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   Titolo   Managing Indoor Environments and Energy in Buildings with Integrated
                         Intelligent Systems / / by Triantafyllia Nikolaou, Dionysia Kolokotsa,
                         George Stavrakakis, Apostolos Apostolou, Corneliu Munteanu

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   Edizione   [1st ed. 2015.]

   Descrizione fisica   1 online resource (269 p.)

   Collana   Green Energy and Technology, , 1865-3529

   Disciplina   621.042

   Soggetti   Energy efficiency
                         Building construction
                         Social policy
                         Energy Efficiency
                         Building Physics, HVAC
                         Social Policy

   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 at the end of each chapters and
                         index.

   Nota di contenuto   Introduction -- Review and state-of-the-art on methodologies of
                         buildings' energy efficiency classification -- Office building simulation
                         models and simplified audits -- Detailed audit and detailed case study
                         building model. Virtual building dataset (vbd) for benchmarking and
                         classification of office buildings -- Environmental rating of buildings --
                         Energy efficiency in the built environment -- Protocol of alternative
                         measures for buildings' energy efficiency improvement.

   Sommario/riassunto   Featuring a detailed analysis and presentation of innovative researches,
                         methods, algorithms and technologies that deal with integrated
                         intelligent systems for the efficient management of energy and indoor
                         environment in buildings, this book encompasses the regulations,
                         directives and standards regarding the energy and the indoor
                         environment of buildings as well as a literature review and discussion
                         on the current state-of-the-art for buildings' energy efficiency
                         classification. Maximizing reader insight into this topic with the aid of

simulation models for buildings and energy audits at office buildings are presented including tables and figures with the detailed information regarding the parameters, inputs, outputs and the outcomes of the surveys. This book also outlines the development of a Virtual Building Dataset (VBD) of office buildings as an innovative benchmarking and classification tool. The proposed methodology overcomes the difficulties and time required for collecting the necessary massive building constructional and energy bills data by creating them virtually using efficient stochastic simulation and by taking into account all parameters that may affect the energy performance and indoor thermal comfort of office buildings. The knowledge and ideas conveyed by the book are supported with equations and algorithms and 137 colored figures and 55 tables, and features a rich bibliography, references and web sources. The book contains the basic knowledge undergraduate and especially postgraduate courses on the emergent subject of energy management and saving in buildings. The innovative aspects and guides of the book give serious opportunities to the postgraduate students in this scientific area to further develop their research skills and capabilities.