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This comprehensive handbook is recognized as the definitive stand-alone energy manager's desk reference, used by tens of thousands of professionals throughout the energy management industry. This new ninth edition includes new chapters on energy management controls systems, compressed air systems, renewable energy, and carbon reduction. There are major updates to chapters on energy auditing, lighting systems, boilers and fired systems, steam and condensate systems, green buildings waste heat recovery, indoor air quality,

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utility rates, natural gas purchasing, commissioning, financing and performance contracting and much more with numerous new and updated illustrations, charts, calculation procedures and other helpful working aids. The Third Edition of ANSI/ACCA Manual D is the Air Conditioning Contractors of America procedure for sizing residential duct systems. This procedure uses Manual J (ANSI/ACCA, Eighth Edition) heating and cooling loads to determine space air delivery requirements. This procedure matches duct system resistance (pressure drop) to blower performance (as defined by manufacturer's blower performance tables). This assures that appropriate airflow is delivered to all rooms and spaces; and that system airflow is compatible with the

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operatingrange of primary equipment. The capabilities and sensitivities of this procedureare compatible with single-zone systems, and multi-zone (air zoned) systems. The primary equipment can have a multi-speed blower (PSC motor), or avariable-speed blower (ECM or constant torque motor, or a true variable speed motor).Edition Three, Version 2.50 of Manual D (D3) specifically identifiesnormative requirements, and specifically identifies related informative material. Solve any mechanical engineering problem quickly and easily This trusted compendium of calculation methods delivers fast, accurate solutions to the toughest day-to-day mechanical engineering problems. You will find numbered, step-by-step procedures for solving specific

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**problems together with worked-out examples that give numerical results for the calculation. Covers: Power Generation; Plant and Facilities Engineering; Environmental Control; Design Engineering New Edition features methods for automatic and digital control; alternative and renewable energy sources; plastics in engineering design
Electrical Wiring Commercial
Simple Solutions to Energy Calculations: Fourth Edition
A Buyer's Guide
Chemical Engineering Design
Heating, Ventilating, and Air-conditioning Applications
Handbook of Mechanical Engineering Calculations, Second Edition**

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* 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

HVAC Simplified (zip file) This text provides an understanding of fundamental HVAC concepts and how to extend these principles to the explanation of

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simple design tools used to create building systems that are efficient and provide comfortable and healthy environments. The text contains twelve chapters that review the fundamentals of refrigeration, heat transfer, and psychrometrics. Information from the ASHRAE Handbook "Fundamentals" is summarized and supplemented with items from industry sources. The remaining chapters assemble information from ASHRAE Handbooks, ASHRAE standards and manufacturer data present design procedures commonly used by professional engineers. Other topics include equipment selection and specification, comfort

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and IAQ, building assemblies, heating and cooling loads, air distribution system design, water distribution system design, electrical and control systems, design for energy efficiency, and design for economic value. A suite of complementary spreadsheet programs that incorporate design and computation procedures from the text are provided on the CD that accompanies this book. These programs include psychrometric analysis, equipment selection, heating and cooling load calculation, an electronic "ductulator," piping system design, a ductwork cost calculator, and programs to evaluate building system

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demand and energy efficiency. Future updates to these programs can be found at www.ashrae.org/updates. The downloadable version of this product comes as a zip file and includes a PDF of the User's Manual and all the supporting files located on the CD that accompanies the print version. You must have WinZip to open the download.

Based on the most recent standards from ASHRAE, the sixth edition provides complete and up-to-date coverage of all aspects of heating, ventilation, and air conditioning. The latest load calculation procedures, indoor air quality procedures, and issues related to

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ozone depletion are covered. New to this edition is the inclusion of additional realistic, interactive and in-depth examples available on the book website (www.wiley.com/college/mcquiston) that enable students to simulate various scenarios to apply concepts from the text. Also integrated throughout the text are numerous worked examples that clearly show students how to apply the concepts in realistic scenarios. The sixth edition has also been revised to be more accessible to students for easier comprehension. Suitable for one or two semester, Junior/Senior/Graduate course in HVAC taught in

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Mechanical Engineering, Architectural Engineering, and Mechanical Engineering Technology departments.
Fundamentals

Heating, Ventilating, and Air Conditioning
Spreadsheet Cooling and Heating Load Calculations
by Radiant Time Series Method

Updating the ASHRAE/ACCA Residential Heating and Cooling Load Calculation Procedures and Data
Energy Research Abstracts

Cooling and Heating Load Calculation Manual

This comprehensive handbook has become recognized as the definitive stand-alone

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energy manager's desk reference, used by thousands of professionals throughout the industry. Newly revised and edited, this eighth edition includes significant updates to energy management controls systems, commissioning, measurement and verification, and high performance green buildings. Also updated are chapters on motors and drives, HVAC systems, lighting, alternative energy systems, building envelope, performance contracting and natural gas purchasing. You'll find coverage of every component of effective energy

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management, including energy auditing, economic analysis, boilers and steam systems, heat recovery, cogeneration, insulation, thermal storage, indoor air quality, utility rates, energy systems maintenance, and more. Detailed illustrations, charts and other helpful working aids are provided throughout. Volume One Includes Chapters 1-14 and Appendices.

The 2011 ASHRAE Handbook: HVAC Applications comprises over 60 chapters covering a broad range of facilities and

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topics, and is written to help engineers design and use equipment and systems described in other Handbook volumes. ASHRAE Technical Committees have revised nearly every chapter to cover current requirements, technology, and design practice. An accompanying CD-ROM contains all the volume's chapters in both I-P and SI units.

Designed to serve as a comprehensive resource for performing energy audits in commercial facilities, this revised practical desk reference for energy engineers has

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been updated and expanded. All focal areas of the building energy audit and assessment are covered, with new chapters on water efficiency and feedback and behavior in energy management. Updated topics include compressed air, computer modeling, data center efficiency, measurement and verification, lighting, laundries, HVAC economizer savings and building vacancy along with manufacturing unit operations and calculating savings from automatic controls.

Simple Solutions to Energy Calculations 4th

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edition

**Progress in Passive Solar Energy Systems
Heating and Cooling of Buildings
Simple Solutions to Energy Calculations,
Fifth Edition**

Source Code and Data

Manual J - Residential Load Calculation

Now there is a comprehensive reference to provide tools on implementing an energy audit for any type of facility. Containing forms, checklists and handy working aids, this book is for anyone implementing an energy audit. Accounting procedures, rate of return,

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analysis and software programs are included to provide evaluation tools for audit recommendations. Technologies for electrical, mechanical and building systems are covered in detail.

**Commercial Energy Auditing Reference Handbook
2nd Edition**

Manual J 8th Edition is the national ANSI-recognized standard for producing HVAC equipment sizing loads for single-family detached homes, small multi-unit structures, condominiums, town houses, and manufactured homes. This new version incorporates the complete Abridged Edition of Manual J. The

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manual provides quick supplemental details as well as supporting reference tables and appendices. A proper load calculation, performed in accordance with the Manual J 8th Edition procedure, is required by national building codes and most state and local jurisdictions.

Solar Cooling

8th Edition, Full

Load Calculation Applications Manual (I-P Edition)

A technical guide to low and zero energy buildings

Building Services Engineering Spreadsheets

This authoritative guide provides a basis for understanding

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the emerging technology of ground source heat pumps. It equips engineers, architects, planners, regulators and geologists with the fundamental skills needed to manipulate the ground ' s huge capacity to store, supply and receive heat, and to implement technologies (such as heat pumps) to exploit that capacity for space heating and cooling. The author has geared the book towards understanding ground source heating and cooling from the ground side (the geological aspects), rather than solely the building aspects. An Introduction to Thermogeology: Ground Source Heating & Cooling explains the science behind thermogeology and offers practical guidance on different design options. This best-selling handbook is the most comprehensive and practical reference available on energy auditing in buildings

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and industry. Topics include energy assessment and computer software which will guide you in planning and carrying out a thorough and accurate energy audit of any type of facility, including electrical, mechanical and building systems analysis. Clear, easy-to-follow instructions guide you through accounting procedures, rate of return and life cycle cost analysis. Also covered is information on understanding your utility bill and using that knowledge to trim your energy costs. Loaded with forms, checklists and handy working aids, book is required reading for anyone responsible for conducting or overseeing a facility energy audit. Completely edited throughout, this latest edition includes a new chapter on investment grade energy audits and also a new chapter on retro-commissioning and energy audits. Revisions include

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new information on ISO 50001 and the Superior Energy Performance program plus a completely updated chapter on software.

An updated guide to designing buildings that heat with the sun, cool with the wind, and light with the sky. This fully updated Third Edition covers principles of designing buildings that use the sun for heating, wind for cooling, and daylight for natural lighting. Using hundreds of illustrations, this book offers practical strategies that give the designer the tools they need to make energy efficient buildings. Hundreds of illustrations and practical strategies give the designer the tools they need to make energy efficient buildings. Organized to quickly guide the designer in making buildings respond to the sun, wind and light.

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2011 ASHRAE Handbook

Solar Energy Update

Commercial Energy Auditing Reference Handbook 2nd Edition

Handbook of Energy Audits

Handbook of Energy Audits, Ninth Edition

Simple Solutions to Energy Calculations

An earth energy system (EES) is a type of heat pump system that uses the ground or groundwater as a source of energy. This guide provides information needed to understand, plan, oversee, design, build, and manage an EES for heating & cooling applications in commercial & institutional buildings. Chapter 1 provides an introduction to EESs, what they are,

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where they make the most sense, how they work, and their economics as compared to other heating, ventilating, & air conditioning systems. Chapter 2 describes the different configurations or types of EESs and factors to be considered when selecting an EES. It also introduces the energy efficiency descriptors for heat pumps used in EESs and discusses the importance of energy efficiency in other aspects of buildings. Chapter 3 provides a brief overview of an EES design. Chapter 4 examines other important matters unique to EESs, such as environmental & legal considerations and planning, installation, & maintenance issues. Chapter 5 contains a detailed examination of topics pertaining to heat pump performance & efficiency. Chapter 6 discusses the

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evaluation & calculation of building loads & energy use. Chapter 7 explains the requirements for sizing heat pumps and ground heat exchangers, and includes sample calculations. Chapter 8 outlines factors to consider in the analysis of an EES investment and includes an economic & financial calculation example. The final chapter addresses practical issues that should be considered in EES design & installation. It also provides a sample performance specification and a list of important information to obtain from suppliers & contractors. Appendices include EES case studies and a glossary.

Building Services Engineering Spreadsheets is a versatile, user friendly tool for design calculations. Spreadsheet

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application software is readily understandable since each formula is readable in the location where it is used. Each step in the development of these engineering solutions is fully explained. The book provides study material in building services engineering and will be valuable both to the student and to the practising engineer. It deals with spreadsheet use, thermal transmittance, building heat loss and heat gain, combustion analysis, fan selection, air duct design, water pipe sizing, lumen lighting design, electrical cable sizing, at a suitable level for practical design work. Commercially available software, while very powerful and comprehensive, does not allow the user any facility to look into the coded instructions. The user has to rely upon the supplier for

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explanation, updates and corrections. The advantage that the spreadsheet applications provided with the book have over purchased dedicated software, is that the user can inspect everything that the program undertakes. Parts of the worksheets can be copied to other cells in order to expand the size of each worksheet. Experienced spreadsheet operators can edit the cells to change the way in which data and calculations are used, and with guidance from the explanatory, build their own applications.

Completely revised and updated, this fifth edition of a bestseller helps building managers identify what to look for and how to evaluate before making a decision about which guarantee is better for their building and which ESCO can

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best deliver energy savings. This reference will save countless hours doing energy feasibility studies and associated calculations. The author, a practicing engineer, shares his secrets for simplifying complex energy calculations and demonstrates his unique, time-saving methods.

Inch-Pound Edition

Third Edition, Version 2. 50

Energy Dynamics of Green Buildings

Ground Source Heating and Cooling

Commercial Energy Auditing Reference Handbook, Third Edition

Commercial Earth Energy Systems

Passivhaus is the fastest growing energy performance

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standard in the world, with almost 50,000 buildings realised to date. Applicable to both domestic and non-domestic building types, the strength of Passivhaus lies in the simplicity of the concept. As European and global energy directives move ever closer towards Zero (fossil) Energy standards, Passivhaus provides a robust ‘fabric first’ approach from which to make the next step. The Passivhaus Designers Manual is the most comprehensive technical guide available to those wishing to design and build Passivhaus and Zero Energy Buildings. As a technical reference for architects, engineers and construction professionals The Passivhaus Designers Manual provides: State of the art guidance for anyone

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designing or working on a Passivhaus project; In depth information on building services, including high performance ventilation systems and ultra-low energy heating and cooling systems; Holistic design guidance encompassing: daylight design, ecological materials, thermal comfort, indoor air quality and economics; Practical advice on procurement methods, project management and quality assurance; Renewable energy systems suitable for Passivhaus and Zero Energy Buildings; Practical case studies from the UK, USA, and Germany amongst others; Detailed worked examples to show you how it's done and what to look out for; Expert advice from 20 world renowned Passivhaus designers,

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architects, building physicists and engineers. Lavishly illustrated with nearly 200 full colour illustrations, and presented by two highly experienced specialists, this is your one-stop shop for comprehensive practical information on Passivhaus and Zero Energy buildings. Spreadsheet Cooling and Heating Load Calculations by Radiant Time Series Method Building Services Engineering Spreadsheets Routledge

Cooling buildings is a major global energy consumer and the energy requirement is growing year by year. This guide to solar cooling technology explains all you need to know about how solar energy can be converted into cooling energy. It outlines the difference between heat-driven and

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photovoltaic-driven systems and gives examples of both, making clear in what situations solar cooling technology makes sense. It includes chapters on: • solar thermal collectors • solar cooling technologies • cold distribution • storage components • designing and sizing • installation, operation and maintenance • economic feasibility • potential markets • case studies. Solar Cooling is for engineers, architects, consultancies, solar thermal technology companies, students and anyone who is interested in getting involved with this technology.

Principles, Practice and Economics of Plant and Process Design

Energy Management Handbook

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ASHRAE Handbook Fundamentals 2017

The Passivhaus Designer's Manual

Handbook of Air Conditioning and Refrigeration

1997 ASHRAE Handbook

This is PDF download. ASHRAE Research Project RP-1199 developed two new residential heating and cooling loads calculation procedures: Residential Heat Balance (RHB), a detailed heat balance method that requires computer implementation; and Residential Load Factor (RLF), a simplified procedure suitable for hand or spreadsheet use. Chemical Engineering Design, Second Edition, deals with the application of chemical engineering principles to the design of chemical processes and equipment. Revised

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throughout, this edition has been specifically developed for the U.S. market. It provides the latest US codes and standards, including API, ASME and ISA design codes and ANSI standards. It contains new discussions of conceptual plant design, flowsheet development, and revamp design; extended coverage of capital cost estimation, process costing, and economics; and new chapters on equipment selection, reactor design, and solids handling processes. A rigorous pedagogy assists learning, with detailed worked examples, end of chapter exercises, plus supporting data, and Excel spreadsheet calculations, plus over 150 Patent References for downloading from the companion website. Extensive instructor resources, including 1170 lecture slides and a fully worked solutions manual are available to

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adopting instructors. This text is designed for chemical and biochemical engineering students (senior undergraduate year, plus appropriate for capstone design courses where taken, plus graduates) and lecturers/tutors, and professionals in industry (chemical process, biochemical, pharmaceutical, petrochemical sectors). New to this edition: Revised organization into Part I: Process Design, and Part II: Plant Design. The broad themes of Part I are flowsheet development, economic analysis, safety and environmental impact and optimization. Part II contains chapters on equipment design and selection that can be used as supplements to a lecture course or as essential references for students or practicing engineers working on design projects. New discussion of conceptual plant design,

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flowsheet development and revamp design Significantly increased coverage of capital cost estimation, process costing and economics New chapters on equipment selection, reactor design and solids handling processes New sections on fermentation, adsorption, membrane separations, ion exchange and chromatography Increased coverage of batch processing, food, pharmaceutical and biological processes All equipment chapters in Part II revised and updated with current information Updated throughout for latest US codes and standards, including API, ASME and ISA design codes and ANSI standards Additional worked examples and homework problems The most complete and up to date coverage of equipment selection 108 realistic commercial design projects from diverse

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industries A rigorous pedagogy assists learning, with detailed worked examples, end of chapter exercises, plus supporting data and Excel spreadsheet calculations plus over 150 Patent References, for downloading from the companion website Extensive instructor resources: 1170 lecture slides plus fully worked solutions manual available to adopting instructors

Offering the most current coverage available, ELECTRICAL WIRING COMMERCIAL, 15e is completely revised and up to date with the 2014 National Electrical Code. Extremely reader friendly, the text has long been popular with learners. Vibrant, full-color illustrations and photographs help you easily grasp difficult concepts. The new edition continues the book's emphasis on newer green technologies

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and developments within electrical design and installation, including coverage of EV stations in commercial settings. It also offers expansive coverage of safety in the workplace. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

*The Earthscan Expert Guide to Solar Cooling Systems
Commercial Energy Auditing Reference Handbook
Analysis and Design*

*Proceedings of the ... National Passive Solar Conference
Principles and Practice of Energy Efficient Design, Third
Edition*

Energy Management Handbook: 8th Edition

1-Introduction2-Building Simulation Myths3-Accuracy

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& Selecting a Tool4-Determination of Existing Conditions5-Building Survey Case Studies6-Constructing the Model7-Critiquing Output & Model Calibration8-Modeling Energy Conservation Measures9-Building Simulation & Performance ContractingAppendices

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

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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

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occupants. For engineering and architecture students in undergraduate/graduate classes, this comprehensive textbook:

Updated with new material on thermodynamics that provides a blueprint on controlling energy use in buildings, this reference will save countless hours doing energy feasibility studies and associated calculations. The author, a practicing engineer, will share with you his secrets for simplifying complex energy calculations, and show you how to use his unique, time-saving methods. You'll learn how to cut through the maze of detail using concise, innovative

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decision-making tools to determine whether you should invest real time and money into developing details of a project under consideration. Key topics covered include "energy myths and magic," the walk-through audit, lighting, pumps, fans, motors, insulation, fuel switching, heat recovery, HVAC and a summary of energy calculations.

Residential Duct Systems - Manual D

Computerized Building Energy Simulation Handbook

An Introduction to Thermogeology

Sun, Wind, and Light: Architectural Design

Strategies

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Geothermal Heat Pumps: Installation Guide HVAC Simplified

Developed by a practicing engineer, this indispensable reference will save you countless hours doing energy feasibility studies and associated calculations. The author will share with you his secrets for simplifying complex energy calculations, and show you how to use his unique, time-saving methods. You'll learn how to cut through the maze of detail using concise, innovative decision-making tools to determine whether you should invest real time and money into developing the details of a project under consideration. Numerous energy projects involving

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pumps, fans, motors, HVAC retrofits, insulation, and heat recovery are covered, with complete calculation details and solutions methodology presented. The third edition adds new material on "energy myths" associated with energy calculations and conservation. Updated with new material, this book shares the author's secrets for simplifying complex energy calculations, and shows you how to use these time-saving methods. It shows you how to cut through the maze using innovative decision-making tools to determine whether you should invest real time and money for developing details of a project being considered. There is information covered on simplified thermodynamics that gives you a blueprint for

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controlling the building's energy consumption. Key topics covered include the walk-through audit, pumps & fans VFD, high efficiency motors, insulation, fuel switching, heat recovery, HVAC, air compressor, "energy myths and magic". Each chapter has "Richard's Retrofit Rules" and anecdotal experience in the retrofit. There is a summary of energy calculations given by category, plus a discussion of performance guarantees that helps a building manager decide which ESCO can best deliver on their promises of energy savings.

"This manual focuses on the calculation of cooling and heating loads for commercial buildings. The heat balance method (HBM) and radiant time series

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method (RTSM) (as well as how to implement these methods) are discussed. Heat transfer processes and their analysis, psychrometrics, and heating load calculations are also considered"--