamped to serve as a comprehensive guide for anyone looking to understand the latest in green and sustainable design. Fully revised throughout, this resource now includes frameworks based on the new LEED v4 rating system, and provides fifteen brand-new case studies that document green design and building strategies for all types of projects. You'll find information on materials, furnishings, finishes, product standards, and certifications, all designed to keep you in the know and prepare you for future ventures in sustainable design. The ideal professional companion for interior designers, commercial builders and developers, architects, and interior design students, this guide is an all-in-one introduction to the most essential topics in the industry, such as global environmental issues, water and energy usage, and the tools of the trade, to name just a few. The book is illustrated with full color images throughout. Fully revised and updated to include information on the new LEED v4 rating system Discusses the past, present, and future of sustainable design Considers global environmental issues, such as waste, land use, and bio-inspired design Covers water and energy usage and sustainable materials Discover the benefits of green building and adopt new approaches to sustainable design. Sustainable Commercial Interiors is your go-to resource for navigating new expectations for responsible interior design.

[Mechanical and Electrical Equipment for Buildings](#) - Walter T. Grondzik 2019-09-10

The definitive guide to the design of environmental control systems for buildings—now updated in its 13th Edition Mechanical and Electrical Equipment for Buildings is the most widely used text on the design of environmental control systems for buildings—helping students of architecture, architectural engineering, and construction understand what they need to know about building systems and controlling a building's environment. With over 2,200 drawings and photographs, this 13th Edition covers basic theory, preliminary building design guidelines, and detailed design procedure for buildings of all sizes. It also provides information on the latest technologies, emerging design trends, and updated codes. Presented in nine parts, Mechanical and Electrical Equipment for Buildings, Thirteenth Edition offers readers comprehensive coverage of: environmental resources; air quality; thermal, visual, and acoustic comfort; passive heating and cooling; water design and supply; daylighting and electric lighting; liquid and solid waste; and building noise control. This book also presents the latest information on fire protection, electrical systems; and elevator and escalator systems. This Thirteenth Edition features: Over 2,200 illustrations, with 200 new photographs and illustrations All-new coverage of high-performance building design Thoroughly revised references to codes and standards: ASHRAE, IES, USGBC (LEED), Living Building Challenge, WELL Building Standard, and more Updated offering of best-in-class ancillary materials for students and instructors available via the book's companion website Architect Registration Examination® (ARE®) style

study questions available in the instructor's manual and student guide Mechanical and Electrical Equipment for Buildings, has been the industry standard reference that comprehensively covers all aspects of building systems for over 80 years. This Thirteenth Edition has evolved to reflect the ever-growing complexities of building design, and has maintained its relevance by allowing for the conversation to include "why" as well as "how to."

LEED v4 Practices, Certification, and Accreditation Handbook - Sam Kubba 2015-11-30

LEED v4 Practices, Certification, and Accreditation Handbook, Second Edition, provides users with a practical user-friendly roadmap that presents the guidelines for selecting the LEED v4 rating system to better fit a particular project (e.g. LEED for Building Design and Construction, LEED for Operations and Maintenance, LEED for Interior Design and Construction, LEED for Building Design and Construction, or LEED for Neighborhood Development). In addition, this comprehensive handbook carefully explains the modifications in the credentialing process, including the new 3-Tier system requiring applicants to first take the LEEDTM Green Associate exam, followed by the LEEDTM Professional Accreditation exam. Practical strategies and guidelines for applying LEED v4 project certification Annotated tables, checklists, charts, and references to "quantum leap," LEED v4 Includes case studies with special focus is put on key areas where most errors occur Demystifies LEED v4 requirements for project as well as personal/professional LEED Certification Appendixes including sample exam questions, acronyms and abbreviations and a glossary

Fundamentals of HVAC Systems - Robert McDowall 2007

Everything that new HVAC&R engineers will be expected to learn, from the leading industry body - ASHRAE.

A Study of the Thermal Comfort and Ventilation Performance of an Underfloor Air Distribution System - Jae D. Chang 2007

ASHRAE Handbook Fundamentals 2017 - 2017

Building Performance Simulation for Design and Operation - Jan L.M. Hensen 2012-09-10

Effective building performance simulation can reduce the environmental impact of the built environment, improve indoor quality and productivity, and facilitate future innovation and technological progress in construction. It draws on many disciplines, including physics, mathematics, material science, biophysics and human behavioural, environmental and computational sciences. The discipline itself is continuously evolving and maturing, and improvements in model robustness and fidelity are constantly being made. This has sparked a new agenda focusing on the effectiveness of simulation in building life-cycle processes. Building Performance Simulation for Design and Operation begins with an introduction to the concepts of performance indicators and targets, followed by a discussion on the role of building simulation in performance-based building design and operation. This sets the ground for in-depth discussion of performance prediction for energy demand, indoor environmental quality (including thermal, visual, indoor air quality and moisture phenomena), HVAC and renewable system performance, urban level modelling, building operational optimization and automation. Produced in cooperation with the International Building Performance Simulation Association (IBPSA), and featuring contributions from fourteen internationally recognised experts in this field, this book provides a unique and comprehensive overview of building performance simulation for the complete building life-cycle from conception to demolition. It is primarily intended for advanced students in building services engineering, and in architectural, environmental or mechanical engineering; and will be useful for building and systems designers and operators.

Underfloor Vs. Overhead - Allan Wesley Daly 2006

Performance Assessment of Commercial Underfloor Air Distribution Buildings - Yoon Soo Lee 2009

Manuale del termotecnico. Fondamenti. Riscaldamento. Condizionamento. Refrigerazione - Nicola Rossi 2003

Ice-Houses - Alireza Dehghani-Sanij 2021-05-06

Ice-Houses: Energy, Architecture and Sustainability presents new and novel technologies and approaches surrounding daily and seasonal ice storage, along with discussions on passive cooling and natural technologies using different methods, including heat pumps. The book covers different aspects of ice-houses and cold energy production, storage and utilization. By addressing various issues connected to the technology and structure of traditional ice-houses and natural and artificial ice making, this refences looks at new technological approaches for the reduction of electrical energy consumption in buildings. Users will find this to be a comprehensive overview of ice house storage that includes worked examples and global case studies. It is an essential resource for researchers and engineers looking to advance their understanding of this method of thermal storage. Includes worked examples which calculate and determine the amounts of different parameters to help better understand the problem-solving process Provides a comprehensive literature review on the history and architecture of ice-houses, along with different ice production and storage methods Contains recent developments related to cold energy production and storage through ice making to reduce electricity demand

Architectural Research Addressing Societal Challenges - Manuel Jorge Rodrigues Couceiro da Costa 2019-08-08

The escalating interdependency of nations drives global geopolitics to shift ever more quickly. Societies seem unable to control any change that affects their cities, whether positively or negatively. Challenges are global, but solutions need to be implemented locally. How can architectural research contribute to the future of our changing society? How has it contributed in the past? The theme of the 10th EAAE/ARCC International Conference, "Architectural Research Addressing Societal Challenges", was set to address these questions. This book, Architectural Research Addressing Societal Challenges, includes reviewed papers presented in June 2016, at the 10th EAAE/ARCC International Conference, which was held at the facilities of the Faculty of Architecture of the University of Lisbon. The papers have been further divided into the following five sub-themes: a Changing Society; In Transit - Global Migration; Renaturalization of the City; Emerging Fields of Architectural Practice; and Research on Architectural Education. The EAAE/ARCC International Conference, held under the aegis of the EAAE and of the ARCC, is a conference organized every other year, in collaboration with one of the member schools/ universities of those associations, alternatively in North America or in Europe.

Consulting-specifying Engineer - 2005

Analysis and Design of Heating, Ventilating, and Air-Conditioning Systems, Second Edition - Herbert W. Stanford III 2019-04-01

Analysis and Design of Heating, Ventilating, and Air-Conditioning Systems, Second Edition, provides a thorough and modern overview of HVAC for commercial and industrial buildings, emphasizing energy efficiency. This text combines coverage of heating and air conditioning systems design with detailed information on the latest controls technologies. It also addresses the art of HVAC design along with carefully explained scientific and technical content, reflecting the extensive experience of the authors. Modern HVAC topics are addressed, including sustainability, IAQ, water treatment and risk management, vibration and noise mitigation, and maintainability from a practical point of view.

Natural Ventilation for Infection Control in Health-care Settings - Y. Chartier 2009

This guideline defines ventilation and then natural ventilation. It explores the design requirements for natural ventilation in the context of infection control, describing the basic principles of design, construction, operation and maintenance for an effective natural ventilation system to control infection in health-care settings.

Comfort and Energy Analysis of Task-ambient Conditioning System - Dong Eun Kim 2008

UFAD Guide - Ashrae 2013

"Guide provides assistance in the design of UFAD systems that are energy efficient, intelligently operated, and effective in their performance. It also describes important research results that support current thinking on UFAD design"--

Building Systems for Interior Designers - Corky Binggeli 2016-01-19

The ultimate interior designer's guide to building systems and safety Building Systems for Interior Designers, Third Edition is the single-source technical reference that every designer needs, and an ideal solution for NCIDQ exam preparation. Now in its third edition, this invaluable guide has been updated to better address the special concerns of the interior designer within the context of the entire design team. New coverage includes the latest information on sustainable design and energy conservation, expanded coverage of security and building control systems, and a new and expanded art program with over 250 new illustrations. Covering systems from HVAC to water to waste to lighting, this book explains technical building systems and engineering issues in a clear and accessible way to help interior designers communicate more effectively with architects, engineers, and contractors. Professional interior design is about much more than aesthetics and decorating, and technical knowledge is critical. Before the space is planned, the designer must consider the mechanical and electrical equipment, structural system, and building components, and how they impact the space. This book shows you how to evaluate these complex factors, and how each affects your work throughout the building. Consider how site conditions and structural systems affect interior design Design functionally for human health and safety Factor water, electrical, and thermal systems into your design plans Examine the ways in which lighting and acoustics affect the space The comfort, safety, and ultimate success of a project depend upon your knowledge of building system and your coordination with architects and engineers. Building Systems for Interior Designers, Third Edition provides the comprehensive yet focused information you need to excel at what you do best.

Advanced Integrated Systems Technology Development - Fred Bauman 2016

Planner's Guide to Facilities Layout and Design for the Defense Communications System Physical Plant - 1985

Advances in Web-based Learning - ICWL 2011 - Howard Leung 2012-02-10

This book constitutes the refereed proceedings of the 10th International Conference on Web-Based Learning, ICWL 2011, held in Hong Kong, China, in December 2011. The 27 revised full papers presented together with 9 short papers were carefully reviewed and selected from about 100 submissions. The papers report on research results or novel applications in web-based learning and address issues such as technology enhanced learning, personalized and adaptive learning, computer support for intelligent tutoring, intelligent tools for visual learning, Web-based learning for oriental languages learning, game-based learning, personal learning environments, computer supported collaborative learning, Web 2.0 and social learning environments, intelligent learner and group modeling, human factors and affective computing for learning, e-learning platforms and tools, design, model and framework of e-learning systems, deployment, organization and management of learning objects, e-learning metadata and standards, semantic Web and ontologies for e-learning, mobile, situated and blended learning, pedagogical issues, as well as practice and experience sharing.

Room Air Stratification Model for Underfloor Air Distribution System - Qiang Zhang 2001

A Handbook on Low-Energy Buildings and District-Energy Systems - L.D. Danny Harvey 2012-08-21
Winner of Choice Magazine - Outstanding Academic Titles for 2007. 'I predict that it will become the "bible" of the field ... In my career, it's been difficult to spot a future classic even before it was published, but this is such a classic'. Mark D. Levine, Director, Energy Division, Lawrence Berkeley National Lab, USA.
'Explains in an easily understandable but not trivial way the factors that affect energy consumption, from building design to HVAC systems and systems serving communities'. Michael Holmes, Consultant to Ove Arup, UK. 'Technology compendia such as this book will become.

Fundamentals of Hvac Systems - 2006

This book provides a thorough introduction to how Heating, Ventilating, and Air-Conditioning (HVAC) systems control temperature, air quality, and air circulation in a conditioned space.

Heating, Ventilating, and Air Conditioning - Faye C. McQuiston 2004-08-06

HEATING, VENTILATING, AND AIR CONDITIONING Completely revised with the latest HVAC design practices! Based on the most recent standards from ASHRAE, this Sixth Edition provides complete and up-to-date coverage of all aspects of heating, ventilation, and air conditioning. You'll find the latest load calculation procedures, indoor air quality procedures, and issues related to ozone depletion. Throughout the text, numerous worked examples clearly show you how to apply the concepts in realistic scenarios. In addition, several computer programs (several new to this edition) help you understand key concepts and allow you to simulate various scenarios, such as psychometrics and air quality, load calculations, piping system design, duct system design, and cooling coil simulation. Additionally, the load calculation program has been revised and updated. These computer programs are available at the book's website: www.wiley.com/college/mcquiston Key Features of the Sixth Edition Additional new worked examples in the text and on the accompanying software. Chapters 6-9 have been extensively revised for clarity and ease of use. Chapter 8, The Cooling Load, now includes two approaches: the heat balance method, as recommended by ASHRAE, and the simpler RTS method. Both approaches include computer applications to aid in calculations. Provides complete, authoritative treatment of all aspects of HVAC, based on current ASHRAE standards. Numerous worked examples and homework problems provide realistic scenarios to apply concepts.

Simulation of Radiant Cooling Performance with Evaporative Cooling Sources - Timothy Charles Moore 2008

Heating and Cooling of Buildings - T. Agami Reddy 2016-09-01

Heating and Cooling of Buildings: Principles and Practice of Energy Efficient Design, Third Edition is structured to provide a rigorous and comprehensive technical foundation and coverage to all the various elements inherent in the design of energy efficient and green buildings. Along with numerous new and revised examples, design case studies, and homework problems, the third edition includes the HCB software along with its extensive website material, which contains a wealth of data to support design analysis and planning. Based around current codes and standards, the Third Edition explores the latest technologies that are central to design and operation of today's buildings. It serves as an up-to-date technical resource for future designers, practitioners, and researchers wishing to acquire a firm scientific foundation for improving the design and performance of buildings and the comfort of their occupants. For engineering and architecture students in undergraduate/graduate classes, this comprehensive textbook:

Protecting Building Occupants and Operations from Biological and Chemical Airborne Threats - National Research Council 2007-08-10

Protecting buildings and their occupants from biological and chemical attacks to ensure continuous building operations is seen as an urgent need in the Department of Defense, given recent technological advances and the changing threats. Toward this end, the Department of Defense established the Immune Building Program to develop protective systems to deter biological and chemical attacks on military facilities and minimize the impacts of attacks should they occur. At the request of the Defense Threat Reduction Agency, the National Research Council convened a committee to provide guiding principles for protecting buildings from airborne biological or chemical threat agents and outline the variables and options to consider in designing building protection systems. This report addresses such components of building protection as building design and planning strategies; heating, ventilating, and air-conditioning systems; filtration; threat detection and identification technologies; and operational responses. It recommends that building protection systems be designed to accommodate changing building conditions, new technologies, and emerging threats. Although the report's focus is on protection of military facilities, the guiding principles it offers are applicable to protection of public facilities as well.

ASHRAE Design Guide for Tall, Supertall, and Megatall Building Systems - Peter Simmonds 2016-03-07

The Guide to Meeting the Challenges of Tall Buildings Tall buildings present unique and formidable challenges to architects and engineers because of their size, location in major urban areas, and the multiple, complex occupancies they often contain. ASHRAE Design Guide for Tall, Supertall, and Megatall Building Systems is a unique reference for owners; architects; and mechanical, structural, and electrical

engineers as well as other specialized consultants involved in designing systems for these buildings. Expanded since ASHRAE's previous guide on the topic in 2004, this new design guide covers not only tall buildings (taller than 300 ft [91m]) but now also addresses supertall (taller than 984 ft [300 m]) and megatall (taller than 1968 ft [600 m]) buildings, with a broadened scope and updated content that reflects current standards and industry practices. This guide not only focuses on the efforts of designers of the HVAC systems but also addresses the importance of the design team and their collective efforts and concerns that are the critical elements in determining the ultimate solutions to the project needs of a tall building. This guide addresses design issues for tall commercial buildings, which are very often mixed use, with low-level retail, office floors, residential floors, and hotel floors. Major sections cover the following subjects: Architectural design; Façade systems; Climate data; Indoor air quality (IAQ) and thermal comfort; HVAC systems; Electrical system interfaces; Intelligent buildings and controls; Water distribution; Plumbing systems; Energy modeling and authentication; Vertical transportation; Life safety; Needs of residential occupancies. Also included are appendices with examples of stack effect and wind pressure for four representative climates, energy analysis examples, and HVAC design criteria and a systems description for a multiple-tenant office building.

Air Quality - Gustavo Lopez 2012-07-26

This book contains 15 chapters reporting air pollution of interest to experts in academia and industrial plants dealing with the environmental issues. These chapters emphasize the problems of air pollution involving the human sector as an essential part in the control of air pollutants. The book contains an analysis of various geographic regions and evaluation of different activities related to these areas. Descriptive analyzes present the generation of air pollution and its effect on society and materials evaluations. The major sources of emission of pollutants and the damage that they originate in the towns and industrial plants are reported. This volume provides methods and tools for assessment according to each location. Other important aspects are the activities of governmental authorities, the academic and sectors for solving the environment problem.

Architectural Research Addressing Societal Challenges Volume 2 - Manuel Jorge Rodrigues Couceiro da Costa 2017-09-19

The EAAE/ARCC International Conference, held under the aegis of the EAAE (European Association for Architectural Education) and of the ARCC (Architectural Research Centers Consortium), is a conference organized every other year, in collaboration with one of the member schools / universities of those associations, alternatively in North America or in Europe. The EAAE/ARCC Conferences began at the North Carolina State University College of Design, Raleigh with a conference on Research in Design Education (1998); followed by conferences in Paris (2000), Montreal (2002), Dublin (2004), Philadelphia (2006), Copenhagen (2008), Washington (2010), Milan (2012) and Honolulu (2014). The conference discussions focus on research experiences in the field of architecture and architectural education, providing a critical forum for the dissemination and engagement of current ideas from around the world.

Guide to the LEED AP Building Design and Construction (BD&C) Exam - Michelle Cottrell 2010-12-07

Ideal for architects, engineers, or contractors seeking the LEED Building Design & Construction (BD&C)

credential, the book is a clearly organized study guide that includes sample quizzes throughout at the end of each section. Authored by an expert who teaches seminars on LEED BD&C to professionals, this LEED exam prep book stands out from its competitors in its engaging and stimulating approach. Material includes include drawings, charts, and diagrams to help the reader visually understand the concepts.

ASHRAE Handbook - 2004

Handbook of Air Conditioning and Refrigeration - Shan K. Wang 2001

* A broad range of disciplines--energy conservation and air quality issues, construction and design, and the manufacture of temperature-sensitive products and materials--is covered in this comprehensive handbook * Provide essential, up-to-date HVAC data, codes, standards, and guidelines, all conveniently located in one volume * A definitive reference source on the design, selection and operation of A/C and refrigeration systems

Proceedings of the 8th International Symposium on Heating, Ventilation and Air Conditioning - Angui Li 2013-09-30

Proceedings of the 8th International Symposium on Heating, Ventilation and Air Conditioning is based on the 8th International Symposium of the same name (ISHVAC2013), which took place in Xi'an on October 19-21, 2013. The conference series was initiated at Tsinghua University in 1991 and has since become the premier international HVAC conference initiated in China, playing a significant part in the development of HVAC and indoor environmental research and industry around the world. This international conference provided an exclusive opportunity for policy-makers, designers, researchers, engineers and managers to share their experience. Considering the recent attention on building energy consumption and indoor environments, ISHVAC2013 provided a global platform for discussing recent research on and developments in different aspects of HVAC systems and components, with a focus on building energy consumption, energy efficiency and indoor environments. These categories span a broad range of topics, and the proceedings provide readers with a good general overview of recent advances in different aspects of HVAC systems and related research. As such, they offer a unique resource for further research and a valuable source of information for those interested in the subject. The proceedings are intended for researchers, engineers and graduate students in the fields of Heating, Ventilation and Air Conditioning (HVAC), indoor environments, energy systems, and building information and management. Angui Li works at Xi'an University of Architecture and Technology, Yingxin Zhu works at Tsinghua University and Yuguo Li works at The University of Hong Kong.

Managing Indoor Air Quality, Fifth Edition - H.E. Burroughs 2020-12-17

Finding solutions to indoor air quality problems is often a complex, multifaceted endeavor. This practical desk reference serve as a guide and information resource - both on treating existing indoor air problems effectively - and on preventing costly IAQ problems from occurring in the first place. A single discipline approach unfortunately tends to narrow both the control and the treatments options. This book cuts across professions to offer those concerned with the total facility a broader, more comprehensive approach to managing indoor air quality and mitigating indoor air quality problems. The fifth edition is extensively updated and edited in response to the rapid pace of changes and advances in the IAQ industry.