

Sustainable Building Guidelines | 18747abf8948c55fc609fd5d80257455

Sustainable Building 2000, 22-25 October 2000, Maastricht, The Netherlands
Green Building Adoption of Green Building Guidelines in the Developing Countries Based on U.S. & India Experiences
Handbook of Green Building Design and Construction
Sustainable Construction Processes
The Secretary of the Interior's Standards for Rehabilitation & Illustrated Guidelines on Sustainability for Rehabilitating Historic Buildings
Fundamentals of Integrated Design for Sustainable Building
Sustainable Construction Towards Sustainable Building
Understanding Green Building Guidelines: For Students and Young Professionals
Sustainable Industries Journal
Sustainable Design Guidelines
Sustainable Building Systems and Construction for Designers
Sustainability Guidelines for the Structural Engineer
How to Design and Build a Green Office Building
The CSI Sustainable Design and Construction Practice Guide
Sustainable Housing
Guide to Green Building Rating Systems
Green Building: Principles and Practices in Residential Construction
FLA Library Building Guidelines: Developments & Reflections
Sustainable Vernacular Architecture
Guideline for sustainable, energy efficient architecture and construction
Value Beyond Cost Savings: How to Underwrite Sustainable Properties
Constructing Green
High Performance Building Guidelines
A Handbook of Sustainable Building Design and Engineering
101 Rules of Thumb for Sustainable Buildings and Cities
Green Building Guidelines
High Performance Building Guidelines
Sustainable Building Adaptation
Materials for Sustainable Sites
101 Rules of Thumb for Low Energy Architecture
Sustainable Construction After the Tsunami
City of Austin Sustainable Building Guidelines
LEED v4 Practices, Certification, and Accreditation Handbook
Man, Technological Advancement and Sustainable Environment
Designing Sustainable Residential and Commercial Interiors
Designing the Sustainable Site
Sustainable Building Standards and Guidelines for Mixed-Use Buildings

"Fundamentals of Integrated Design for Sustainable Building offers an introduction to green building concepts as well as design approaches that reduce and can eventually eliminate the need for fossil fuel use in buildings while also conserving materials, maximizing their efficiency, protecting the indoor air from chemical intrusion, and reducing the introduction of toxic materials into the environment. It represents a necessary road map to the future designers, builders, and planners of a post-carbon world." —from the Foreword by Ed Mazria
A rich sourcebook covering the breadth of environmental building, Fundamentals of Integrated Design for Sustainable Building introduces the student and practitioner to the history, theory and technology of green building. Using an active learning approach, the concepts of sustainable architecture are explained and reinforced through design problems, research exercises, study questions, team projects, and discussion topics. Chapters by specialists in the green movement round out this survey of all the important issues and developments that students and professionals need to know. From history and philosophy to design technologies and practice, this sweeping resource is sure to be referenced until worn out. High performance buildings maximize operational energy savings; improve comfort, health, & safety of occupants & visitors; & limit detrimental effects on the environment. These Guidelines provide instruction in the new

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methodologies that form the underpinnings of high performance buildings. They further indicate how these practices may be accommodated within existing frameworks of capital project administration & facility management. Chapters: city process; design process; site design & planning; building energy use; indoor environment; material & product selection; water mgmt.; construction admin.; commissioning; & operations & maintenance. This complete guide to the evaluation, selection, and use of sustainable materials in the landscape features strategies to minimize environmental and human health impacts of conventional site construction materials as well as green materials. Providing detailed current information on construction materials for sustainable sites, the book introduces tools, techniques, ideologies and resources for evaluating, sourcing, and specifying sustainable site materials. Chapters cover types of materials, both conventional and emerging green materials, environmental and human health impacts of the material, and detailed strategies to minimize these impacts. Case studies share cost and performance information and lessons learned. This text on sustainable building construction is updated with the newest information, codes, and regulations related to green and sustainable design. This book discusses applying vernacular strategies to modern architectural design to adhere to basic green principles of energy efficiency and materials utilization. Written from an international perspective, chapters present the perspectives and experiences of architects and engineers from across the globe. Historically successful approaches are integrated with modern design concepts to create novel, sustainable, and resource conscious solutions. The scope of topics covered include natural ventilation, cooling and heating, daylight and shading devices, and green micro-climate and functional facades, making this a useful reference for a wide range of researchers and workers in the built environment. Covers the most up-to-date research developments, best practices, and innovations from countries all over the globe; Presents the latest research in vernacular architecture and sustainable building; Contains case studies and examples to enhance practical application of the technologies presented. This volume contains the extended versions of selected papers presented at the first Mediterranean Conference "Sharing Knowledge on Sustainable Building" held at the Polytechnic of Bari in December 1999, supported by the National Research Council of Italy. The publication of this book was made possible through the efforts of the contributing Authors. Other people have provided invaluable support for the conference and for the preparation of this volume; in particular, I wish to thank Antonella Lerario for providing support in the final editing of the text and images.

1 As reported in Boonstra and Rovers (2001), people spend a great deal of time inside buildings; therefore, decisions about design, construction, use, maintenance, renovation, demolition, reuse and recycling of buildings have a huge impact on the sustainable development of our society. Technical aspects, however, should be supported by adequate policies, developed with appropriate tools and driven by meaningful challenges. For people involved in sustainable buildings, the conceptual frameworks, studies and experiences collected in this volume, organized into three parts - "Policies", "Tools" and "Challenges" - will help to advance knowledge allowing them to adopt and more efficiently implement such innovations sooner.

101 Rules of Thumb sets out the essential elements of low energy architecture in a fresh, intuitive way. In an area where ever-changing technology and complex legislation can cloud the designer's thought-processes, this book encourages the designer to think clearly and intuitively about the fundamentals of low energy buildings. With reliable, simple

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rules of thumb that will provide new ideas and refresh the designer's palette, each page focuses on a single piece of advice or guidance along with a clear hand-drawn illustration, while there are also plenty of tips and more detailed information for those who wish to dig deeper. The emphasis is on passive low-energy principles, and the rules of thumb cover all the design fundamentals from site and location to orientation and form, peppered with some which will help the designer to think 'outside the box' about the design process itself. With increasing numbers of consumers becoming more environmentally conscious in their purchasing behavior, environmental practices are a decisive factor in the real estate sector. Reconciling the seemingly opposing goals of improving the environment and providing the needed infrastructure to support economic growth is the origin of the sustainable green building concept. This concept is simply about being mindful of the potential impact that the design, construction, and operation of commercial buildings will have on the environment and devising innovative strategies to mitigate or eliminate these impacts. This means changing the traditional process of designing buildings and their construction and operation, as well as the integration of emerging trends in many technology fields into buildings. The Sustainability Building Standards and Guidelines contains information intended as minimum standards for designing, constructing, and equipping sustainable mixed-use buildings. Insofar as practical, these standards relate to desired performance or results or both. Sustainable green buildings are as much about construction as they are about design. The book includes a description of the special design features, construction processes, the systems of operation and maintenance, and the interrelationships of these various functions. Increasingly, staying competitive means building owners / property developers, designers, manufacturers, and contractors are focused on achieving increasingly environmentally friendly and energy-efficient buildings with the ultimate goal of producing environmentally and energy-neutral buildings. The full-color, practical guide to designing sustainable residential landscapes and small-scale sites "Going green" is no longer a choice; it's a necessity. Developed landscapes have played a significant role in exacerbating the environmental and social problems that threaten humanity; however, they can also be part of the solution. Designing the Sustainable Site: Integrated Design Strategies for Small-Scale Sites and Residential Landscapes gives site designers and landscape architects the tools and information they need to become a driving force in the quest for sustainability. Advocating a regenerative design approach in which built landscapes sustain and restore vital ecological functions, this book guides readers through a design process for new and redeveloped sites that not only minimizes damage to the environment but also actively helps to repair it. Designing the Sustainable Site: Assists designers in identifying and incorporating sustainable practices that have the greatest positive impact on both the project and the surrounding community, within a regional context Uses photographs, sketches, and case studies to provide a comprehensive look at successful green landscape design Illustrates how sustainable practices are relevant and applicable to projects of any size or budget Demonstrates how built environments can protect and restore ecosystem services Explains the multiple and far-reaching benefits that sustainable design solutions can provide Assists project teams in fulfilling credit requirements of green building assessment tools, such as LEED, BREEAM, or SITES With attention to six global environmental challenges—including air pollution, urban flooding and water pollution, water shortages, invasive species, and loss of

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biodiversity—along with guidance on how to meet these challenges, *Designing the Sustainable Site* is a practical design manual for sustainable alternatives to small-scale site and residential landscape design. Book features Forward, Contents, Builder's Matrix. The information in this book was developed primarily for home builders, but others will find it useful. The book is intended to be national in scope, so all of the construction information and examples are not relevant for all climates. At the end of each section, readers will find "Interactions," references to other sections of the book that describe design strategies, systems, components, or materials that interact in important ways with the topic of the chapter. Experts consider green construction and the social, institutional, and cultural changes associated with it, through a sociological and organizational lens. Summarizes the main issues and strategies of the forceful and fast-paced green building movement. Many professions are increasingly producing tools to assist clients in breaking down and understanding the different elements that reside under the umbrella of the sustainability movement. For the design and construction professions, this unpacking often takes the form of green building guidelines and rating systems. This book aims to look at a selection of both national and local green building rating systems and guidelines, ranging from commercial to residential. While the goal is to provide students and young professionals with a solid overview of each product, enabling them to understand the differences and select the most appropriate system for their chosen projects, the book provides valuable overviews and comparisons for anyone interested in better buildings: designers, homeowners, realtors, contractors, facility managers, site designers, and more. The combined challenges of health, comfort, climate change and energy security cross the boundaries of traditional building disciplines. This authoritative collection, focusing mostly on energy and ventilation, provides the current and next generation of building engineering professionals with what they need to work closely with many disciplines to meet these challenges. A Handbook of Sustainable Building Engineering covers: how to design, engineer and monitor a building in a manner that minimises the emissions of greenhouse gases; how to adapt the environment, fabric and services of existing and new buildings to climate change; how to improve the environment in and around buildings to provide better health, comfort, security and productivity; and provides crucial expertise on monitoring the performance of buildings once they are occupied. The authors explain the principles behind built environment engineering, and offer practical guidance through international case studies. GEF, WHO, UNEP today announced a rejuvenated international effort to combat malaria with an incremental reduction of reliance on the synthetic pesticide DDT. Ten projects, all part of the global programme "Demonstrating and Scaling-up of sustainable Alternatives to DDT in Vector Management", involving some 40 countries in Africa, the Eastern Mediterranean and Central Asia are set to test non-chemical methods ranging from eliminating potential mosquito breeding sites and securing homes with mesh screens to deploying mosquito-repellent trees and fish that eat mosquito larvae. The new projects follow a successful demonstration of alternatives to DDT in Mexico and Central America. Here pesticide-free techniques and management regimes have helped cut cases of malaria by over 60 per cent. This book explores the concepts and practicalities that lead to sustainable construction. It breaks new ground by providing the reader with the underlying principles of how to build sustainably and then assesses many of the tools required for the task. From energy to materials and from procurement to operation, all aspects play their part in

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turning a theoretically sustainable building project into a reality. There are many guidelines for the designer on how to maximise the sustainability of buildings but this resource text supplements these by focusing on the construction and operational aspects of sustainable buildings, as well as some of the more fundamental design-related considerations. It offers an excellent text for those learning to construct, design and operate sustainable buildings. It covers the drivers for sustainable construction, definitions, historical impacts, climate change and global, regional and individual responses. It enables the construction professional to achieve optimum solutions, both in design, process and the aftercare of buildings. It evaluates the effectiveness of different renewable technologies and provides guidance on the practicalities of their use. It alerts the reader to future trends in this field."Designing Sustainable Commercial Interiors: Applying Concepts and Practices is a core text that teaches students and designers how to apply sustainable principles to all stages of the design process for residential and commercial interiors. An overview of the types of design projects emphasizes a three-pronged approach to sustainability: equity, economy and ecology. Through case studies for a range of project types - including retail, healthcare, hospitality, corporate, adaptive reuse, civic and institutional, and residential - readers will learn how to use a sustainable concept as the foundation for well-designed projects."--Written by experts, Sustainable Housing brings new perspectives on residential sustainability, using case studies of latest practice. This book is based upon the 'Housing and Sustainability' conference at the RIBA in 1998, which intended to guide action into the next century, setting down key principles, providing important new technical information and setting UK practices in a European context. The Sustainability Committee of the American Society of Civil Engineer s Structural Engineering Institute (ASCE SEI) prepared these guidelines to advance the understanding of sustainability in the structural community and to incorporate concepts of sustainability into structural engineering standards and practices. This book will educate and guide structural engineers as they meet the challenge to design and construct a sustainable built environment. The guidelines are organized into five sections: Sustainable Design and Construction, Sustainable Strategies, Building Materials, Infrastructure, and Case Studies. Although many of the subjects presented are related, each section and the related subsections have been written to stand alone, allowing this report to be used as a practical reference. This report was written for structural engineers, but related disciplines will also benefit from the contents. The book includes an important section on infrastructure because, many of the concepts and ideas presented in this guide relate to infrastructure, as well as design and construction. An important consideration for energy-efficient buildings is their primary energy requirements over the entire life cycle. How to determine this? What integrative factors influence the performance of a healthy and sustainable building? This, while it may be important for clients and architects to know, is frequently not very transparent. This book has been written to assist with clarifying target criteria and expanding horizons when it comes to ecological buildings. It is meant as a handbook and source of reference for clients, architects, planners and building operators, to provide them with pertinent information about their design, construction and operation: how to do this in the most energy-efficient and economical manner? Also, there is feedback and documentation about prominent buildings like the Hamburg Dockland or the Landesbank Baden-Wuerttemberg in Stuttgart. They provide excellent architectural examples for detailed construction

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and design solutions. Further, there are insightful interviews with architects and clients about many important buildings, which help turn this book into an integrated source of reference for sustainable architecture. - A Guideline for Planning, Construction and Operation of sustainable Buildings - A source of reference for clients, architects, planners and building operators - Innovative architectural examples with sustainable concepts and design

In this book, you will learn how to protect the building occupants' health, improve employee productivity, use resources more efficiently, reduce your impact on the environment, select a site for a new building, protect and maintain the current landscape, use recycled content and natural lighting, install high-efficiency lighting systems, select heating and cooling systems and materials, and use dimensional planning and material efficiency strategies. You will also learn everything you need to know about water savings, energy efficiency, environmentally friendly building materials, indoor environmental quality, building shape and orientation, alternative energy sources, dual plumbing, green building guidelines, gray water systems, water-conserving fixtures, the costs and financial benefits of building green, foundations, floors, and roofing.

The one-stop guide for choosing a green building rating system Today, sustainability is a growing concern for the architects, designers, builders, and owners of commercial and residential buildings. Meeting the requirements of a rating system provides a metric to evaluate and set priorities. But the variety and complexity of methods available to assess the eco-friendliness of a building can seem overwhelming. Guide to Green Building Rating Systems informs readers about the rating system selection process. Comparing essential issues such as cost, ease of use, and building performance, this book offers solid guidance that will help readers find the rating system that best fits their needs. This easy-to-follow reference includes: An overview of the major national rating systems, including LEED®, Green Globes®, the National Green Building Standard, and ENERGY STAR® An in-depth look at each rating system, including its evolution, objectives, point structure, levels of certification, benefits, and shortcomings How the ratings systems work for different types of buildings—commercial, multi-family residential, and single-family residential construction Illustrated case studies from different climate regions with project descriptions, cost data, and lessons learned by design teams, constructors, and owners An overview of local, regional, and international rating systems Guide to Green Building Rating Systems demystifies complex material, making this book an essential reference for building professionals engaged in, or wishing to pursue, sustainable building practices.

How to adapt existing building stock is a problem being addressed by local and state governments worldwide. In most developed countries we now spend more on building adaptation than on new construction and there is an urgent need for greater knowledge and awareness of what happens to commercial buildings over time. Sustainable Building Adaptation: innovations in decision-making is a significant contribution to understanding best practice in sustainable adaptations to existing commercial buildings by offering new knowledge-based theoretical and practical insights. Models used are grounded in results of case studies conducted within three collaborative construction project team settings in Australia and the Netherlands, and exemplars are drawn from the Americas, Asia, Japan, Korea and Europe to demonstrate the application of the knowledge more broadly. Results clearly demonstrate that the new models can assist with informed decision-making in adaptation that challenges some of the prevailing solutions based on empirical approaches and which do not

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accommodate the sustainability dimension. The emphasis is on demonstrating how the new knowledge can be applied by practitioners to deliver professionally relevant outcomes. The book offers guidance towards a balanced approach that incorporates sustainable and optimal approaches for effective management of sustainable adaptation of existing commercial buildings. The leading green building reference, updated with the latest advances in the field Sustainable Construction is the leading reference for the design, construction, and operation of high performance green buildings. With broad coverage including architecture, engineering, and construction, this book nevertheless delivers detailed information on all aspects of the green building process, from materials selection to building systems and more. This new fourth edition has been updated to reflect the latest codes and standards, including LEED v4, and includes new coverage of carbon accounting. The discussion has been updated to align with the current thinking on economics, climate change, net zero buildings, and more, with contributions by leaders in the field that illustrate the most recent shifts in thinking and practice. Ancillary materials including an instructor's manual and PowerPoint presentations for each chapter help bring this clear and up-to-date information into the classroom, making this book a valuable reference for working construction professionals. Also, Interactive graphics found throughout the course help activate the content and highlight key concepts for students. Sustainable construction has gone mainstream, and will one day be the industry norm. This book provides a comprehensive reference to all aspects of a project to show you how green building concepts and principles apply throughout the design and construction process. Get up to date on the latest green building codes and standards Learn about the newest technology in green building materials Adopt the best practices in procurement and delivery systems Apply sustainability concepts to all aspects of construction and design Green buildings operate at a very high level of efficiency, which is made possible only by careful consideration every step of the way. Appropriate land use, landscaping, construction materials, siting, water use, and more all play a role in a structure's ultimate carbon footprint. Sustainable Construction provides clear guidance for all aspects of green building, including the most recent advances and the latest technology. High performance buildings maximize operational energy savings; improve comfort, health, & safety of occupants & visitors; & limit detrimental effects on the environment. These Guidelines provide instruction in the new methodologies that form the underpinnings of high performance buildings. They further indicate how these practices may be accommodated within existing frameworks of capital project administration & facility management. Chapters: city process; design process; site design & planning; building energy use; indoor environment; material & product selection; water mgmt.; construction admin.; commissioning; & operations & maintenance. The information society and the information age are changing library services as well as library premises. This raises questions about what needs to be considered when planning and designing new library buildings in order to achieve attractive, efficient and future-oriented new library spaces. This new publication provides information and guidelines for the building planning process, whether you are planning a new public or academic library building. It reflects on fundamental issues, on new development trends and on the planning process. The library building process is seen from both the library manager's perspective as well as that of the architect and designer. Issues covered include what to consider when investigating the need for space, library design from a marketing viewpoint, green management

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and sustainability relating to library buildings and a layman's guide to reading plans. This publication and the IFLA guidelines provided are not seen as a traditional set of recommendations to be rigidly adhered to since this would be unrealistic in a fast-changing and global context. Rather, library managers and architects should read them in order to inform their thinking on key issues and establish a planning programme. They must then relate them to their own countries and circumstances by making the relevant local adjustments. 'Sustainable Construction' uses the latest US Green Building Council's Leadership in Energy and Environmental Design standard to explain the best practices in building procurement and delivery systems. Nowadays there is an ever growing awareness regarding inevitable importance of sustainable development and its sub topics such as environment protection, ecology, resource saving, energy efficiency, etc. Due to massive and rapid development in recent years, this topic is getting more crucial in developing countries for instance Iran. It is getting more obvious that most of the development activities in absence of precise analysis of current conditions, as well as consequences of such activities, will lead to devastation of natural resources. The resources that is essential for further development of the country. Therefore, It is necessary to deal with sustainable development and environmental issues from the broader perspective, where includes items underlying immediate causes of environmental impact and at the same time tries to improve them. Sustainability or sustainable development is an umbrella covering many issues and aspects, among them energy, which is the key item, because energy consumption of buildings could have an impact on environment more than other aspects. Considering the huge portion of energy consumption in construction industry and housing sector, paying special attention to improvements in this sector is essential. Following this goal, the aim of this publication is to highlight procedures and practices which promote sustainable construction that is about creating a better quality of building and more healthy places to live in. Procedure of sustainable design includes various approaches and methods to develop energy efficient and environmentally sensitive buildings. Such approaches and methods demonstrate how to design, develop and construct all buildings in general and residential buildings in particular. Among various approaches towards sustainability, "Passive solar strategies" are well-known thanks to their cost efficiency and context friendliness of its principals and measures. The approach of passive design (architectural) strategies could be considered as the most applicable approach for resource saving and sustainability, thinking about special situation of Iran in particular and the Mena region in general. Such an approach requires paying special attention to climate, social characteristics of current or prospective inhabitants, topographical-physical characteristics as well as architectural characteristics of the understudied area. The relationships and interactions among society, building and its architecture and climate is "Site-specific" and dynamic. Therefore, they should be studied and properly analyzed throughout a specific project process for each certain place. The most expecting outcomes are precise definitions of passive design strategies, generally for buildings in MENA Region and especially for Iran. This publication is prepared in the young cities project framework, as the reasonable outcome of the developed pilot projects. The book starts with introducing the target group, related definitions and a brief overview on a conventional approach and its impact on environment. This chapter ends up with a brief review on benefits of applying sustainable guidelines. As the next step, after analyzing the climate and its

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relationship with thermal comfort and building, the main principals of passive solar design are introduced. The selected principles are: orientation, day-lighting, shading, thermal mass, insulation and ventilation. After a brief introduction of the principals, each one is explained in detail through its general principles and design strategies. Sustainable construction is examined based on its main pillars: construction systems, building elements, ecological building materials, and applicable measures for building physic. Construction systems are sorted out in six main groups as: block work- brick infill, block work- lightweight block infill, conventional panels, light weight steel frame, tunnel form structural system and precast modular. All selected systems are introduced based on following factors: brief description of the building concept, factory production, insulation, wastage, finishes, labor, installation, transport- lifting, services, hydronic cooling/ heating and safety. Then main building elements are examined. Here the elements are limited to: foundations, walls, floors, roofs, doors and windows. After a short description, different types of each element are introduced. Ecological building materials are investigated in chapter four. To find a base to compare, several common criteria are selected such as: embodied energy, pollution and waste, local production, reusability and recyclability, durability and interdependency. Applicable measures for building physic are examined in chapter five. The selected main measures are as follows: insulation, glazing, thermal mass, day-lighting, shading, ventilation and air-tightness. After describing the general principles of each measure, several recommendations in frame of design considerations are provided. Die enorme Bedeutung nachhaltiger Projekte wie Umweltschutz, Ökologie, sparsamer Umgang mit Rohstoffen, Energieeffizienz usw. dringt immer stärker in unser Bewusstsein. Aufgrund der massiven und rasanten Entwicklung in den Schwellenländern, z. B. Iran, gewinnen Umweltschutz und Nachhaltigkeit immer mehr an Relevanz. Ein einseitiges Wirtschaftswachstum, ohne Berücksichtigung ökologischer und klimatischer Bedingungen, verursacht die Zerstörung der Umwelt und Rohstoffe, Ressourcen, die für die weitere Entwicklung der Länder unverzichtbar sind. Es ist unumgänglich, sich umfassend mit nachhaltiger Entwicklung und ökologischen Aspekten auseinanderzusetzen, die unmittelbaren Auswirkungen auf die Umwelt zu erfassen und gleichzeitig Möglichkeiten einer Optimierung aufzuzeigen. Nachhaltigkeit und Umweltschutz erfassen eine Vielzahl von Themen und Aspekten, u. a. den Energieverbrauch; ein wesentlicher Faktor, da der Energieverbrauch in Gebäuden den größten Einfluss auf die Umweltbilanz hat. In Anbetracht des enormen Energieverbrauchs in Bauwirtschaft und Wohnungsbau ist es unerlässlich, gerade in diesem Bereich eine Optimierung in der weiteren Entwicklung zu verfolgen. Diesem Ziel folgend, werden in dieser Publikation Verfahren und Methoden, für nachhaltige Bauweisen, unter Berücksichtigung einer besseren Bauqualität und gesundheitlicher Aspekte, erläutert. Die Maßnahmen nachhaltigen Designs beinhalten verschiedene Ansätze und Methoden, energieeffiziente und umweltfreundliche Gebäude zu entwickeln. Sie zeigen Entwurf, Konstruktion und bauliche Ausführung von Gebäuden im Allgemeinen und Wohngebäuden im speziellen. Neben den verschiedenen Ansätzen sind die „passive solar strategies“ die wohl namhaftesten Methoden, da diese sehr rentabel und daher für Bauherren attraktiv sind. Angesichts der speziellen Situation im Iran im Besonderen und der MENA-Region im Allgemeinen, könnten die passiven Design- (Architektur-) Strategien als eine der am besten anzuwendenden Methoden für Rohstoffeffizienz und Nachhaltigkeit betrachtet werden. Dies setzt eine besondere Berücksichtigung des dortigen

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Klimas, der sozialen Charakteristiken derzeitiger oder zukünftiger Einwohner als auch der topographisch-physischen und architektonischen Charakteristiken der betroffenen Region voraus. Beeinflussung und Beziehungen zwischen Gesellschaft, Gebäuden, Architektur und Klima sind „lokal spezifisch“ und dynamisch. Deshalb sollten diese Faktoren für jeden Standort neu geprüft und analysiert werden. Die Resultate dieser Analysen, allgemein für Gebäude in der MENA-Region und im Besonderen im Iran, zeigen deutlich die Überlegenheit von passiven Designstrategien. Diese Publikation ist das Resultat der entwickelten Pilotprojekte im Rahmen des Young Cities-Projektes. Sie beginnt mit der Vorstellung der Zielgruppe, relevanten Definitionen und einem kurzem Überblick des konventionellen Ansatzes und dessen Einfluss auf die Umwelt. Das Kapitel endet mit einem kurzen Rückblick über den Nutzen nachhaltiger Bauweise. Nach Analyse des Klimas und seine Beziehung zu thermischem Komfort und Gebäuden werden die wichtigsten Prinzipien passiver Solarenergie vorgestellt: Orientierung, Tageslicht, Schatten, thermale Masse, Isolierung und Ventilierung; ihre Grundlagen und Designstrategien detailliert erläutert. Nachhaltige Konstruktion und deren Hauptpfeiler, Bausysteme, Bauelemente, ökologische Bauelemente und anwendbare Maßnahmen für die Bauphysik, werden anschließend beleuchtet. Dabei wurden die Konstruktionssysteme in sechs Hauptgruppen gegliedert: Ziegeleinfüllung, leichtgewichtige Ziegeleinfüllung, klassische Füllwände, leichtgewichtige Stahlrahmen, tunnelförmige Struktursysteme und vorgefertigte Modelle. Anhand folgender Faktoren werden diese eingehend dargestellt: Baukonzepts, Fabrikproduktion, Isolierung, Abnutzung, Verarbeitung, Arbeitsaufwand, Installierung, Transport-Beförderung, Services, hydronische Kühlung/Heizung und Sicherheit. Die Hauptbauelemente wie Unterbau, Wände, Boden, Dächer, Türen und Fenster werden beschrieben und verschiedene Baureihen dieser vorgestellt. Das vierte Kapitel befasst sich mit ökologischen Baumaterialien. Um hierbei eine vergleichbare Basis zu finden, wurden gemeinsame Kriterien ausgewählt: graue Energie, Verschmutzung und Abfall, lokale Produktion, Wiederverwendung und Recycling, Nachhaltigkeit und Interdependenzen. Im fünften Kapitel werden anwendbare Maßnahmen für die Bauphysik, wie Isolierung, Lasur, Wärmemasse, Tageslicht, Schatten, Ventilation und Luftdichte, untersucht, deren Grundlagen beschrieben und Empfehlungen bezüglich der Gestaltung präsentiert. GREEN BUILDING: PRINCIPLES AND PRACTICES IN RESIDENTIAL CONSTRUCTION provides a current, comprehensive guide to this exciting, emerging field. From core concepts to innovative applications of cutting-edge technology and the latest industry trends, this text offers an in-depth introduction to the construction of green homes. Unlike many texts that adopt a product-oriented approach, this book emphasizes the crucial planning, processes, and execution methods necessary for effective, environmentally sound construction. This text demonstrates that Earth-friendly products and energy-efficient materials take planning in order to make a building truly green. This visionary text helps students and professionals develop the knowledge and skills to think green from start to finish, empowering and inspiring them to build truly sustainable homes. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version. The CSI Sustainable Design and Construction Practice Guide is a compilation of information and recommended best practices for those who participate in the design and construction of commercial-level sustainable facilities. It offers guidelines and standards for applying sustainable design and construction principles in practical terms. This Practice Guide includes

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an overview of sustainable design standards and rating systems; an overview of green products and systems, and how to evaluate them; the lifecycle of a building; and the roles and responsibilities of members of the design and construction team. Packed with conceptual sketches and photos, real world case studies and green construction details, Handbook of Green Building Design and Construction provides a wealth of practical guidelines and essential insights that will facilitate the design of green buildings. Written in an easy to understand style, the Handbook draws on over 35 years of personal experience across the world, offering vital information and penetrating insights into two major building rating systems such as LEED and BREEAM both used extensively in the United States, Europe, Asia and the Middle East. Develop a project schedule that allows for systems testing and commissioning. Create contract plans and specifications to ensure building performance A step-by-step approach for integrating technologies into the different stages of design and execution. 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 People across the world are becoming more aware of the need for the buildings and cities they live and work in to be sustainable, but the issue of how to be sustainable can seem a confusing and complex one. These rules of thumb provide universal guidelines for the sustainable design of both buildings and the urban realm. It's a global primer and textbook for anyone interested in understanding sustainability in the built environment, an ideal starting point for students as well as an aide memoir for more experienced readers and practitioners interested in this field. Enhances overall understanding of basic preservation principles. Shows specific examples of appropriate treatments and the consequences of inappropriate treatments. Includes list of technical guidance publications.

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