

# Sustainable High Rise Building Case Study Three Example

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*Building and Delivering Sustainability Solutions: Insights, Methods, and Case-Studies* - Nathaniel K. Newlands 2019-10-18

Sustaining ecosystems to deliver what people need and value, while mitigating and adapting to global climate change and extreme event impacts, presents a complex set of

environmental, economic, and social challenges in ensuring resilient and sustainable food production. The Climate Smart Landscape (CSL) approach has emerged as an integrated management strategy to address the increasing pressures on agricultural production, ecosystem conservation, rural livelihoods, climate change

mitigation and adaptation. Deploying cheaper, more accurate, and efficient technology enables the harnessing of big data for use in solving sustainability challenges. With improved integrated analytical frameworks, statistical approaches, spatially- explicit models and indices, the CSL approach can be further developed and applied for more resilient, productive, and sustainable ecosystems. This eBook brings together original research, review, hypothesis, theory, and technology report articles, involving 87 authors from 9 countries across Asia, Europe, and North America. These articles present new methodological and technological innovation, findings, and insights across four themes: (1) landscape productivity and crop suitability, (2) variable crop requirements for water and nutrients, (3) crop health status, phenology, and phenotyping, and (4) crop disease assessment and prediction under integrated pest management (IPM).

## **Tall Buildings -**

*Sustainable High Rise Buildings in Urban Zones*  
- Ali Sayigh 2016-12-08

This unique reference gathers numerous new studies examining specific, prominent high-rise buildings around the world. Each nuanced study included undertakes the following pivotal considerations: environmental impacts; safety & social acceptability; energy consumption and comfort; planning contexts within the urban zone; physical footprint and size; services and risks; and a careful assessment of advantages and challenges. Architects and engineers exploring and optimizing sustainable building practices, energy managers, municipal and private project planners, as well as students will find edification and inspiration in the analysis provided by esteemed practitioners and professors within this fascinating volume.

The Tall Buildings Reference Book - David Parker 2013-04-12

As the ever-changing skylines of cities all over the world show, tall buildings are an

increasingly important solution to accommodating growth more sustainably in today's urban areas. Whether it is residential, a workplace or mixed use, the tower is both a statement of intent and the defining image for the new global city. The Tall Buildings Reference Book addresses all the issues of building tall, from the procurement stage through the design and construction process to new technologies and the building's contribution to the urban habitat. A case study section highlights the latest, the most innovative, the greenest and the most inspirational tall buildings being constructed today. A team of over fifty experts in all aspects of building tall have contributed to the making of the Tall Buildings Reference Book, creating an unparalleled source of information and inspiration for architects, engineers and developers.

[The Importance of Wood and Timber in Sustainable Buildings](#) - Ali Sayigh 2021-09-13  
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.

*Automated and Electric Vehicle: Design, Informatics and Sustainability* - Yue Cao  
2022-10-28

This book focuses on the design, informatics, and energy sustainability of automated and electric vehicles. Both principles and engineering practice have been addressed, from design perspectives toward informatics enabled transport service operation including automated valet parking and charging use cases. This is achieved by providing an in-depth study on a number of major topics such as battery management, eco-driving system, telecommunications, transport and charging services, cyber-security, etc. The book benefits researchers, engineers, and graduate students in the fields of the intelligent transport system, telecommunication, cyber-security, and smart grids.

*Environmental Impact Assessment of Buildings* - Wahidul Biswas  
2020-02-05

This Special Issue covers a wide range of areas—including building orientation, service life, use of photocatalytically active structures and PV facades, implications of transportation system, building types (i.e., high rise, multilevel, commercial, residential), life cycle assessment, and structural engineering—that need to be considered in the environmental impact assessment of buildings, and the chapters include case studies across the globe.

Consideration of these strategies would help reduce energy and material consumption, environmental emissions, and waste generation associated with all phases of a building's life cycle. Chapter 1 demonstrates that green star concrete exhibits the same structural properties as conventional concrete in Australia. Chapter 2 showed that the use of TiO<sub>2</sub> as a photocatalyst on the surface of construction materials with a suitable stable binding agent, such as aggregates, would enable building walls to absorb NO<sub>x</sub> from air. This study found that TiO<sub>2</sub>

has the potential to reduce ambient concentrations of NOx from areas where this pollutant becomes concentrated under solar irradiation. Chapter 3 presents the life cycle assessment of architecturally integrated glass-glass photovoltaics in building facades to find the appropriate material composition for a multicolored PV façade offering improved environmental performance. Chapter 4 shows that urban office buildings lacking appropriate orientation experienced indoor overheating. Chapter 5 details four modeling approaches that were implemented to estimate buildings' response towards load shedding. Chapter 6 covers the life cycle GHG emissions of high-rise residential housing block to discover opportunities for environmental improvement. Chapter 7 discusses an LCA framework that took into account variation in the service life of buildings associated with the use of different types of materials. Chapter 8 presents a useful data mining algorithm to conduct life cycle asset

management in residential developments built on transport systems.

### **Sustainable Retrofitting of Commercial Buildings** - Simon Burton 2014-10-03

Whilst sustainability is already an important driver in the new building sector, this book explores how those involved in refurbishment of commercial building are moving this agenda forward. It includes chapters by developers, surveyors, cost consultants, architects, building physicists and other players, on the role they each can play in enabling refurbishment to be commercially, environmentally and socially sustainable. Case studies from northern climates show real examples of different building types, ages and uses and will demonstrate what action has been taken to create more sustainable buildings. The chapters raise and discuss all the relevant issues that need to be considered in retrofitting decision making. Changing standards, planning, process management, financing, technical issues, site organisation,

commissioning and subsequent building management are all considered. The book demonstrates that buildings can be made comfortable to occupy, easy to manage and low in energy demand and environmental impact.

**New Suburbanism: Sustainable Tall Building Development** - Kheir Al-Kodmany  
2016-04-14

Much of the anticipated future growth in the United States will take place in suburbia. The critical challenge is how to accommodate this growth in a sustainable and resilient manner. This book explores the role of suburban tall as a viable, sustainable alternative to continued suburban sprawl. It identifies 10 spatial patterns in which tall buildings have been integrated into the American suburbs. The study concludes that the Tall Building and Transit-Oriented-Development (TB-TOD) model is the most appropriate to promote sustainable suburbanism. The findings are based on analyzing over 300 projects in 24 suburban

communities within three major metropolitan areas including: Washington, DC, Miami, Florida, and Chicago, Illinois. The book furnishes planning strategies that address the social, economic, and environmental aspects of sustainable tall building development. It also discusses sustainable architectural design and site planning strategies and provides case studies of sustainable tall buildings that were successfully integrated into suburban settings.

High-Rise Urban Form and Microclimate - Feng Yang  
2019-12-11

The book comprehensively investigates the relationship between critical urban form and fabric parameters and urban microclimate in the high-rise urban environment that prevails in Asian megacities such as Shanghai. It helps readers gain a deeper understanding of climate-responsive urban design strategies and tactics for effectively mitigating the negative impacts of deteriorating urban thermal environments on pedestrian thermal comfort, outdoor air quality

and building energy consumption. It also reviews the latest advances in urban climate research, with a focus on the challenges in terms of outdoor space comfort, health, and livability posed by the high-rise and high-density development in emerging Asian megacities, and proposes an integrated framework in response to the pressing need for microclimate research. It then presents a series of studies on high-rise residential and non-residential urban neighborhoods and districts based on instrumented field study, validated numerical simulation, and spatial analysis using a GIS platform. The book includes extensive, valuable experimental data presented in a clear and concise manner. The thermal atlas methodology based on empirical modeling and spatial analysis described is a useful climate-responsive design tool for both urban designer and architects. As such, the book is of particular interest to researchers, professionals, and graduate students in the fields of urban planning and

design, building science and urban climatology.  
*Biomimicry in Architecture* - Michael Pawlyn  
2019-08-12

When searching for genuinely sustainable building design and technology - designs that go beyond conventional sustainability to be truly restorative - we often find that nature got there first. Over 3.5 billion years of natural history have evolved innumerable examples of forms, systems, and processes that can be applied to modern green design. For architects, urban designers and product designers, this new edition of *Biomimicry in Architecture* looks to the natural world to achieve radical increases in resource efficiency. Packed with case studies predicting future trends, this edition also contains updated and expanded chapters on structures, materials, waste, water, thermal control and energy, as well as an all-new chapter on light. An amazing sourcebook of extraordinary design solutions, *Biomimicry in Architecture* is a must-read for anyone preparing

for the challenges of building a sustainable and restorative future.

**The Sustainable Tall Building** - Philip Oldfield  
2019-03-27

The Sustainable Tall Building: A Design Primer is an accessible and highly illustrated guide, which primes those involved in the design and research of tall buildings to dramatically improve their performance. Using a mixture of original research and analysis, best-practice design thinking and a detailed look at exemplar case studies, author Philip Oldfield takes the reader through the architectural ideas, engineering strategies and cutting-edge technologies that are available to the tall building design team. The book takes a global perspective, examining high-rise design in different climates, cultures and contexts. It considers common functions such as high-rise housing and offices, to more radical designs such as vertical farming and vertical cemeteries. Innovation is provided by examining not only the

environmental performance of tall buildings but also their social sustainability, guiding the reader through strategies to create successful communities at height. The book starts by critically appraising the sustainability of tall building architecture past and present, before demonstrating innovative ways for future tall buildings to be designed. These include themes such as climatically responsive architecture, siting a tall building in the city, zero-carbon towers, skygardens and community spaces at height, sustainable structural systems and novel façades. In doing so, the book provides essential reading for architects, engineers, consultants, developers, researchers and students engaged with sustainable design and high-rise architecture.

**Industrial Engineering and Operations Management I** - João Reis 2019-04-13

Based on the 2018 International Joint Conference on Industrial Engineering and Operations Management (IJCIEOM) conference

that took place in Lisbon, Portugal, this proceedings volume is the first of two focusing on mathematical applications in digital transformation. The different contributions in this volume explore topics such as modelling, simulation, logistics, innovation, sustainability, health care, supply chain, lean manufacturing, operations management, quality and digital. Written by renowned scientists from around the world, this multidisciplinary volume serves as a reference on industrial engineering and operations management and as a source on current findings for researchers and students aiming to work on industrial-related problems.

**Sustainable Urban Housing in China** - Leon Glicksman 2007-04-22

This book features case studies and recommendations for new approaches to environmentally responsive sustainable building, illuminating many principles of sustainability and energy efficiency applicable to buildings worldwide, and in developing countries in

particular. These projects identify practical technologies, new and existing, that will yield energy-efficient, healthy, and comfortable designs. Individual chapters address ventilation, controls, materials, and daylighting. Design guidelines and organizational methods suited to urban projects are also discussed.

Strategies for Sustainable Architecture - Paola Sassi 2006-09-27

Filling a gap in existing literature on sustainable design, this new guide introduces and illustrates sustainable design principles through detailed case studies of sustainable buildings in Europe, North America and Australia. The guide will provide the reader with a deeper understanding of the design issues involved in delivering sustainable buildings, and giving detailed description of the process of integrating principles into practice. Approximately one hundred case studies of sixty buildings, ranging from small dwellings to large commercial buildings, and drawn from a range of countries,

demonstrate best current practice. The sections of the book are divided into design issues relating to sustainable development, including site and ecology, community and culture, health, materials, energy and water. With over 400 illustrations, this highly visual guide will be an invaluable reference to all those concerned with architecture and sustainability issues.

**Life-Cycle of Engineering Systems:  
Emphasis on Sustainable Civil**

**Infrastructure** - Jaap Bakker 2016-11-18

This volume contains the papers presented at IALCCE2016, the fifth International Symposium on Life-Cycle Civil Engineering (IALCCE2016), to be held in Delft, The Netherlands, October 16-19, 2016. It consists of a book of extended abstracts and a DVD with full papers including the Fazlur R. Khan lecture, keynote lectures, and technical papers from all over the world. All major aspects of life-cycle engineering are addressed, with special focus on structural damage processes, life-cycle design, inspection,

monitoring, assessment, maintenance and rehabilitation, life-cycle cost of structures and infrastructures, life-cycle performance of special structures, and life-cycle oriented computational tools. The aim of the editors is to provide a valuable source for anyone interested in life-cycle of civil infrastructure systems, including students, researchers and practitioners from all areas of engineering and industry.

Trends in Civil Engineering and Challenges for Sustainability - M. C. Narasimhan 2020-09-28

This book comprises selected papers from the International Conference on Civil Engineering Trends and Challenges for Sustainability (CTCS) 2019. The book presents latest research in several areas of civil engineering such as construction and structural engineering, geotechnical engineering, environmental engineering and sustainability, and geographical information systems. With a special emphasis on sustainable development, the book covers case studies and addresses key challenges in

sustainability. The scope of the contents makes the book useful for students, researchers, and professionals interested in sustainable practices in civil engineering.

**Proceedings of the 3rd International Workshop on Design in Civil and Environmental Engineering** - Lotte Bjerregaard Jensen 2014-08-22

**Architecture, Culture, and Spirituality** -

Thomas Barrie 2016-03-09

Architecture has long been understood as a cultural discipline able to articulate the human condition and lift the human spirit, yet the spirituality of architecture is rarely directly addressed in academic scholarship. The seventeen chapters provide a diverse range of perspectives, grouped according to topical themes: Being in the World; Sacred, Secular, and the Contemporary Condition; Symbolic Engagements; Sacred Landscapes; and Spirituality and the Designed Environment. Even

though the authors' approach the subject from a range of disciplines and theoretical positions, all share interests in the need to rediscover, redefine, or reclaim the sacred in everyday experience, scholarly analysis, and design.

**The Future of the City** - Kheir Al-Kodmany 2013

Drawing on the experience of several cities from different parts of the world, this text provides a global perspective on the urbanization phenomenon and tall building development, and examines their underlying logic, design drivers, contextual relationships and pitfalls.

*The Sustainable City XI* - C.A. Brebbia 2016-09-21

Covering the proceedings of the 11th International Conference on Urban Regeneration and Sustainability held in Alicante, Spain, this volume addresses the multidisciplinary aspects of urban planning; a result of the increasing size of cities, the amount of resources and services required and the complexity of modern society.

Most of the earth's population live in cities and the process of urbanisation still continues to generate problems originating from the drift of the population towards them. These problems can be resolved by cities becoming efficient habitats, saving resources in a way that improves the standard of living. The process faces a number of challenges related to reducing pollution and improving main transportation and infrastructure systems. These challenges can contribute to the development of social and economic imbalances and require the development of new solutions. Large cities are probably the most complex mechanisms to manage, nevertheless they represent a productive ground for architects, engineers, city planners, and social and political scientists able to conceive new ideas and time them according to technological advances and human requirements. The Sustainable City XI follows a succession of very successful international conferences and covers the following fields:

Urban planning and design; Urban development and management; Urban conservation and regeneration; The community and the city; Eco-town planning; Landscape planning and design; Environmental management; Sustainable energy and the city; Transportation Quality of life; Socio-economic and political considerations; Cultural quarters and interventions; Waterfront development; Case studies - sustainable practices; Architectural issues; Cultural heritage issues; Appropriate technologies for smart cities; Planning for resilience; Disaster and emergency response; Urban safety and security; Waste management; Urban infrastructure and Urban metabolism.

### **Sustainability in Energy and Buildings 2020**

- John Littlewood 2020-12-07

This book contains the proceedings of the 12th KES International Conference on Sustainability and Energy in Buildings 2020 (SEB20) held in Split, Croatia, during 24-26 June 2020 organized by KES International. SEB20 invited

contributions on a range of topics related to sustainable buildings and explored innovative themes regarding sustainable energy systems. The aim of the conference is to bring together researchers, and government and industry professionals to discuss the future of energy in buildings, neighbourhoods and cities from a theoretical, practical, implementation and simulation perspective. The conference formed an exciting chance to present, interact and learn about the latest research and practical developments on the subject. The conference attracted submissions from around the world. Submissions for the Full-Paper Track were subjected to a blind peer-review process. Only the best of these were selected for presentation at the conference and publication in these proceedings. It is intended that this book provides a useful and informative snapshot of recent research developments in the important and vibrant area of sustainability in energy and buildings.

## **Emerging Technologies for Sustainability -**

P.C Thomas 2020-08-14

The theme of conference is Emerging Technologies for Sustainability. Sustainability tends to be problem driven and oriented towards guiding decision making. The goal is to raise the global standard of living without increasing the use of resources beyond global sustainable levels. The conference is intended to act as a platform for researchers to share and gain knowledge, showcase their research findings and propose new solutions in policy formulation, design, processing and application of green materials, material selection, analysis, green manufacturing, testing and synthesis, thereby contributing to the creation of a more sustainable world.

*The Vertical City* - K. Al-Kodmany 2018-06-25

Each century has its own unique approach toward addressing the problem of high density and the 21st century is no exception. As cities try to cope with rapid population growth -

adding 2.5 billion dwellers by 2050 - and grapple with destructive sprawl, politicians, planners and architects have become increasingly interested in the vertical city paradigm. Unfortunately, cities all over the world are grossly unprepared for integrating tall buildings, as these buildings may aggravate multidimensional sustainability challenges resulting in a “vertical sprawl” that could have worse consequences than “horizontal” sprawl. By using extensive data and numerous illustrations this book provides a comprehensive guide to the successful and sustainable integration of tall buildings into cities. A new crop of skyscrapers that employ passive design strategies, green technologies, energy-saving systems and innovative renewable energy offers significant architectural improvements. At the urban scale, the book argues that planners must integrate tall buildings with efficient mass transit, walkable neighbourhoods, cycling networks, vibrant mixed-use activities, iconic

transit stations, attractive plazas, well-landscaped streets, spacious parks and engaging public art. Particularly, it proposes the Tall Building and Transit Oriented Development (TB-TOD) model as one of the sustainable options for large cities going forward. Building on the work of leaders in the fields of ecological and sustainable design, this book will open readers’ eyes to a wider range of possibilities for utilizing green, resilient, smart, and sustainable features in architecture and urban planning projects. The 20 chapters offer comprehensive reading for all those interested in the planning, design, and construction of sustainable cities.

**The Sustainable City XV** - S. Syngellakis  
2021-12-13

Consisting of presented papers from the 15th International Conference on Urban Regeneration and Sustainability, the included works address various aspects of the urban environment and provide solutions leading towards sustainability. Urban areas result in a series of environmental

challenges varying from the consumption of natural resources and the subsequent generation of waste and pollution, contributing to the development of social and economic imbalances. As cities continue to grow all over the world, these problems tend to become more acute and require the development of new solutions. The challenge of planning sustainable contemporary cities lies in considering the dynamics of urban systems, exchange of energy and matter, and the function and maintenance of ordered structures directly or indirectly supplied and maintained by natural systems. The task of researchers is to improve the capacity to manage human activities, pursuing welfare and prosperity in the urban environment. Any investigation or planning on a city ought to consider the relationships between the parts and their connections with the living world. The dynamics of its networks (flows of energy matter, people, goods, information and other resources) are fundamental for an

understanding of the evolving nature of today's cities. Large cities represent a fertile ground for architects, engineers, city planners, social and political scientists, and other professionals able to conceive new ideas and time them according to technological advances and human requirements. Coastal areas and coastal cities are an important area covered in this volume as they have some specific features. Their strategic location facilitates transportation and the development of related activities, but this requires the existence of large ports, with the corresponding increase in maritime and road traffic and all its inherent negative effects. This requires the development of well-planned and managed urban environments, not only for reasons of efficiency and economics but also to avoid inflicting environmental degradation that causes the deterioration of natural resources, quality of life and human health. These research papers put a focus on sustainability across the multidisciplinary components of urban planning,

the challenges presented by the increasing size of cities, the number of resources required and the complexity of modern society.

**Sustainability, Energy and Architecture** - Ali Sayigh 2013-09-25

This unique volume offers insights from renowned experts in energy efficient building from the world over, providing a multi-faceted overview of the state-of-the-art in energy efficient architecture. It opens by defining what constitutes a sustainable building, suggesting bases for sorely needed benchmarks, then explains the most important techniques and tools available to engineers and architects exploring green building technologies. It covers such pivotal issues as daylighting, LED lighting, integrating renewables such as solar thermal and cooling, retrofitting, LEED and similar certification efforts, passive houses, net-zero and close-zero structures, water recycling, and much more. Highlighting best practices for commercial buildings and private homes, in

widely varied climates and within vastly different socio-economic contexts, this illustrated reference will guide architects and engineers in making sustainable choices in building materials and methods. Explains the best methods and materials to support energy efficient building Features case studies by experts from a dozen countries, demonstrating how sustainable architecture can be achieved in varied climates and economies Covers both new constructions and retrofitting of existing structures

*Designing High-Density Cities* - Edward Ng 2009-12-16

Compact living is sustainable living. High-density cities can support closer amenities, encourage reduced trip lengths and the use of public transport and therefore reduce transport energy costs and carbon emissions. High-density planning also helps to control the spread of urban suburbs into open lands, improves efficiency in urban infrastructure and services,

and results in environmental improvements that support higher quality of life in cities. Encouraging, even requiring, higher density urban development is a major policy and a central principle of growth management programmes used by planners around the world. However, such density creates design challenges and problems. A collection of experts in each of the related architectural and planning areas examines these environmental and social issues, and argues that high-density cities are a sustainable solution. It will be essential reading for anyone with an interest in sustainable urban development.

*Smart Technologies and Design For Healthy Built Environments* - Ming Hu 2020-09-10

Smart Technologies and Design for Healthy Built Environment connects smart technology to a healthy built environment that builds upon the sustainable building movement. It provides an overall summary of the state-of-the-art technologies that are applied in the built

environment. The book covers a broad spectrum of smart technology categories ranging from dynamic operability, energy efficiency, self-regulating and self-learning systems, and responsive systems. The foreseeable challenges that are associated with smart technologies are discussed and outlined in the book. Firstly, this book provides a snapshot of state-of-the-art smart technologies being applied in the built environment. It covers a broad spectrum of smart technology categories, ranging from dynamic operability, energy efficiency, self-regulating and self-learning systems, to responsive systems. Secondly, this book provides in-depth analysis of the four primary components of health (biological, physical, physiological and psychological); their effects on wellbeing and cognitive performance are introduced as well. Thirdly, it connects smart technologies to those health-influencing factors by reviewing three completed smart building projects. This book can also serve as a basis for

education and discussion among professionals and students of diverse backgrounds who are interested in smart technologies, smart building, and healthy building. Smart Technologies and Design for Healthy Built Environment serves as the basis for education and discussions among professionals and students who are interested in smart technologies, smart building and healthy building, as it bridges the gap between smart technologies and a healthy built environment. The book also provides a foundation for anyone who is interested in the impact of smart technology on the health of built environment.

*Design in Modular Construction* - Mark Lawson  
2014-02-24

Modular construction can dramatically improve efficiency in construction, through factory production of pre-engineered building units and their delivery to the site either as entire buildings or as substantial elements. The required technology and application are developing rapidly, but design is still in its

infancy. Good design requires a knowledge of modular production, installation and interface issues and also an understanding of the economics and client-related benefits which influence design decisions. Looking at eight recent projects, along with background information, this guide gives you coverage of: generic types of module and their application vertical loading, stability and robustness dimensional and spacial planning hybrid construction cladding, services and building physics fire safety and thermal and acoustic performance logistical aspects - such as transport, tolerances and safe installation. A valuable guide for professionals and a thorough introduction for advanced students.

*Scientific Feng Shui for the Built Environment* - Michael Y. MAK 2015-03-11

Feng Shui is not all about tradition. The integration and harmony between the natural and built environments concerning modern architecture has long been discussed in Feng

Shui, or more academically, Kan Yu. Based on Scientific Feng Shui for the Built Environment: Fundamentals and Case Studies published in 2011, this enhanced new edition has further taken into account the enhancements and new inputs in theories and applications. Emphasis is placed on two themes, sustainability and science. New case studies regarding sustainable design as viewed from a Feng Shui perspective, and integrated applications of different architectural models and their associations with Feng Shui concepts are added and elaborated. On science, other than exploring the new development of particle physics in relation to Feng Shui studies, a totally new approach to numerology and Luo Shu study based on modern linear algebra may bring readers new insight into the possibility of researching Feng Shui mathematically, in addition to the use of spherical trigonometry. This book offers a remarkable in-depth view of Feng Shui by integrating the historical theories with scientific

explorations and examples of applications. It once again demonstrates that Feng Shui can be studied scientifically, and eventually scientific Feng Shui may become a new field of science in the academic world as well as a professional and orthodox discipline of architectural design for the built environment. Published by City University of Hong Kong Press. □□□□□□□□□□  
**Designing Cooler Cities** - Ali Cheshmehzangi  
2017-11-27

This edited book surveys the major sustainability challenges facing Asian cities, in particular those related to urban energy and city cooling. The book discusses the key concepts and issues involved, addressing the three levels of micro (individual buildings), meso (neighbourhoods/districts) and macro (whole or large parts of cities). It illustrates different paradigms of urban development and explores how to create cooler cities by applying integrated sustainable design and planning on all three levels, bridging the gap between

specialist approaches by highlighting both built projects, processes, and research. It also raises questions about prevalent paradigms of urban development as well as topics relating to urban district cooling solutions, sustainable construction materials, and processes towards effective delivery of sustainable cities. Providing cutting edge insights into hot climate cities in Asia, this text is also pertinent for the study of cities in other world regions, notably in developing countries, and of broad relevance to sustainable urban planning in all contexts.

Sensors and Instrumentation, Aircraft/Aerospace, Energy Harvesting & Dynamic Environments Testing, Volume 7 - Chad Walber 2020-09-29

Sensors and Instrumentation, Aircraft/Aerospace and Energy Harvesting, Volume 7: Proceedings of the 38th IMAC, A Conference and Exposition on Structural Dynamics, 2020, the seventh volume of eight from the Conference brings together contributions to this important area of

research and engineering. The collection presents early findings and case studies on fundamental and applied aspects of Shock & Vibration, Aircraft/Aerospace, Energy Harvesting & Dynamic Environments Testing including papers on: Alternative Sensing & Acquisition Active Controls Instrumentation Aircraft/Aerospace & Aerospace Testing Techniques Energy Harvesting  
**Structural & Construction Conf** - Franco Bontempi 2003-01-01

Objective of conference is to define knowledge and technologies needed to design and develop project processes and to produce high-quality, competitive, environment- and consumer-friendly structures and constructed facilities.

This goal is clearly related to the development and (re)-use of quality materials, to excellence in construction management and to reliable measurement and testing methods.

**High-Rise Living in Asian Cities** - Belinda Yuen 2011-02-02

This book is intended to fill a knowledge gap in the study of contemporary high-rise living. While there has been much documentation on the engineering and technological aspects of tall buildings, relatively little has been written about the social and livability of high-rise. Much less is written about Asian cities even though Asia is the current hotbed of high-rise development. Even though traditional discourse of high-rise housing is not always positive, new forces are redefining its place in 21st century urbanity. Many cities around the world are reembracing high-rise in urban agenda under current narrative of sustainable development. High-rise is fast becoming a priority area in international research agenda. The quest is for livable and sustainable high-rise development. Against the background of current trends--globalization, urbanization, mixed-use development, and new-built taller buildings in inner city areas in both developed and developing countries, this book examines the software: design, economics,

estate management, legal and property rights, physical environment, planning, community development, and social dimensions of high-rise living. Analysis is with the widely acclaimed successful high-rise public housing in Hong Kong and Singapore to understand the advantages and worries of high-rise living, and to distill the key points and lessons in the making of a 'good' highrise living environment. Hong Kong and Singapore have been constructing high-rise for more than four decades each. The majority of their population has moved to live in high-rise, selecting to live high-rise, and registering consistently high residential satisfaction. The height of apartment buildings in both cities continues to rise. The tallest is anticipated to be 70-storey. It is the contention of this book that contrary to earlier common negative discourses on public high-rise living, the high-rise environment may yet offer urban residents a satisfying dwelling experience. Leading housing academics, researchers and

practitioners in the two cities have contributed to this book. This book presents a timely contribution to our understanding of a widening urban phenomenon that will affect a growing number of the world's population.

*Guide to Natural Ventilation in High Rise Office Buildings* - Antony Wood 2013

This guide sets out recommendations for every phase of the planning, construction and operation of natural ventilation systems in these buildings, including local climatic factors that need to be taken into account, how to plan for seasonal variations in weather, and the risks in adopting different implementation strategies. All of the recommendations are based on analysis of the research findings from richly-illustrated international case studies. This is the first technical guide from the Council on Tall Buildings and Urban Habitat's Tall Buildings & Sustainability Working Group looking in depth at a key element in the creation of tall buildings with a much-reduced environmental impact,

while taking the industry closer to an appreciation of what constitutes a sustainable tall building, and what factors affect the sustainability threshold for tall.

**Architecture & Sustainable Development (vol.2)** - Magali Bodart 2011-07

This book of Proceedings presents the latest thinking and research in the rapidly evolving world of architecture and sustainable development through 255 selected papers by authors coming from over 60 countries.

Downtown High-Rise Vs. Suburban Low-Rise Living - Peng Du 2017-10-30

It is widely assumed that the 'dense vertical city' is more sustainable than the 'dispersed horizontal city.' This concept has certainly been a large factor in the unprecedented increase in the construction of tall buildings globally over the last few decades, especially in the developing world. The concentration of people in denser cities 'sharing space, infrastructure, and facilities' is typically thought to offer much

greater energy efficiency than the expanded horizontal city, which requires more land use, as well as a higher energy expenditure in infrastructure and mobility. Though this belief in the sustainability benefits of 'dense' versus 'dispersed' living is driving the development of cities worldwide, the principle has rarely been examined at a detailed, quantitative level. Studies to date have been mostly based on large data sets of generalized data regarding urban-scale energy consumption, or large-scale transport patterns. Crucially, there are very few studies that also consider a 'quality of life' aspect to urban vs. suburban living, in addition to differences in energy use patterns. Chicago, subject city of the research, is uniquely positioned for a study exploring density vs. sprawl from a sustainability point of view. The birthplace of, and center for innovation in tall buildings, Chicago also has an ever-growing suburban area that is typical of most US cities. And yet, again in line with many other cities

around the world over the past decade or two, it has seen suburban growth alongside densification of its downtown area and a resurgence of people seeking high-rise urban living. This research report offers a quantitative evaluation of long-held assumptions, and with sometimes surprising results. The groundbreaking study quantitatively investigates and compares the sustainability of people's lifestyles in both urban and suburban areas from environmental and social perspectives, using detailed information directly collected from households and best available data from public resources. It fills significant research gaps in our knowledge of the sustainability of urban density compared to suburban sprawl. This is an indispensable resource for policy makers, developers, urban planners, architects, utilities, and anyone else with a stake in shaping the future of the built environment.

**Advances in Environment Engineering and Management** - Nihal Anwar Siddiqui

2021-09-02

This book presents the proceedings of the First National Conference on “Sustainable Management of Environment & Natural Resource through Innovation in Science and Technology” (SMTST2020). The book highlights the latest development and innovations in the fields of sustainability, natural resource management, ecology and its environmental fields, geosciences and geology, atmospheric sciences, sustainability, climate change, and extreme weather, global warming, and global change, the effect of climate change on the ecosystem, environment, and pollution, as well as putting a strong emphasis on the multidisciplinary studies.

### **Quality Function Deployment for Buildable and Sustainable Construction -**

Singhaputtangkul Natee 2015-10-16

This book focuses on the implementation of Quality Function Deployment (QFD) in the construction industry as a tool to help building

designers arrive at optimal decisions for external envelope systems with sustainable and buildable design goals. In particular, the book integrates special features into the conventional QFD tool to enhance its performance. These features include a fuzzy multi-criteria decision-making method, fuzzy consensus scheme, and Knowledge Management System (KMS). This integration results in a more robust decision support tool, known as the Knowledge-based Decision Support System QFD (KBDSS-QFD) tool. As an example, the KBDSS-QFD tool is used for the assessment of building envelope materials and designs for high-rise residential buildings in Singapore in the early design stage. The book provides the reader with a conceptual framework for understanding the development of the KBDSS-QFD tool. The framework is presented in a generalized form in order to benefit building professionals, decision makers, analysts, academics and researchers, who can use the findings as guiding principles to achieve

optimal solutions and boost efficiency.

**Green Walls in High-Rise Buildings** - Antony

Wood, Payam Bahrami & Daniel Safarik

2014-08-29

The Council on Tall Buildings and Urban Habitat has produced four Technical Guides to date, since the series launched in late 2012. Each of these guides is the product of a CTBUH Working Group—committees formed specifically to address focused topical subjects in the industry. The intention of each guide is the same—to provide working knowledge to the typical building owner or professional who wants a better understanding of available options for improving tall buildings, and what affects their

design. The object of the series is to provide a tool-kit for the creation of better-performing tall buildings, and to spread the understanding of the considerations that need to be made in designing tall. This technical guide offers an extensive overview of the use of vertical vegetation in high-rise buildings, an indepth analysis of green walls, definitions and typology, including standards, policies and incentives. It features comprehensive case studies, along with architectural theories of the public and private benefits of green walls. The book delves into architect-design considerations and limitations, the effects of green walls on energy efficiencies and includes recommendations and future research.