1. Record Nr. UNINA9910452040803321

Autore	Syed Asif
Titolo	Advanced building technologies for sustainability [[electronic resource] /] / Asif Syed
Pubbl/distr/stampa	Hoboken, N.J., : John Wiley & Sons, Inc., c2012
ISBN	1-118-25980-7 1-280-67878-X 9786613655714 1-118-26019-8
Descrizione fisica	1 online resource (258 p.)
Collana	Sustainable Design ; ; v.3
Disciplina	720.47 720/.47
Soggetti	Sustainable buildings Sustainable design Building - Technological innovations Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Advanced Building Technologies for Sustainability; Acknowledgments; Contents; Introduction; Chapter 1: Sustainability and Energy; Quality of Life Benefits; Finite Fossil Fuel Resources; Greenhouse Gases; Profits and Savings from Energy Efficiency; Site-to-Source Effect; New LEED Version 2009; Per Capita Energy Consumption; Building Energy End-Use Splits, People Use Energy; Carbon Footprint; Embodied Energy Versus Operational Energy; Funding Opportunities; Chapter 2: Radiant Cooling; History; Introduction; Why Radiant Cooling?; Applications; Public Spaces, Radiant Cooling Floors Floor ConstructionOffice Buildings, Radiant Ceiling Panels; Laboratories: Radiant Ceiling Panels; Residential; College Dormitories; Hospitals; Radiant Cooling and Historic Preservation; Chapter 3: Displacement Ventilation; History; Introduction; Conventional or Mixed-Air Systems; Difference Between Displacement and Underfloor Air Distribution (UFAD); Applications; Large Public Spaces (Cafeterias, Dining Halls, Exhibit Spaces); Health-Care; Teaching Environment:

Classroom; Performance Spaces and Theaters; Office Spaces; Chapter 4: Chilled Beams; Principle of Operation and Technology
Benefits of Chilled BeamsEnergy Savings; Comfort and Noise; Space Savings; Flexible System for High Churn; Low Maintenance; Types of Chilled Beams; Passive Chilled Beams; Active Chilled Beams; Multiservice Chilled Beams; Chilled Beam Applications; Commercial Offices; Chilled Beam Use with Underfloor Air Distribution (UFAD) Applications; Hospital and Patient Rooms; Laboratory Applications; Chapter 5: Underfloor Air Distribution (UFAD); Validation of UFAD Designs with CFD Analysis; Cost of UFAD Systems; Myths about UFAD Systems; Impact on Buildings; Floor-to-Floor Height
UFAD Impact on Building Core SpacesCritical Issues of UFAD Design; Chapter 6: Displacement Induction Units (DIU); Benefits of Displacement Induction Units; Low Energy Consumption; Thermal Comfort; Lower Noise Levels; Space Savings; Improved Indoor Environment; Lower Electrical Costs; Lower Maintenance; History of Induction Units; The Difference Between Induction Units and Displacement Induction Units; Applications; The Teaching Environment (Classrooms); Health Care: Patient Rooms (New Hospital); Health Care: Patient Rooms (Existing Hospital Renovations); Perimeter Buildings Operable Windows in BuildingsChapter 7: High-Performance Envelope; Engaging and Nonengaging Envelopes; High-Performance Envelope Definition; Most Common Energy Codes: ANSI and ASHRAE 90.1; Climate Zones; Compliance with Energy Codes; Comcheck and Rescheck; Simulation by the Energy Cost Budget Method; Glazing Characteristics; U-Value: Heat Transmission Coefficient BTU/HR SQ.FT. F; Solar Heat Gain Coefficient (SHGC); Visible Light Transmittance (VLT); Light to Solar Gain Ratio (LSG); How to Exceed the Mandatory Code Performance; Operable Windows; External Shades and Overhangs Solar-Responsive Blinds and Shades

Sommario/riassunto

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 a