

Sustainable Residential Design Concepts Springer

This book is the result of recent research that deals with the built environment and innovative materials, carried out by specialists working in universities and centers of research in different professional fields ? architecture, engineering, physics ? and in an area that that spans from the Mediterranean Sea to the Persian Gulf, and from South Eastern Europe to the Middle East. This book takes the necessity of re-shaping the concept of building design in order to transform buildings from large scale energy consumers to energy savers and producers into consideration. The book is organized in two parts: theory and case studies. For the theoretical part, we chose from the wide range of sources that provide energy efficient materials and systems the two that seem to be endless: the sun and vegetation. Their use in building products represents a tool for specialists in the architectural design concept. The case-studies presented analyze different architectural programs, in different climates, from new buildings to rehabilitation approaches and from residential architecture to hospitals and sports arenas; each case emphasizes the interdisciplinarity of the building design activity in order to help readers gain a better understanding of the complex approach needed for energy efficient building design

This book is a comprehensive document visualizing the future of built environment from a multidisciplinary dimension, with special emphasis on the Indian scenario. The multidisciplinary focus would be helpful for the readers to cross-refer and understand others' perspectives. The text also includes case studies substantiating theoretical research. This method of composition helps the book to maintain rational balance among theory, research and its contextual application. The book comprises selected papers from the National Conference on Sustainable Built Environment. The chapters provide varied viewpoints on the core issues of urbanization and planning. This compilation would be of interest to students, researchers, professionals and policy makers.

Encyclopedia of Renewable and Sustainable Materials provides a comprehensive overview, covering research and development on all aspects of renewable, recyclable and sustainable materials. The use of renewable and sustainable materials in building construction, the automotive sector, energy, textiles and others can create markets for agricultural products and additional revenue streams for farmers, as well as significantly reduce carbon dioxide (CO2) emissions, manufacturing energy requirements, manufacturing costs and waste. This book provides researchers, students and professionals in materials science and engineering with tactics and information as they face increasingly complex challenges around the development, selection and use of construction and manufacturing materials. Covers a broad range of topics not available elsewhere in one resource Arranged thematically for ease of navigation Discusses key features on processing, use, application and the environmental benefits of renewable and sustainable materials Contains a special focus on sustainability that will lead to the reduction of carbon emissions and enhance protection of the natural environment with regard to sustainable materials

The book presents methodological and applied aspects of sustainability and sustainable management from different countries and regions around the globe. It discusses approaches to sustainability assessment, demonstrates how ideas of sustainability and sustainable management are incorporated into public policies and private actions at local and national levels. Authors focus on promoting greater sustainability in natural resource management, energy production and storage, housing design, industrial reorganization, coastal planning, land use, and business strategy, including sustainability indicators, environmental damages, and theoretical frameworks. Chapters reflect environmental, economic and social issues in sustainable development, challenges encountered, and lessons learned as well as solutions proposed.

Select Proceedings of NSC 2019

Perspectives on Social Sustainability and Interior Architecture

Green Roof Ecosystems

Fundamentals of Sustainable Urban Design

Planning and Designing Sustainable and Resilient Landscapes

Accessible Housing for South Asia

How the Past Can Enrich the Future

This book highlights scientific achievements in the key areas of sustainable electricity generation and green building technologies, as presented in the vital bi-annual World Renewable Energy Network’s Med Green Forum. Renewable energy applications in power generation and sustainable development have particular importance in the Mediterranean region, with its rich natural resources and conducive climate, making it a perfect showcase to illustrate the viability of using renewable energy to satisfy all energy needs. The papers included in this work describe enabling policies and offer pathways to further develop a broad range of renewable energy technologies and applications in all sectors – for electricity production, heating and cooling, agricultural applications, water desalination, industrial applications and for the transport sector.

This book collects a set of reflections concerning the planning of contemporary cities by urban design, with a special emphasis on some needs and shortcomings emerged during the coronavirus pandemic. With the ultimate goal of designing accessible, inclusive and welcoming green cities, it discusses the urgent need for new systems of public spaces across the city, together with alternative solutions for individual mobility (especially slow mobility) and social interaction. It is intended for a broad readership, including designers, engineers, architects, social scientists, stakeholders, and public administrators, who deal with various aspects of the realization of the City 4.0.

This one of a kind reference gathers numerous new studies examining the design of buildings in seaside locations. Chapters discuss design for various locations and seaside climates and include information regarding climate, materials, concepts of cooling and heating, vegetation and micro-climate, and weather conditions and sustainability. This book provides architects, engineers, builders, and students with design examples and applications that will enable them to design and build comfortable, cost-effective and sustainable buildings in maritime zones.

What type of sustainable concepts will meet future mobility requirements? Digitization is leading to the growth of the "sharing society". Especially in megacities, automation and the challenges to last mile logistics are likely to increase significantly. The question is: How can we use active development methods to design clean, efficient and intelligent mobility solutions? The international congress "Vehicles of Tomorrow" is an information and communication platform that showcases all aspects of the mobility transformation.

Designing a Place Called Home

A Focus on the Global South

Sustainable Environmental Design in Architecture

Proceedings of the National Conference on Sustainable Built Environment 2015

Buildings in Maritime Zones

Sustainable Residential Landscapes

Perspectives, Practices and Education

This book begins with an introduction describing current societal transformations that merit new urban designs, including depletion of non-renewable natural resources, elevated levels of greenhouse gas emissions, large numbers of aging " Baby Boomers, " and climate change. Dr. Friedman then examines these challenges through thirty chapters of interest to urban designers, architects, civil and construction engineers, and town planners. Each of these topics represents an aspect of urban design and describes an innovative solution and offers a detailed description of underlying principles. The highly illustrated text presents innovative urban design strategies based on sustainable principles. Integrated with each chapter are several international case studies illustrating design implementations.

In this book, leading international experts explore the emerging concept of the zero energy mass custom home (ZEMCH) – designed to meet the need for social, economic, and environmental sustainability – and provide all of the knowledge required for the delivery of zero energy mass customized housing and community developments in developed and developing countries. The coverage is wide ranging, progressing from explanation of the meaning of sustainable development to discussion of challenges and trends in mass housing, the advantages and disadvantages of prefabricated methods of construction, and the concepts of mass customization, mass personalization, and inclusive design. A chapter on energy use will aid the reader in designing and retrofitting housing to reduce energy demand and/or improve energy end use efficiency. Passive design strategies and active technologies (especially solar) are thoroughly reviewed. Application of the ZEMCH construction criteria to new buildings and refurbishment of old houses is explained and the methods and value of building performance simulation, analyzed. The concluding chapter presents examples of ZEMCH projects from around the world, with discussion of marketing strategy, design, quality assurance, and delivery challenges. The book will be invaluable as a training/teaching tool for both students and industry partners.

Biophilic and Bioclimatic Architecture is a guide to innovative architectural design for architects, engineers and other specialists who are working with biophilic and bioclimatic architectural concepts. Biophilic and Bioclimatic Architecture has three parts: •Part I focuses on the relationship between architecture and human needs and the creation process, demonstrating the meaning of architectural value in architectural hypothesis. •Part II opens the way towards a new understanding of biophilic architecture as a response to the negative actions of humans and the negative effects of using natural resources. •Part III shows the benefits of combining the effects of the climate with the notion of human comfort in bioclimatic architecture.

This book explores the recent advances in the leading paradigms of urbanism, namely compact cities, eco-cities, and data–driven smart cities, and the evolving approach to their amalgamation under the umbrella term of smart sustainable cities. It addresses these advances by investigating how and to what extent the strategies of compact cities and eco-cities and their merger have been enhanced and strengthened through new planning and development practices, and are being supported and leveraged by the applied solutions pertaining to data-driven smart cities. The ultimate goal is to advance sustainability and harness its synergistic effects on multiple scales. This entails developing and implementing more effective approaches to the balanced integration of the three dimensions of sustainability, as well as to producing combined effects of the strategies and solutions of the prevailing approaches to urbanism that are greater than the sum of their separate effects in terms of the tripartite value of sustainability. Sustainable urban development is today seen as one of the keys towards unlocking the quest for a sustainable world. And the big data revolution is set to erupt in cities throughout the world, heralding an era where instrumentation, datafication, and computation are increasingly pervading the very fabric of cities and the spaces we live in thanks to the IoT. Big data and the IoT technologies are seen as powerful forces that have tremendous potential for advancing urban sustainability. Indeed, they are instigating a massive change in the way sustainable cities can tackle the kind of special conundrums, wicked problems, and significant challenges they inherently embody as complex systems. They offer a multitudinous array of innovative solutions and sophisticated approaches informed by groundbreaking research and data–driven science. As such, they are becoming essential to the functioning of sustainable cities. Besides, yet knowing to what extent we are making progress towards sustainable cities is problematic, adding to the fragmented, conflicting picture that arises of change on the ground in the face of the escalating rate and scale of urbanization and in the light of emerging ICT and its novel applications. In a nutshell, new circumstances require new responses. This timely and multifaceted book is intended for a wide readership. As such, it will appeal to researchers, academics, urban scientists, urbanists, planners, designers, policy-makers, and futurists, as well as all readers interested in sustainable cities and their ongoing and future data-driven transformation.

Toward Sustainable Community

Seaside Building Design: Principles and Practice

Theory and Application in the Western USA and Canada

Office Buildings

Mediterranean Green Buildings & Renewable Energy

Sustainable Vernacular Architecture

An International Perspective

This book studies the application of green roofs in ecoregions of the western United States and Canada. While green roofs were intended to sustain local or regional vegetation, this volume describes how green roofs in their modern form are typically planted with a low-diversity mix of sedums from Europe or Asia. The authors demonstrate how in the western USA and Canada many green roofs have been designed with native plants and have been found to thrive. Part I of this book covers theory and an overview of ecoregions and their implications for green roofs. In Part II vegetation from prairies, deserts, montane meadows, coastal meadows, and scrub and sub-alpine habitats are explored on seventy-three ecoregional green roofs. Case studies explore design concepts, materials, watering and maintenance, wildlife, plant species, and lessons learned. Part III covers an overview of ecoregional green roofs and a future outlook. This book is aimed at professionals, designers, researchers, students and educators with an interest in green roofs and the preservation of biodiversity.

This edited volume is a compilation of the ‘built environment’ in response to many investigations, analyses and sometimes mere observations of the various dialogues and interactions of the built, in context to its ecology, perception and design. The chapters concentrate on various independent issues, integrated as a holistic approach, both in terms of theoretical perspectives and practical approaches, predominantly focusing on the Global South. The book builds fabric knitting into the generic understanding of environment, perception and design encompassing ‘different’ attitudes and inspirations. This book is an important reference to topics concerning urbanism, urban developments and physical growth, and highlights new methodologies and practices. The book presumes an understanding unearthed from various dimensions and again woven back to a common theme, which emerges as the reader reads through. Various international experts of the respective fields working on the Global South contributed their latest research and insights to the different parts of the book. This trans-disciplinary volume appeals to scientists, students and professionals in the fields of architecture, geography, planning, environmental sciences and many more.

This book argues that interior architects have a responsibility to practice their profession in collaborative ways that address the needs of communities and of to be the agents of social justice and cultural heritage. The book is divided into three sections, based on three pivotal themes – community engagement, social justice and cultural heritage. Each section has chapters that put forward the principles of these themes, leading into a variety of fascinating case studies that illustrate how socially sustainable design is implemented in diverse communities across the world. The second section includes four concise case studies of community housing issues, including remote-area indigenous housing and housing for the homeless. The third section offers two extensively researched essays on design and cultural heritage – a case study of the development of a redundant industrial site and a historical study of gendered domestic interiors. The book appeals to a wider audience than the design community alone and challenges mainstream interior design/interior architecture practitioners nationally and internationally to take a leading role in the field of socially responsible design. The issues raised by the authors are relevant for individuals, communities, government and non-government organisations, professionals and students. “In the twenty-first century we seem to have entered into a new world of knowledge discovery, where many of the most exciting insights come not from the authority of a traditional discipline, but from the dialogue that happens at the hubs and intersections of thought – the arenas where different disciplines and approaches, different schools and habits of thinking, come together to collaborate and contend. This collection is a good example of this, and I hope the book will be widely read and its lessons learned and applied.” Tim Costello, Officer of the Order of Australia, Chief Executive, World Vision Australia.

This book focuses on sustainability concepts in architecture and urban design, environmental issues, and natural resources. Today it has become essential to reduce carbon emissions, protect habitats, and preserve the delicate ecosystems of our planet. Accordingly, sustainable development has to be improved by decreasing the consumption of non-renewable resources, in order to help nature replenish itself. Further, it highlights the efforts that have been made by architects, environmentalists, engineers, students, planners and everyone in between in order to improve sustainability in various developing communities and countries.

Advances in Systems Engineering

Encyclopedia of Renewable and Sustainable Materials

Towards Implementation of Sustainability Concepts in Developing Countries

The Importance of Wood and Timber in Sustainable Buildings

Life from the Inside

ZEMCH: Toward the Delivery of Zero Energy Mass Custom Homes

Understanding Built Environment

This book comprises select proceedings of the 43rd National Systems Conference on Innovative and Emerging Trends in Engineering Systems (NSC 2019) held at the Indian Institute of Technology, Roorkee, India. The contents cover latest research in the highly multidisciplinary field of systems engineering, and discusses its various aspects like systems design, dynamics, analysis, modeling and simulation. Some of the topics covered include computing systems, consciousness systems, electrical systems, energy systems, manufacturing systems, mechanical systems, literary systems, social systems, and quantum and nano systems. Given the scope of the contents, this book will be useful for researchers and professionals from diverse engineering and management background.

This book deals with planning issues in landscape architecture, which start at the evaluation of the existing fabric of society, its history and memory, approached and conserved through photography, film and scenographic installations, a way in which the archetypes can be investigated, be it industrial derelict sites or already green spaces and cultural landscapes. It provides approaches to intervention, through rehabilitation and upgrade, eventually in participative manner. To such evaluation and promotion a couple of disciplines can contribute such as history of art, geography and communication science and of course (landscape) architecture. The field of landscape architecture reunites points of view from such different disciplines with a view to an active approach a contemporary intervention or conservation. The book presents case studies from several European countries (Romania, Germany, Austria, Italy, Portugal) mostly for large landscape in the outskirts of the cities and in the parks.

This proceedings volume presents the latest research from the worldwide mass customization, personalization and co-creation (MCPC) community bringing together new thoughts and results from various disciplines within the field. The chapters are based on papers from The MCPC 2015 Conference

where the emphasis was placed on “managing complexity.” MCPC is now beginning to emerge in many industries as a profitable business model. But customization and personalization go far beyond the sheer individualization of products and become an extension of current business models and production styles. This book covers topics such as complexity management of knowledge-based systems in manufacturing design and production, sustainable mass customization, choice navigation, and product modeling. The chapters are contributed by a wide range of specialists, offering cutting-edge research, as well as insightful advances in industrial practice in key areas. The MCPC 2015 Conference had a strong focus on real life MCPC applications, and this proceedings volume reflects this. MCPC strategies aim to profit from the fact that people are different. Their objective is to turn customer heterogeneities into profit opportunities, hence addressing the current trend of long tail business models. Mass customization means to provide goods and services that best serve individual customers’ personal needs with near mass production efficiency. This book brings together the latest from MCPC thought leaders, entrepreneurs, technology developers, and researchers that use these strategies in practice.

In order to compete in the current commercial environment companies must produce greater product variety, at lower cost, all within a reduced product life cycle. To achieve this, a concurrent engineering philosophy is often adopted. In many cases the main realization of this is Design for Manufacture and Assembly (DFM/A). There is a need for in-depth study of the architectures for DFM/A systems in order that the latest software and knowledge-based techniques may be used to deliver the DFM/A systems of tomorrow. This architecture must be based upon complete understanding of the issues involved in integrating the design and manufacturing domains. This book provides a comprehensive view of the capabilities of advanced DFM/A systems based on a common architecture.

Ecoregional Green Roofs
 Advanced Technologies for Sustainable Systems
 Impacts on Health
 Concepts, Methodologies, Tools, and Applications
 Reflections on strategic and sustainable urban design after Covid-19 pandemic
 Concepts - Materials - Design
 Sustainable Architecture and Urbanism

Sustainable housing is generally used to describe housing that is environmentally friendly and resource-efficient over the lifetime of the building. Homes are designed to have the least possible negative impact on the environment. This means energy efficiency, avoiding environmental toxins, and responsibly using materials and resources while having positive physical and psychological effects on inhabitants. This book presents a comprehensive overview of sustainable housing, starting from legislation and ending with the design and configuration of homes.

This book reports on cutting-edge technologies that have been fostering sustainable development in a variety of fields, including built and natural environments, structures, energy, advanced mechanical technologies as well as electronics and communication technologies. It reports on the applications of Geographic Information Systems (GIS), Internet-of-Things, predictive maintenance, as well as modeling and control techniques to reduce the environmental impacts of buildings, enhance their environmental contribution and positively impact the social equity. The different chapters, selected on the basis of their timeliness and relevance for an audience of engineers and professionals, describe the major trends in the field of sustainable engineering research, providing them with a snapshot of current issues together with important technical information for their daily work, as well as an interesting source of new ideas for their future research. The works included in this book were selected among the contributions to the BUE ACE1, the first event, held in Cairo, Egypt, on 8-9 November 2016, of a series of Annual Conferences & Exhibitions (ACE) organized by the British University in Egypt (BUE).

This book explores the bioclimatic approach to building design. Constant innovations in the field are evident, including the need to face climate changes and increase the local resilience at different scales (regional, urban, architectural). Differently from other contributions, this book provides a definition of the bioclimatic design approach following a technological and performance-driven vision. It includes one of the largest collection of research voices on the topic, becoming also a critical reference work for bioclimatic theory. It is intended for architects, engineers, researchers, and technicians who have professional and research interests in bioclimatic and in sustainable and technological design issues.

This insightful volume shares design ideas to help builders, planners and architects create mass-produced affordable housing that pushes suburban development in more sustainable, liveable directions. The author argues that improving the quality of design in our new homes and communities for greater resiliency, sustainability, and equality, we can build neighborhoods and communities where residents feel more connected t their homes and to one another. Through text, photographs and illustrations, the book reviews prototypical American housing design, then suggest ways to both learn from the past as well as adapt for new environmental imperatives, demographic changes and lifestyle needs. Written by a practicing architect with 25+ years of experience optimizing residential design, this pioneering approach to suburban building will inspire readers to view mass produced housing through a new, modern lens.

Advances in the Leading Paradigms of Urbanism and their Amalgamation
 Concepts, architectures and implementation
Advanced Studies in Efficient Environmental Design and City Planning
Biophilic and Bioclimatic Architecture
Reordering the Suburbs
Analytical Therapy for the Next Generation of Passive Sustainable Architecture
Health, Safety and Environment

As space ventures have become more numerous, leading scientists and theorists have offered ways of building a living habitat in a hostile environment, taking an ‘ecosystems’ view of space colonization. The contributors to this volume take a radical multi-disciplinary view of the challenge of human space colonization through the ongoing project Persephone. This book fundamentally challenges prevalent ideas about sustainability and proposes a new approach to resource austerity and conservation and providing truly sustainable approaches that are life-promoting. Readers will learn the details of the plans for Persephone – a real project that is part of the company Icarus Interstellar’s plans for the design and engineering of a living interior on a worldship to be constructed in Earth’s orbit within 100 years. Although the timeframe itself is only an estimate, since it is contingent on many significant developments, including funding and technological advances, the industry consensus is that within 100 years we will see manned space exploration beyond our solar system. This notion is shared by organizations such as the Initiative for Interstellar Studies and the DARPA-funded 100-year starship project. This book specifically develops the principles for the construction of a living habitat within a worldship – a multi-generational starship that contains its own world that supports colonists as it travels across great distances between stars at a speed much slower than light. Far from being a sterile industrial setup, such as the ISS, or even being a bucolic suburbia as proposed by Gerard O’Neill in the 1970s, this worldship will provide the pre-conditions for sustaining life beyond Earth’s environment, which may also lead to the evolution of non-terrestrial ecologies. Drawing on the principles of ecopoiesis and insights offered by the Biosphere 2 experiment that demonstrated what we have to learn about ecosystem construction, this book proposes first designing the soils of such a space. It should then be possible to set up the conditions that a first generation of colonists may experience in leaving our solar system to find new worlds to settle - perhaps in spreading life throughout the universe. Although the book takes a unique view of ecology and sustainability within the setting of a traveling starship it is equally concerned with the human experience on artificial worlds. Chapters come from a range of multi disciplinary thinkers who shed light on the brave new future ahead from different angles.

This timely book introduces architects, engineers, builders, and urban planners to a range of contemporary community design concepts and illustrates them with outstanding case studies from around the world. Drawing on successful projects from London, New Mexico, Austria, and the Netherlands, "Innovative Sustainable Communities" presents planning concepts that minimize developments' carbon footprint through compact communities, adaptable and expandable dwellings, edible landscape, and smaller-sized yet quality designed housing.

This book focuses on how to maintain environmental sustainability as one of its main principles, and it addresses how smart cities serve to diminish wastes and maintain natural resources by having clean green energy that is operated by new smart technology designs. Living in a smart city is not something of the future anymore, it is here, and it is being implemented all over the world. A smart city uses different types of electronic Internet of things (IoT) sensors to collect data and then use these data to manage assets and resources efficiently. The smart city concept integrates information and communication technology (ICT), and various physical devices connected to the IoT network to optimize the efficiency of city operations and services and achieve sustainable solutions to allow us to grow with proper management of our resources. Smart sustainable structures and infrastructures face the need of urban areas due to the growth of populations while in the same time save our environment. To achieve this, we need to revisit the conventional methods in design and construction and the conventional materials which are used now to optimize the design and provide smart solutions. In the past few years, the consumption of resources has been massive, and the waste produced from that consumption has been inconceivable. This is causing environmental degradation, which produces many environmental challenges, such as global climate change, excessive fossil fuel dependency and the growing demand for energy. As well as, discussing the challenges facing the civil engineering design and construction of smart cities components and presenting concepts and insight from experts and researchers from different civil engineering disciplines., this book explains how to construct buildings and special structures and how to manage and monitor energy.

This book is a compilation of 10 recently published academic articles addressing sustainable residential landscape design and planning across geographies, scales, and perspectives: from American rain garden design to South Korean urban forestry; from Mexican community open space design to Australian neighborhood park planning; and from Chinese urban design to Bolivian land-use change. This volume brings together authors from a growing community of landscape sustainability scholars of landscape architecture and architecture; planning and construction; ecology and horticulture; agricultural and environmental sciences; and health, exercise, and nutrition. In summary, these papers address facets of a fundamental challenge for the 21st century: the design and planning of sustainable and resilient human settlements.

Perception, Design and Ecology of the Built Environment
 Sustainability Perspectives: Science, Policy and Practice
 Bioclimatic Approaches in Urban and Building Design
 Selected Contributions from the International Conference on Sustainable Vital Technologies in Engineering and Informatics, BUE ACE1 2016, 7-9 November 2016, Cairo, Egypt
 Concepts, Technologies, Examples
 Workflows, Applications, and Trends
 3D Printing Architecture

As culture is becoming increasingly recognised as a crucial element of sustainable development, design competence has emerged as a useful tool in creating a meaningful life within a sustainable mental, cultural and physical environment. Design for a Sustainable Culture explores the relationship between sustainability, culture and the shaping of human surroundings by examining the significance and potential of design as a tool for the creation of sustainable development. Drawing on interdisciplinary case studies and investigations from Europe, North America and India, this book discusses theoretical, methodological and educational aspects of the role of design in relation to human well-being and provides a unique perspective on the interface between design, culture and sustainability. This book will appeal to researchers as well as postgraduate and undergraduate students in design and design literacy, crafts, architecture and environmental planning, but also scholars of sustainability from other disciplines who wish to understand the role and impact of design and culture in sustainable development. ?

This book investigates how architectural design advances as a result of the rapid developments in 3D Printing. As this technology become more powerful, faster and cheaper, novel workflows are becoming available and revolutionizing all stages of the design process, from early spatial concepts, to subsequent project development, advanced manufacturing processes, and integration into functional buildings. Based on a literature review and case studies of ten built projects, the book discusses the implications of the ongoing manufacturing revolution for the field of architecture.

?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 book deals with important issues related to urban housing in South Asia. It analyses various aspects of housing, including spatial and temporal requirements and needs, as well as the challenges of implementing housing projects, such as financial feasibility of estate development projects and housing design. Finally, it discusses the socio-economic and environmental impacts of the rapid urban housing development in South Asia. Written by experts from various disciplines, the book presents several case studies that address issues such as housing provision; legislative, financial and technical support; access to employment opportunities and markets; the cumulative impact on gentrification; exclusion and spatial equity; and the economic, social and environmental sustainability of urban tissue. Researchers, housing planners, and policy makers will find this book a valuable resource in meeting the demand for affordable and sustainable housing and overcoming housing shortages in developing countries

Sustainable Practices: Concepts, Methodologies, Tools, and Applications
 Sustainable Housing
 Energy Efficient Building Design
 Managing Complexity
 Design for a Sustainable Culture
 Selected Papers from the World Renewable Energy Network’s Med Green Forum
 A Living, Self-Sustaining Spaceship

This book provides an up-to-date coverage of green (vegetated) roof research, design, and management from an ecosystem perspective. It reviews, explains, and poses questions about monitoring, substrate, living components and the abiotic, biotic and cultural aspects connecting green roofs to the fields of community, landscape and urban ecology. The work contains examples of green roof venues that demonstrate the focus, level of detail, and techniques needed to understand the structure, function, and impact of these novel ecosystems. Representing a seminal compilation of research and technical knowledge about green roof ecology and how functional attributes can be enhanced, it delves to explore the next wave of evolution in green technology and defines potential paths for technological advancement and research.

"This reference explores some of the most recent developments in sustainability, delving into topics beyond environmental science to cover issues of sustainable economic, political, and social development"--Provided by publisher.

This book emphasizes the important message that architects and structural engineers must strive to ensure that the buildings they design and construct should not be major contributors to climate change. Rather, they should be exploring the use of green materials and building methods - such as timber, wood, and associated materials - in order to safeguard the environment. These sustainable materials are not only environmentally friendly, but they have the added benefit of being easy to manufacture, cost effective, often locally available, and easily replenished. Moreover, it has been demonstrated that wood and timber are viable materials in the construction of a wide variety of building types, including medium and high-rise buildings. The Importance of Wood and Timber in Sustainable Buildings brings together a distinguished group of contributors from different cultures and building traditions to address why now is the time to rethink our construction methods and explore replacing many of the carbon intensive materials that are currently being used with wood and timber.

Since the mid-1980s, and in particular the 1992 environmental summit in Rio de Janeiro, sustainability has become a global issue and the subject of international debate. In the context of architecture sustainability implies the use of intelligent technology, innovative construction methods, ecologically friendly materials and use of environmentally-friendly energy resources. This book begins with an overview of the various approaches and developments in sustainable architecture, followed by an in-depth section on urbanism looking at several European towns. In the third section the technologies, materials and methods of ecological architecture are examined. Concluding the volume are 23 sophisticated and innovative European case studies. The author and architect Dominique Gauzin-Müller has specialised on energy and environmental issues and ecological architecture for over 15 years.

Designing the City of People 4.0
Adult-Gerontology Acute Care Nurse Practitioner Q&A Review
Compact Cities, Eco-Cities, and Data-Driven Smart Cities
Design for Manufacturing and Assembly
A Global View of Theories, Policies and Practice in Sustainable Development
Design and Construction of Smart Cities
Needs, Implementation and Impacts

Over the last few decades, there have been dramatic improvements in the understanding and research of environmental design. Numerous methods have been developed to enhance architectural design in order for it to be more energy efficient, sustainable and health enhancing. This book presents several theories and techniques that can be used to improve how buildings are engineered and designed in order to utilize more sustainable construction methods while promoting the health of the building’s occupants. Contributions to the study of environmental design have come from a diversity of fields including applied mathematics,

optimization, computer science, medical research, psychology, management science, architecture, and engineering. The techniques developed in these areas of research can be used to increase building performance, occupant satisfaction, productivity, and well being, and reducing the incidence of health conditions and chronic diseases related to the use of a designed space. This book provides architectural practitioners, civil engineers as well as other interdisciplinary researchers with the techniques needed to design, implement, and test for sustainability and health promotion in new or existing structures.

This book explains how learning from past mistakes in urban design can help to enhance sustainable cities and how the principles of Green Urbanism can yield more resilient urban settlements. Environmental design is a fundamental principle in shaping cities. However, environmental challenges like increased resource consumption, water degradation and waste-related issues are among the greatest problems now facing humanity - which is why these issues need to be considered with regard to “smart cities,” either for the development of new urban centers or for the transformation of existing cities. The book not only discusses the importance of integrating sustainability principles in the urban design process, but also demonstrates their application to the development of sustainable cities. As such, the book offers essential information and a source of inspiration for all those who want to build more sustainable cities.

This book brings together concepts from the building, environmental, behavioural and health sciences to provide an interdisciplinary understanding of office and workplace design. Today, with changes in the world of work and the relentless surge in technology, offices have emerged as the repositories of organizational symbolism, denoted by the spatial design of offices, physical settings and the built environment (architecture, urban locale). Drawing on Euclidian geometry that quantifies space as the distance between two or more points, a body of knowledge on office buildings, the concept of office and office space, and the interrelationships of spatial and behavioural attributes in office design are elucidated. Building and office work-related illnesses, namely sick building syndrome and ailments arising from the indoor environment, and the menace of musculoskeletal disorders are the alarming manifestations that critically affect employee satisfaction, morale and work outcomes. With a focus on office ergonomics, the book brings the discussion on the fundamentals of work design, with emphasis on computer workstation users. Strategic guidance of lighting systems and visual performance in workplaces are directed for better application of ergonomics and improvement in office indoor environment. It discusses the profiles of bioclimatic, indoor air quality, ventilation intervention, lighting and acoustic characteristics in office buildings. Emphasis has been given to the energy performance of buildings, and contemporary perspectives of building sustainability, such as green office building assessment schemes, and national and international building-related standards and codes. Intended for students and professionals from ergonomics, architecture, interior design, as well as construction engineers, health care professionals, and office planners, the book brings a unified overview of the health, safety and environment issues associated with the design of office buildings.

Print version of the book includes free access to the app (web, iOS, and Android), which offers interactive Q&A review plus the entire text of the print book! Please note the app is included with print purchase only. The only book designed specifically to prepare students for the Adult-Gerontology Acute Care Nurse Practitioner (AG-ACNP) exams, this unparalleled review details the step-by-step journey from classroom to patient room and beyond. This book begins with proven test-taking strategies for students and provides an overview of common pitfalls for exam takers. It features question styles and content material from both the American Association of Critical-Care Nurses (AACN®) and American Nurses Credentialing Center (ANCC) exams, providing an overview of the certification exams written specifically by the certification organizations themselves. With more than 630 unique questions, this review contains completely up-to-date and evidence-based exam preparation. Practice questions are organized into body system review, special populations, and legal/ethical issues, and culminate in a 175-question practice test that represents the length, variety, and complexity of board exam questions. All questions’ answers have accompanying rationales based on clinical practice guidelines. Completely unique to this publication, the last section of Adult-Gerontology Acute Care Nurse Practitioner Q&A Review guides one through the next steps after the exam—how to progress into practice with your new certification. KEY FEATURES Over 630 practice questions with answers and rationales The only current book publication designed specifically to prepare students for the AG-ACNP exams Contains the most current information and practice using published guidelines Exam tips and perils/pitfalls to avoid in test-taking Includes free access to interactive ebook and Q&A app—track and sync your progress on up to three devices!

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Fundamentals of Sustainable Neighbourhoods