

Underfloor Air Distribution Design Guide

* 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

Practical solutions for sustainability In this timely guide, one of the world's leaders in advanced building technology implementation shows architects and engineers proven and practical methods for implementing these technologies in sustainably-designed buildings. Because of the very limited time architects are given from being awarded a project to concept design, this book offers clear and workable solutions for implementing solar energy, radiant heating and cooling floors, displacement ventilation, net zero, and more. It provides helpful tips and suggestions for architects and engineers to work together on implementing these technologies, along with many innovative possibilities for developing a truly integrated design. This book also explores and explains the many benefits of advanced technologies, including reduced greenhouse gas emissions, lower operating costs, noise reduction, improved indoor air quality, and more. In addition, *Advanced Building Technologies for Sustainability*: Offers detailed coverage of solar energy systems, thermal energy storage, geothermal systems, high-performance envelopes, chilled beams, under-floor air distribution, displacement induction units, and much more Provides case studies of projects using advanced technologies and demonstrates their implementation in a variety of contexts and building types Covers the implementation of advanced technologies in office towers, large residential buildings, hospitals, schools, dormitories, theaters, colleges, and more Complete with a clear and insightful explanation of the requirements for and benefits of acquiring the U.S. Green Building Council's LEED certification, *Advanced Building Technologies for Sustainability* is an important resource for architects, engineers, developers, and contractors involved in sustainable projects using advanced technologies.

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.

Proven and tested guidelines for designing ideal labs for scientific investigations Now in its Fourth Edition, *Guidelines for Laboratory Design* continues to enable readers to design labs that make it possible to conduct scientific investigations in a safe and healthy environment. The book brings together all the professionals who are critical to a successful lab design, discussing the roles of architects, engineers, health and safety professionals, and laboratory researchers. It provides the design team with the information needed to ask the right questions and then determine the best design, while complying with current regulations and best practices. *Guidelines for Laboratory Design* features concise, straightforward advice organized in an easy-to-use format that facilitates the design of safe, efficient laboratories. Divided into five sections, the book records some of the most important discoveries and achievements in: Part IA, Common Elements of Laboratory Design, sets forth technical specifications that apply to most laboratory buildings and modules Part IB, Common Elements of Renovations, offers general design principles for the renovation and modernization of existing labs Part II, Design Guidelines for a Number of Commonly Used Laboratories, explains specifications, best practices, and guidelines for nineteen types of laboratories, with three new chapters covering nanotechnology, engineering, and autopsy labs Part III, Laboratory Support Services, addresses design issues for imaging facilities, support shops, hazardous waste facilities, and laboratory storerooms Part IV, HVAC Systems, explains how to heat, cool, and ventilate labs with an eye towards energy conservation Part V, Administrative Procedures, deals with bidding procedures, final acceptance inspections, and sustainability The final part of the book features five appendices filled with commonly needed data and reference materials. This Fourth Edition is indispensable for all laboratory design teams, whether constructing a new laboratory or renovating an old facility to meet new objectives.

Underfloor Vs. Overhead

A Handbook on Low-Energy Buildings and District-Energy Systems

Case Studies and Analyses

Fundamentals of HVAC Systems

Performance Assessment of Commercial Underfloor Air Distribution Buildings

Volume 3: Building Simulation and Information Management

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 ever 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 will become

Tall commercial office buildings present a series of design problems that differ from those that are found in other projects in the built environment. HVAC Design Guide for Tall Commercial Buildings provides guidance in both understanding the HVAC design problems of tall commercial office buildings and in detailing their alternative solutions.

The EAAE/ARCC International Conference, held under the aegis of the EAAE (European Association for Architectural Education) and of the ARCC (Architectural Research Centers Conferences) 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), Paris (2002), Dublin (2004), Philadelphia (2006), Copenhagen (2008), Washington (2010), Milan (2012) and Honolulu (2014). The conference discussions focus on research experiences in architecture and architectural education, providing a critical forum for the dissemination and engagement of current ideas from around the world.

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 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 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 color 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 on cooling load calculations. * New sections on "Green HVAC" systems deal with hot topic of sustainable buildings.

Guidelines for Laboratory Design

Building Systems for Interior Designers

A Practical Guide for Operation and Maintenance of Underfloor Air Distribution Systems

Teaming for Efficiency: Commercial buildings : technologies, design, performance analysis, and building industry trends

Sustainable Commercial Interiors

Underfloor Air Distribution (UFAD) Design Guide

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.

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.

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."

Because the edge you need begins with the space you occupy . . . The Office Interior Design Guide enables facilities professionals with little or no design experience to become knowledgeable, active partners with consultants and designers in developing efficient, flexible office spaces that work. It is also intended to serve as a general overview of the office environment for the design or engineering professional. This practical book covers the entire planning and management process for both conventional and alternative officing, with important information on The Americans with Disabilities Act of 1990, indoor air quality, fire safety, and more. From building support systems to key elements of interior design, this comprehensive guide shows you how to: * Create a strategic facilities plan * Put together an effective in-house team * Define project needs and objectives * Build solid relationships with management, technical, and creative consultants * Choose the right design firm * Select appropriate facilities * Develop an on-target schedule and budget * Achieve adaptable, cost-effective design solutions. Complete with sample letters for requesting proposals and qualifications, plus a detailed programming questionnaire to help you specify project requirements, The Office Interior Design Guide enables you to create hardworking environments equipped to handle today's business challenges and tomorrow's organizational needs.

Air-conditioning System Design Manual

Consulting-specifying Engineer

Analysis and Design of Heating, Ventilating, and Air-Conditioning Systems, Second Edition

A Guide to Preparing for the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Professional Accreditation Exam

Final Project Report

Health, Safety, and Environmental Considerations

As the use of underfloor air distribution (UFAD) systems increases, so does the importance of effective operation and maintenance (O&M) of these systems after installation. As UFAD technology is applied, designers, technicians, facility managers, and building owners or their representatives all need to know how to ensure that these often mission-critical systems operate as intended. This guide supplements UFAD Guide: Design, Construction and Operation of Underfloor Air Distribution Systems, providing specific, practical advice beyond design, construction, and startup into successful ongoing operation and maintenance. Installers, technicians, and building owners will find this booklet a valuable resource for getting the most out of their UFAD systems and maintaining those systems' useful lives.

Get the updated guide to active and passive control systems for buildings. To capitalize on today's rapidly evolving, specialized technologies, architects, designers, builders, and contractors work together to plan the mechanical and electrical equipment that controls the indoor environment of a building. The Building Environment: Active and Passive Control Systems, Third Edition helps you take advantage of design innovations and construction strategies that maximize the comfort, safety, and energy efficiency of buildings. From active HVAC systems to passive methods, lighting to on-site power generation, this updated edition explains how to strategically plan for and incorporate effective, efficient systems in today's buildings. It covers the underlying thermal theories and thermodynamic principles and focuses on design that enhances the building environment and minimizes the impact on the world's environment. The Building Environment goes beyond the ABCs of HVAC and covers: On-site power generation, including wind turbines, solar photovoltaic cells, fuel cells, and more. Plumbing systems, fire protection, signal systems, conveying systems, and architectural acoustics. Procedures and/or formulas for performing heat loss, heat gain, and energy use calculations, determining the rate of heat flow, calculating solar energy utilization, doing load calculations, and more. Details on the latest building codes and standards references. New information on the sustainable design of building systems and energy efficiency, including new technologies. The latest thinking and data on a building's impact on the environment, indoor air quality, and "sick building syndrome." Design economics, including the payback period, life-cycle cost, comparative value analysis, and building commissioning. A practical on-the-job tool for architects, designers, builders, engineers, contractors, and other specialists, this Third Edition is also a great reference for architecture students who will lead tomorrow's design teams.

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.

"The members of 7group and Bill Reed are examples writ large of the kind of leadership that is taking this idea of green building and forming it into reality, by

helping change minds, building practice, and design process." —from the Foreword by S. Rick Fedrizzi President, CEO, and Founding Chair, U.S. Green Building Council

A whole-building approach to sustainability The integrative design process offers a new path to making better green building decisions and addressing complex issues that threaten living systems. In *The Integrative Design Guide to Green Building: Redefining the Practice of Sustainability*, 7group's principals and integrative design pioneer Bill Reed introduce design and construction professionals to the concepts of whole building design and whole systems. With integrative thinking that reframes what sustainability means, they provide a how-to guide for architects, designers, engineers, developers, builders, and other professionals on incorporating integrative design into every phase of a project. This practical manual: Explains the philosophy and underpinnings of effective integrative design, addressing systems thinking and building and community design from a whole-living system perspective Details how to implement integrative design from the discovery phase to occupancy, supported by process outlines, itemized tasks, practice examples, case studies, and real-world stories illustrating the nature of this work Explores the deeper understanding of integration that is required to transform architectural practice and our role on the planet This book, both practical and thoughtful, will help you deliver your vision of a sustainable environment. 7group, based in Kutztown, Pennsylvania, includes principals John Boecker, Scot Horst, Tom Keiter, Andrew Lau, Marcus Sheffer, and Brian Toevs, who bring a unique integration of expertise in design, engineering, energy and daylight modeling, materials assessments, commissioning, education, and communications to their work. Internationally recognized thought leaders in the green building movement, they have led countless teams through the practical implementation of integrative design on building projects of all types around the world. 7group also has been directly and deeply involved with the development of the LEED® Green Building Rating System, including experience on more than 100 LEED projects. Scot Horst currently serves as chair of the U.S. Green Building Council's LEED Steering Committee.

Active and Passive Control Systems

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

Guide to the LEED AP Interior Design and Construction (ID+C) Exam

Air Quality

Proceedings of the 8th International Symposium on Heating, Ventilation and Air Conditioning

A Guide to Sustainable Design Terms

A unique and revolutionary text which explains the principles behind the LT Method (2.1), a manual design tool developed in Cambridge by the BRE. The LT Method is a unique way of estimating the combined energy usage of lighting, heating, cooling and ventilation systems, to enable the designer to make comparisons between options at an early, strategic stage. In addition, *Energy and Environment in Architecture* the book deals with other environmental issues such as noise, thermal comfort and natural ventilation design. A variety of case studies provide a critique of real buildings and highlight good practice. These topics include thermal comfort, noise and natural ventilation.

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.

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.

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.

UFAD O&M Guide

Fundamentals of Hvac Systems

The Integrative Design Guide to Green Building

An Introduction for Facility and Design Professionals

Proceedings of the EAAE ARCC 10th International Conference (EAAE ARCC 2016), 15-18 June 2016, Lisbon, Portugal

A Technical Design Guide

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.

"Building Systems for Interior Designers remains the one go-to resource that addresses the special concerns of the interior designer within the broader context of the rest of the building design team"--

"The members of 7group and Bill Reed are examples writ large of the kind of leadership that is taking this idea of green building and forming it into reality, by helping change minds, building practice, and design process." —from the Foreword by S. Rick Fedrizzi President, CEO, and Founding Chair, U.S. Green Building Council A whole-building approach to sustainability The integrative design process offers a new path to making better green building decisions and addressing complex issues that threaten living systems. In The Integrative Design Guide to Green Building: Redefining the Practice of Sustainability, 7group's principals and integrative design pioneer Bill Reed introduced design and construction professionals to the concepts of whole building design and whole systems. With integrative thinking that reframes what sustainability means, they provide a how-to guide for architects, designers, engineers, developers, builders, and other professionals on incorporating integrative design into every phase of a project. This practical manual: Explains the philosophy and underpinnings of effective integrative design, addressing systems thinking and building and community design from a whole-living system perspective Details how to implement integrative design from the discovery phase to occupancy, supported by process outlines, itemized tasks, practice examples, case studies, and real-world stories illustrating the nature of this work Explores the deeper understanding of integration that is required to transform architectural practice and our role on the planet This book, both practical and thoughtful, will help you deliver your vision of a sustainable environment. 7group, based in Kutztown, Pennsylvania, includes principals John Boecker, Scot Horst, Tom Keiter, Andrew Lau, Marcus Sheffer, and Brian Toevs, who bring a unique integration of expertise in design, engineering, energy and daylight modeling, materials assessments, commissioning, education, and communications to their work. Internationally recognized thought leaders in the green building movement, they have led countless teams through the practical implementation of integrative design on building projects of all types around the world. 7group also has been directly and deeply involved with the development of the LEED® Green Building Rating System, including experience on more than 100 LEED projects. Scot Horst currently serves as chair of the U.S. Green Building Council's LEED Steering Committee.

"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"--

Fundamentals, Techniques and Examples

Advances in Web-based Learning - ICWL 2011

Natural Ventilation for Infection Control in Health-care Settings

10th International Conference, Hong Kong, China, December 8-10, 2011. Proceedings

SI Edition

Sustainaspeak

Pass the LEED® AP ID+C EXAM With These Proven Strategies Here is the ideal study guide for understanding and preparing for the LEED® AP ID+C exam. Written by an expert who is a LEED consultant and partner at Green Education Services? a premier LEED exam preparation provider? Guide to the LEED® AP Interior Design and Construction (ID+C) Exam engages readers by breaking down difficult concepts in sustainable design and engineering in a clearly organized, straightforward manner that helps streamline the learning process for those seeking participation in the operation and maintenance of existing buildings that implement green practices. Guide to the LEED® AP Interior Design and Construction (ID+C) Exam features: A brief overview of the LEED Green Associate material included in the first portion of this LEED AP exam, along with specific ID+C content A collection of sample test questions and study tips to reinforce learned material. An accessible and stimulating approach that fosters quicker retention. A set of strategies for summarizing critical information and details more effectively. A wealth of material that includes drawings, charts, and diagrams to help understand concepts visually. A total of 128 sample flashcards that allow you to study on the go. Covering the detailed concepts of the LEED for Commercial Interiors Green Building Rating System, this book is an all-inclusive resource for achieving successful results on the LEED AP ID+C exam. Green Education Services (greenedu.com) is a leading provider of green jobs training related to LEED, EPA energy auditing, solar, and more for building developers, architects, engineers, interior designers, planners, commercial real estate brokers, and other construction industry professionals. A national member of USGBC and CAGBC, accredited by the EPA,

and an approved AIA/CES provider, Green Education Services has helped thousands of professionals throughout the United States prepare for their credentialing exams and maintain their credential as an approved GBCI CE provider. Other Michelle Cottrell titles available from Wiley: Guide to the LEED® Green Associate Exam, Guide to the LEED® AP Building Design and Construction (BD+C) Exam, Guidebook to the LEED® Certification Process: For LEED® for New Construction, LEED® for Core & Shell, and LEED® for Commercial Interiors, Guide to the LEED® AP Operations and Maintenance (O+M) Exam.

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.

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.

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.

Protecting Building Occupants and Operations from Biological and Chemical Airborne Threats

A Framework for Decision Making

Architectural Research Addressing Societal Challenges

Advanced Integrated Systems Technology Development

LEED Professional Accreditation Study Guide and Practice Exam

Handbook of Air Conditioning and Refrigeration

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

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

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.

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.

Architectural Research Addressing Societal Challenges Volume 2

Ice-Houses

Energy-Efficient HVAC Design

Mechanical and Electrical Equipment for Buildings

Heat Vent and Air Conditioning Design Guide for Tall Commercial Buildings

Energy and Environment in Architecture