

Environmental Infrastructure Management Volume 37 Nato Science Partnership Subseries 2

Waste Management and the Environment VIII contains papers present at the 8th International Conference on Waste Management and the Environment, organised every two years by the Wessex Institute. The contents were contributed by professionals, researchers, government departments and local authorities and cover the current situation of waste management. Waste Management is one of the key problems of modern society due to the ever-expanding volume and complexity of discarded domestic and industrial waste. There is a need to establish better practices and safer solutions for waste disposal. This requires further investigation into disposal methods and recycling, as well as new technologies to monitor waste disposal sites, clean technologies, waste monitoring, public and corporate awareness and general education. Unfortunately many of the policies adopted in the past were aimed at short-term solutions without regard to the long-term implications on health and the environment, leading in many cases to the need to take difficult and expensive remedial action. The development of sustainable strategies is the preferred trend for Waste Management. The approach which has emerged as the most promising has been called 4Rs, where reduction, reuse, recycling and recovery (including the sale of waste as Secondary Raw Materials (SRM) and of Refuse Derived Fuel (RDF)) are seen as the best actions. This largely decreases the volume of waste that needs final disposal. Contents cover such topics as: Environmental impact; Reduce, reuse, recycle and recovery (4Rs); Waste incineration and gasification; Energy from waste; Industrial waste management; Hazardous waste; Agricultural waste; Wastewater; eWaste; Landfill optimisation and mining; Remote sensing; Thermal treatment; Emergent pollutants; Environmental remediation; Direct and indirect pre-treatment of MSW; Disposal of high-level radioactive waste; Legislation; Behavioural issues.

In Indian context.

More than half the world's population now lives in cities. Creating sustainable, healthy and aesthetic urban environments is therefore a major policy goal and research agenda. This comprehensive handbook provides a global overview of the state of the art and science of urban forestry. It describes the multiple roles and benefits of urban green areas in general and the specific role of trees, including for issues such as air quality, human well-being and stormwater management. It reviews the various stresses experienced by trees in cities and tolerance mechanisms, as well as cultural techniques for either pre-conditioning or alleviating stress after planting. It sets out sound planning, design, species selection, establishment and management of urban trees. It shows that close interactions with the local urban communities who benefit from trees are key to success. By drawing upon international state-of-art knowledge on arboriculture and urban forestry, the book provides a definitive overview of the field and is an essential reference text for students, researchers and practitioners.

This book addresses the theme of the impacts of global warming on different specific fields, ranging from the regional and global economy, to agriculture, human health, urban areas, land vegetation, marine areas and mangroves. Despite the volume of scientific work that has been undertaken in relation to each of each of these issues, the study of the impacts of global warming upon them is a relatively recent and unexplored topic. The chapters of this book offer a broad overview of potential applications of global warming science. As this science continues to evolve, confirm and reject study hypotheses, it is hoped that this book will stimulate further developments in relation to the impacts of changes in the global climate.

The purpose of this book is to present an overview of the latest research, policy, practitioner, academic and international thinking on water security—an issue that, like water governance a few years ago, has developed much policy awareness and momentum with a wide range of stakeholders. As a concept it is open to multiple interpretations, and the authors here set out the various approaches to the topic from different perspectives. Key themes addressed include: Water security as a foreign policy issue The interconnected variables of water, food, and human security Dimensions other than military and international relations concerns around water security Water security theory and methods, tools and audits. The book is loosely based on a masters level degree plus a short professional course on water security both given at the University of East Anglia, delivered by international authorities on their subjects. It should serve as an introductory textbook as well as be of value to professionals, NGOs, and policy-makers.

Today's most pressing challenges require behaviour change at many levels, from the city to the individual. This book focuses on the collective influences that can be seen to shape change. Exploring the underlying dimensions of behaviour change in terms of consumption, media, social innovation and urban systems, the essays in this book are from many disciplines, including architecture, urban design, industrial design and engineering, sociology, psychology, cultural studies, waste management and public policy. Aimed especially at designers and architects, *Motivating Change* explores the diversity of current approaches to change, and the multiple ways in which behaviour can be understood as an enactment of values and beliefs, standards and habitual practices in daily life, and more broadly in the urban environment.

The special focus of these proceedings is on the areas of infrastructure engineering and sustainability management. They provide detailed information on innovative research developments in construction materials and structures, in addition to a compilation of interdisciplinary findings combining nano-materials and engineering. The coverage of cutting-edge infrastructure and sustainability issues in engineering includes earthquakes, bioremediation, synergistic management, timber engineering, flood management and intelligent transport systems.

Ports and cities are historically strongly linked, but the link between port and city growth has become weaker. This book examines how ports can regain their role as drivers of urban economic growth and how negative port impacts can be mitigated.

Given the great impacts associated with the construction and maintenance of infrastructures in both the environmental, the economic and the social dimensions, a sustainable approach to their design appears essential to ease the fulfilment of the Sustainable Development Goals set by the United Nations. Multicriteria decision-making methods are usually applied to address the complex and often conflicting criteria that characterise sustainability. *e present study aims to review the current state of the art regarding the application of such techniques in the sustainability assessment of infrastructures, analysing as well the sustainability impacts and criteria included in the assessments. Analytic Hierarchy Process is the most frequently used weighting technique. Simple Additive Weighting has turned out to be the most applied decision-making method to assess the weighted criteria. Although a life cycle assessment approach is recurrently used to evaluate sustainability, standardised concepts, such as cost discounting, or presentation of the assumed functional unit or system boundaries, as required by ISO 14040, are still only marginally used. Additionally, a need for further research in the inclusion of fuzziness in the handling of linguistic variables is identified.

Environmental issues continue to burden governments and economies throughout the post-communist countries of Central and Eastern Europe and the newly independent states

of the former Soviet Union. Severe environmental degradation is endemic to the region, the existing environmental infrastructure is often inadequate, significant new investment is perhaps decades away, and there is little knowledge of advanced techniques for impact assessment, project evaluation, and project financing. The first two papers of Environmental Infrastructure Management survey available cost-effective technology for solid waste treatment and air pollution control, providing guidance for possible incremental additions to existing infrastructure. There is also a discussion of transferable pollution credits as an instrument in regulating air quality. The discussion of economic incentives also embraces user fees and other pollution control instruments. A range of methods is presented for the evaluation and comparison of alternative projects where data are poor or scarce. Canadian experience with specific capital budgeting techniques is given comprehensive attention. Debt financing strategies are addressed in the context of present-day Ukraine. Finally, an outline is given of a general framework for making decisions about environmental projects, including the use of environmental impact assessments.

Environmental Infrastructure in African History offers a new approach for analyzing and narrating environmental change. Environmental change conventionally is understood as occurring in a linear fashion, moving from a state of more nature to a state of less nature and more culture. In this model, non-Western and premodern societies live off natural resources, whereas more modern societies rely on artifact, or nature that is transformed and domesticated through science and technology into culture. In contrast, Emmanuel Kreike argues that both non-Western and premodern societies inhabit a dynamic middle ground between nature and culture. He asserts that humans- in collaboration with plants, animals, and other animate and inanimate forces - create environmental infrastructure that constantly is remade and reimagined in the face of ongoing processes of change. Integrated urban water management relies on data allowing us to analyse, understand and predict the behaviour of the individual water cycle components and their interactions. The concomitant monitoring of the complex of urban water system elements makes it possible to grasp the entirety of relations among the various components of the urban water cycle and so develop a holistic approach to solving urban water problems. Data Requirements for Integrated Urban Water Managements - issuing from UNESCO's International Hydrological Programme project on this topic - is geared towards improving integrated urban water management by providing guidance on the collection, validation, storage, assessment and utilization of the relevant data. The first part of this volume describes general principles for developing a monitoring programme in support of sustainable urban water management. The second part examines in detail the monitoring of individual water cycle components. Two case studies in the final part illustrating attempts to deliver an integrated monitoring system help demonstrate the fundamental principles of sustainable urban water management elaborated here.

Environmental concerns have pushed the decarbonisation of the European economy high on the EU political agenda. This has renewed old debates about the role of nuclear energy in the European economy and society that gravitate around the issues of nuclear safety and radioactive waste management (RWM). RWM carries many elements of technical complexity, scientific uncertainty and social value, which makes policy decisions highly controversial. Public participation is usually believed to improve these decisions, ease their implementation by solving substantial conflicts, and enhance trust and social acceptance. Drawing upon sources including Euratom and the OECD Nuclear Energy Agency, the author offers a detailed overview of public involvement in RWM in the EU, analysing the implementation of national policies through official programmes and the views of stakeholders from all Member States. This book highlights the key successes and challenges in the quest for greater participation in RWM, and extrapolates insights for other contested energy infrastructures and controversies in land use. This book will be of great relevance to students, scholars and practitioners with an interest in radioactive waste management, energy policy, and EU environmental politics and policy.

Infrastructure Risk Assessment & Management contains selected papers presented at both the 10th International Conference on Computer Simulation in Risk Analysis and Hazard Mitigation and the 14th International Conference on Structures under Shock and Impact, organized by the Wessex Institute. The papers cover a variety of topics, including impact and blast loading, response of buildings and other structures to blast and their dynamic behaviour. These are all areas of active research and general interest, focused on the survivability of physical facilities and the protection of people. It contains a series of research contributions, essential to deepen the knowledge of how structures and materials behave under a wide variety of dynamic load actions. Current events emphasise the importance of the analysis and management of risk to planners, civil authorities, law enforcement agencies, non-governmental organisations, information technology experts and many other researchers and practitioners throughout the world. This volume brings together the work of researchers and other professionals actively involved in finding new ways to cope with the increased demands for a more effective control of impact and blast effects as well as risk management and control.

This title was first published in 2001. Management of the employment relationship changed markedly in the last two decades of the 21st century, and a major part of this has been the extension of employee involvement and participation in the workplace. Modern management theorists and researchers have commonly emphasized the importance of two-way communication and co-operation between management and labour in determining the success of human resource management (HRM) strategy and in maximizing workplace efficiency. Some researchers argue employee participation and empowerment are progressive management practices which have universal benefits to performance enhancement, as opposed to most other HRM practices whose success is contingent upon the organizational context. This title explores these themes through an international collection of case studies, which are the outcome of a comparative project of the Workers' Participation Study Group of the International Industrial Relations Association (IIRA).

Green infrastructure integrates human and natural systems through a network of corridors and spaces in mixed-use and urban settings. Austin takes a broad look at green infrastructure concepts, research and case studies to provide the student and professional with processes, criteria and data to support planning, design and implementation. Key topics of the book include: The benefits of green infrastructure

as a conservation and planning tool Requirements of ecosystem health Green infrastructure ecosystem services that contribute to human physical and psychological health Planning processes leading to robust green infrastructure networks Design of green infrastructure elements for multiple uses. The concept of ecosystem services is extensively developed in this book, including biological treatment of stormwater and wastewater, opportunities for recreation, urban agriculture and emersion in a naturalistic setting. It defines planning and design processes as well as the political and economic facets of envisioning, funding and implementing green infrastructure networks. The book differs from others on the market by presenting the technical issues, requirements and performance of green infrastructure elements, along with the more traditional recreation and wildlife needs associated with greenway planning, providing information derived from environmental engineering to guide planners and landscape architects.

Achieving urban sustainability is amongst the most pressing issues facing planners and governments. This book is the first to provide a cohesive analysis of sustainable urban development and to examine the processes by which change in how urban areas are built can be achieved. The author looks at how sustainable urban development can be delivered on the ground through a comprehensive analysis of the different modes of governing for new urban development. Governing for Sustainable Urban Development: considers a range of policy tools that influence urban development and that constitute different modes of governing provides an innovative conceptual emphasis on learning within governing processes draws on a wide range of existing research, policy and literature together with case study material focussing on London is above all concerned with demonstrating how sustainable urban development can be delivered in practice. This title be essential reading for students, academics and professionals in planning, urban design and architecture world-wide working to achieve sustainability.

Human Settlement Development is a component of Encyclopedia of Institutional and Infrastructural Resources in the global Encyclopedia of Life Support Systems (EOLSS), which is an integrated compendium of twenty one Encyclopedias. The Theme on Human Settlement Development deals, in nine parts and four volumes , with a myriad of issues of great relevance to our world such as: Urban Sustainability and the Regional City System in the Asia Pacific; Peri-Urbanization: Zones of Rural - Urban Transition; Urban Sustainability: Theoretical Perspectives on Integrating Economic Development and the Environment; Rural Sustainability; Using Foreign Direct Investment to Improve Urban Environmental Infrastructure and Services- The Case of Hanoi, Vietnam; The Long Road Towards Sustainable Cities: The Dutch case; Urban Dimensions of Sustainable Development; Rural Development: Participation and Diversity for Sustainability; The Cities, the State and the Markets: In Search of Sustainability These four volumes are aimed at the following five major target audiences: University and College students Educators, Professional practitioners, Research personnel and Policy analysts, managers, and decision makers and NGOs.

In a fast moving world the transportation of goods is expected to be more efficient than ever before. This compendia features papers that address key themes in green logistics such as benchmarking and energy efficiency and includes highly cited papers from international contributors such as Alan McKinnon and Joseph Sarkis.

First Published in 2010. Routledge is an imprint of Taylor & Francis, an informa company.

Designing for Zero Waste is a timely, topical and necessary publication. Materials and resources are being depleted at an accelerating speed and rising consumption trends across the globe have placed material efficiency, waste reduction and recycling at the centre of many government policy agendas, giving them an unprecedented urgency. While there has been a considerable literature addressing consumption and waste reduction from different disciplinary perspectives, the complex nature of the problem requires an increasing degree of interdisciplinarity. Resource recovery and the optimisation of material flow can only be achieved alongside and through behaviour change to reduce the creation of material waste and wasteful consumption. This book aims to develop a more robust understanding of the links between lifestyle, consumption, technologies and urban development.

This book explores recent developments in environmental cost-benefit analysis (CBA). This is defined as the application of CBA to projects or policies that have the deliberate aim of environmental improvement or are actions that affect, in some way, the natural environment as an indirect consequence

Planning is central to economic, social and environmental life but its practice is frequently criticised by all who engage in it. Seen as too restrictive by those who promote development and too weak by those opposing it, planners who advise on proposals cannot sit on the fence. Is it the planning system that is problematic or is it the planners who work within it? This valuable book examines these issues at the continuing professional development level and discusses the ways in which management theories, tools and techniques can be applied to planning practice and used by all who engage in it. Written by an experienced author and widely respected academic, the book includes case studies and question and answer sections, and will be valuable through both initial and continuous professional education, helping candidates prepare for examinations and subsequent management.

The idea that nature provides services to people is one of the most powerful concepts to have emerged over the last two decades. It is shaping our understanding of the role that biodiverse ecosystems play in the environment and their benefits for humankind. As a result, there is a growing interest in operational and methodological issues surrounding ecosystem services amongst environmental managers, and many institutions are now developing teaching programmes to equip the next generation with the skills needed to apply the concepts more effectively. This handbook provides a comprehensive reference text on ecosystem services, integrating natural and social science (including economics). Collectively the chapters, written by the world's leading authorities, demonstrate the importance of biodiversity for people, policy and practice. They also show how the value of ecosystems to society can be expressed in monetary and non-monetary terms, so that the environment can be better taken into account in decision making. The significance of the ecosystem service paradigm is that it helps us redefine and better communicate the relationships between people and nature. It is shown how these are essential to resolving challenges such as sustainable development and poverty reduction, and the creation of a green economy in developing and developed world contexts.

The interplay between smart urban technologies and city development is a relatively uncharted territory. Technology and the City aims to fill that gap, exploring the growing importance of smart technologies and systems in contemporary cities, and providing an in-depth understanding of both theoretical and practical aspects of smart urban technology adoption, and its implications for our cities. Beginning with an elaboration of the historical significance of technologies in economic growth, social progress and urban development, Yigitcanlar introduces the most prominent smart urban information technologies. The book showcases significant smart city practices from across the globe that uses smart urban technologies and systems most effectively. It explores the role of these technologies and asks how they can be adopted into the planning, development and management processes of cities for sustainable urban futures. This pioneering volume contributes to the conceptualisation and practice of smart technology and system adoption in our cities by disseminating both conceptual and empirical research findings with real-world best practice applications. With a multidisciplinary approach to themes of technology and urban development, this book is a key reference source for scholars, practitioners, consultants, city officials, policymakers and urban technology enthusiasts.

This report presents the findings from an examination of public agency practices (federal, state, and local) in analyzing and reporting deferred maintenance on their facilities, such as roads, bridges, buildings, water or sewer systems, etc. The study team examined existing literature (the results of which are presented in detail in a separate report), and followed up on a small number of past and active Federal,

state, and local agency efforts (including field visits to review the activities in New York City and San Jose, California). The study revealed a highly limited amount of either literature or actual ongoing efforts by public agencies directly addressed to the analysis and reporting of deferred maintenance. A consensus appears to exist that "deferred maintenance" should be defined to mean that maintenance and repair needed to bring current assets up to at least a minimum-acceptable physical condition level. Improvements in the asset's capacity or its capability over the original intent for the assets should not be included. Deferred maintenance is usually expressed in reports as the cost to bring assets back to an acceptable physical condition. The needed repairs can include costs that are considered to be capital costs. That is, costs are not limited to only those funded out of operating budget appropriations. The literature and field interviews make a strong case for reporting annually the amount of deferred maintenance. Such information is needed for proper stewardship of public assets and can provide needed information to public officials to help them make more informed judgments as to the allocation of scarce public resources.

What a company offers its customers has to fulfil several different needs, desires, constraints, which can originate from multiple different sources that affect the offering throughout its life cycle. All these criteria have to come together and be translated into statements that can support the designer's understanding of the offering's purpose. This translation is done through a requirements development process to provide a controlled process to define statements that describe what the offering is supposed to fulfil. This research provides insights on key challenges and success factors in requirements development to support the design of effective and resource-efficient offerings. Namely, it identifies crucial sources and aspects to be considered, and a requirements development process demonstrating how to overcome identified challenges. By getting the requirements right from the beginning, sub-optimisation and unnecessary time and risks can be avoided. The consideration of accurate sources and aspects is considered to be one of the most important factors for the successful design of offerings. It is also in the earliest phases of design, that is to say requirements development, where one has the greatest possibility to affect the environmental impact of the offering. What is missing, however, is sufficient and appropriate support in industry on how to do so. The gap between the three areas of effectiveness and resource efficiency, design of integrated offerings, and requirements development has been investigated. Results are based on findings in the literature and in industry, identified primarily by qualitative studies. In the research, 15 different companies have been included through a number of interviews and discussions. Key sources and aspects to consider in the requirements development process are identified along with challenges, and success factors that can be utilised to overcome the identified challenges. This research's final results include an adapted requirements development process that considers the earlier-mentioned sources and aspect, challenges, and success factors. Such a requirements development process should support the design of effective and resource-efficient offerings. This book explores two combined approaches (strategy and accounting) from a cross-disciplinary perspective in order to improve knowledge of value creation in various contexts. Existing studies on this topic have generally adopted a purely account-based or strategy-oriented approach to address this issue. However, this book draws upon a number of well-defined theoretical and empirical backgrounds and methodologies. Since the 1980s, many changes have occurred and companies have increasingly focused their strategies on value creation. Consequently, new strategic directions have emerged, especially for managerial accounting. Management accounting and alignment with strategy could thus improve performance. This book encourages further thought and reflection on these issues which should be pursued in the future as firms face new challenges associated with the acceleration of digital transformation.

The third volume in the Health Information set, *New Territories in Health* focuses on the multifaceted spheres of influence or territories in the field of health. This book includes nine contributions – based on the analysis of stakeholder logics – that approach the relationships between health and territories. The authors – all specialists – offer original insights, enhanced by in-depth studies, on the multiple forms that this territorialization takes: political and institutional, professional and organizational, public and media.

The global construction sector is infamous for high levels of injuries, accidents and fatalities, and poor health and well-being of its workforce. While this record appears in both developed and developing countries, the situation is worse in developing countries, where major spending on infrastructure development is expected. There is an urgent need to improve construction health and safety (H&S) in developing countries. The improvement calls for the development of context-specific solutions underpinned by research into challenges and related solutions. This edited volume advances the current understanding of construction H&S in developing countries by revealing context-specific issues and challenges that have hitherto not been well explored in the literature, and applying emergent H&S management approaches and practices in developing countries. Coverage includes countries from the regions of sub-Saharan Africa, Latin America, Asia and Europe. This book, which is the first compendium of research into construction H&S issues in developing countries, adds considerable insight into the field and presents innovative solutions to help address poor H&S in construction in developing nations. It is a must read for all construction professionals, researchers and practitioners interested in construction and occupational H&S, safety management, engineering management and development studies.

An overriding value of European legislation on waste management is the Extended Producer Responsibility (EPR) principle. For example, all economic operators placing packaging onto the EU market are responsible for its proper management and recovery. However, in general, the collection and treatment of urban waste is the responsibility of local authorities. It has therefore been necessary to establish a system of financial compensations between producers and waste management operators. Analysing the legal and institutional schemes of several member states and accounting for all the costs and benefits to their local authorities due to selective collection and sorting, this book provides an accurate illustration of how the EPR principle has been translated into practice. Firstly the authors examine whether the industry is paying for the net financial cost of 'preparation for recycling' activities or if the extra-costs of recycling are being recovered via the sale of sorted materials, by the consumer through higher prices or by citizens in general through higher taxes. Secondly, by monetizing the net environmental benefits attained with the recycling system, the book discusses the success and Value-for-Money (VfM) of the EU's recycling policy. In other words: what is the economic rate of return of the enhanced environmental protection achieved due to the fulfilment of recovery and recycling targets?

This major reference work the first of its kind provides a comprehensive and authoritative introduction to the large and growing literature on contingent valuation. It includes entries on over 7,500 contingent valuation papers and studies from over 130 countries covering both the published and grey literatures. This book provides an interpretive historical account of the development of contingent valuation, the most commonly used approach to placing a value on goods not normally sold in the marketplace. The major fields catalogued here include culture, the environment, and health application. This bibliography is an ideal starting point for researchers wanting to find other studies that have valued goods or used techniques similar to those they are interested in. For those wanting to conduct meta analyses, the book will serve as an invaluable guide to source material. For those wanting to conduct meta analyses, the book will serve as an invaluable guide to source material. In addition to the print edition we offer access, for purchasers of the book, to a website providing the contents of as a searchable Word document

and in a variety of standard bibliographic database forms. Contingent Valuation is an indispensable reference source for researchers, scholars and policymakers concerned with survey approaches to the problem of environmental valuation.

Underneath the Golden Boy series of the Manitoba Law Journal reports on developments in legislation and on parliamentary and democratic reform in Manitoba, Canada, and beyond. This issue has articles from a variety of contributing authors including: Andrew M. Smith, Andrew Swan, Bryan P. Schwartz, E. L. Forget, Gerrit Theule, James Beddome, James P. Mulvale, Jane Ursel, Jessica Davenport, Jessica Isaak, Joan Grace, Karine Levasseur, Kathleen Buddle, Kelvin Goertzen, Kyle Emond, Matthew Carvell, Michael Ventola, Michelle I. Bertrand, Natalie Kalmet, Rana Bokhari, RCL Lindsay, Richard Jochelson, S. B. Strobel, Shauna MacKinnon, Sherry Brown, Sid Frankel, Stacy Senkbeil, Wayne Simpson, and Zachary Kinahan.

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