

## Eco Cities And The Transition To Low Carbon Economies

This book argues that there is no way to make progress in building a sustainable future without extensive participation of non-state actors. The volume explores the contribution of non-state actors to a sustainable transition, starting with citizens and communities of different kinds and ending with cities and city-networks. The authors analyse social, cultural, political and economic drivers and barriers for this transition, from individual behaviour to structural restraints, and investigate interplay between the two. Through a series of wide-ranging case studies from the UK, Australia, Germany, Italy and Denmark, and a number of comparative case studies, the volume provides an empirically and theoretically robust argument that highlights the need to develop, widen and scale up collective action and community-based engagement if the transition to sustainability is to be successful. This book will be of great interest to students and scholars of climate change, sustainability and environmental policy.

This book calls for the conditions of transition to sustainability: How to take into consideration new global phenomena such as and of the dimension of climate change, the depletion of natural resources, financial crises, demographic dynamics, global urbanization, migrations and mobility, while bearing in mind short-term or local place-based issues, such as social justice or quality of life? Meeting this challenge requires an inclusive approach of sustainability. It is a matter of designing a new social contract: Sustainability requires more than developing the right markets, institutions and metrics, it requires social momentum. To do so, many issues need a clear and complete answer: How to link social justice with sustainability policies? What governance tools to do so? What linkage between one decision-making level and the other? These are major issues to design sound transitions to sustainability.

This book explores how the concept of urban experimentation is being used to reshape practices of knowledge production in urban debates about resilience, climate change governance, and socio-technical transitions. With contributions from leading scholars, and case studies from the Global North and South, from small to large scale cities, this book suggests that urban experiments offer novel modes of engagement, governance, and politics that both challenge and complement conventional strategies. The book is organized around three cross-cutting themes. Part I explores the logics of urban experimentation, different approaches, and how and why they are deployed. Part II considers how experiments are being staged within cities, by whom, and with what effects? Part III examines how entire cities or groups of cities are constructed as experiments. This book seeks to contribute a deeper and more socially and politically nuanced understanding of how urban experiments shape cities and drive wider changes in society, providing a framework to examine the phenomenon of urban experimentation in conceptual and empirical detail.

This book covers the nexus between urban health, sustainability, and peace. 'Urban Health, Sustainability, and Peace' is the first book that attempts to put these three critical areas together. This novelty approaches the subject matter by delving into evaluating what works, what does not work, and what should be done to achieve healthy cities. We believe this book will be beneficial to a wide range of stakeholders, particularly policymakers, planners, and developers, who continuously shape and reshape the structure and environments of our cities and communities. Unfortunately, in most cases, the healthiness of the cities may not be of their immediate concern. Nevertheless, it is the concern of the end-users, citizens, or simply those who live and work in cities and communities worldwide. To safeguard peace in cities, one has to consider sustaining urban health; and that is the main aim of this book. The ongoing pandemic gives us an excellent reason to study cities' health. During such a disruptive time, we detect many flaws in cities and communities around the world. We primarily identify the negative impacts on sustainability and peace in cities. In order to sustain a healthy city, this book evaluates six sustainability dimensions of physical, environmental, economic, social, institutional, and technical. It then utilizes eight primary dimensions of positive peace, evaluating critical areas for future considerations in urbanism. These considerations include making cities smarter, more resilient, and more sustainable. The book's ultimate goal is to highlight how we should progress to maintain and sustain urban health. As a continuation to 'The City in Need,' this book covers the nexus between urban health, sustainability, and peace. Furthermore, by reflecting on the ongoing pandemic crisis, metaphorically labelled as 'The Day the World Stopped,' we delve into some key areas beyond the usual planning and policy guidelines. Lastly, the book intends to highlight what has not been studied before, i.e., the relationship between urban health, sustainability, and peace.

Eco-Cities and the Transition to Low Carbon Economies Springer

Most of the world's population now lives in cities. So if we are to address the problems of environmental deterioration and peak oil adequately, the city has to be a major focus of attention. EcoCities is about re-building cities and towns based on ecological principles for the long term sustainability, cultural vitality and health of the Earth's biosphere. Unique in the literature is the book's insight that the form of the city really matters-and that it is within our ability to change it, and crucial that we do. Further, that the ecocity within its bioregion is comprehensible and do-able, and can produce a healthy and potentially happy future. EcoCities describes the place of the city in evolution, nature and history. It pays special attention to the key question of accessibility and transportation, and outlines design principles for the ecocity. The reader is encouraged to plunge in to its economics and politics: the kinds of businesses, planning and leadership required. The book then outlines the tools by which a gradual transition to the ecocity could be accomplished. Throughout, this new edition is generously illustrated with the author's own inspired visions of what such rebuilt cities might actually look like.

This open access book brings together research findings and experiences from science, policy and practice to highlight and debate the importance of nature-based solutions to climate change adaptation in urban areas. Emphasis is given to the potential of nature-based approaches to create multiple-benefits for society. The expert contributions present recommendations for creating synergies between ongoing policy processes, scientific programmes and practical implementation of climate change and nature conservation measures in global urban areas. Except where otherwise noted, this book is licensed under a Creative Commons Attribution 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by/4.0/>

Cities have experienced an unprecedented rate of growth in the last decade. More than half the world's population lives in urban areas, with the U.S. percentage at 80 percent. Cities have captured more than 80 percent of the globe's economic activity and offered social mobility and economic prosperity to millions by clustering creative, innovative, and educated individuals and organizations. Clustering populations, however, can compound both positive and negative conditions, with many modern urban areas experiencing growing inequality, debility, and environmental degradation. The spread and continued growth of urban areas presents a number of concerns for a sustainable future, particularly if cities cannot adequately address the rise of poverty, hunger, resource consumption, and biodiversity loss in their borders. Intended as a comparative illustration of the types of urban sustainability pathways and subsequent lessons learned existing in urban areas, this study examines specific examples that cut across geographies and scales and that feature a range of urban sustainability challenges and opportunities for collaborative learning across metropolitan regions. It focuses on nine cities across the United States and Canada (Los Angeles, CA, New York City, NY, Philadelphia, PA, Pittsburgh, PA, Grand Rapids, MI, Flint, MI, Cedar Rapids, IA, Chattanooga, TN, and Vancouver, Canada), chosen to represent a variety of metropolitan regions, with consideration given to city size, proximity to coastal and other waterways, susceptibility to hazards, primary industry, and several other factors.

This book presents a blueprint for transforming East Asian cities to global engines of green growth by choosing energy efficient solutions for their infrastructure needs, with case studies in Cebu City (the Philippines), Da Nang (Vietnam), and Surabaya (Indonesia) illustrating the use of sustainable urban energy and emissions planning (SUEEP).

The Sustainable City provides a broad and engaging overview of the urban systems of the twenty-first century. This second edition dives

deeper into the financing of sustainable infrastructure, reviews current trends in urban inequality, and features many more examples and new international case studies spanning the globe.

This book tells the story of visionary urban experiments, shedding light on the theories that preceded their development and on the monsters that followed and might be the end of our cities. The narrative is threefold and delves first into the eco-city, second the smart city and third the autonomous city intended as a place where existing smart technologies are evolving into artificial intelligences that are taking the management of the city out of the hands of humans. The book empirically explores Masdar City in Abu Dhabi and Hong Kong to provide a critical analysis of eco and smart city experiments and their sustainability, and it draws on numerous real-life examples to illustrate the rise of urban artificial intelligences across different geographical spaces and scales. Theoretically, the book traverses philosophy, urban studies and planning theory to explain the passage from eco and smart cities to the autonomous city, and to reflect on the meaning and purpose of cities in a time when human and non-biological intelligences are irreversibly colliding in the built environment. Iconoclastic and prophetic, *Frankenstein Urbanism* is both an examination of the evolution of urban experimentation through the lens of Mary Shelley's *Frankenstein*, and a warning about an urbanism whose product resembles Frankenstein's monster: a fragmented entity which escapes human control and human understanding. Academics, students and practitioners will find in this book the knowledge that is necessary to comprehend and engage with the many urban experiments that are now alive, ready to leave the laboratory and enter our cities.

This book examines the sustainability transition theory in the context of urbanization in China, tracing the development of eco and low-carbon cities. It examines how ideas on building eco-cities and low-carbon cities travel from nation to nation, how they are adopted in the Chinese administrative context and what role inter-scalar actors play in getting the ideas transferred, translated and operationalized on the ground. Offering an overarching theoretical framework that incorporates all urban sustainability experiments in China, the book conducts a comprehensive analysis of the master plans of these new towns and summarizes the normative transition targets of sustainable urban experiments. It explores how they differ from each other and how they influence transition dynamics in practice. By examining four eco and low-carbon new towns deemed representative of current major approaches to sustainability transition management in China, the book provides a detailed depiction of generic transition management and explains the different transitional trajectories for each type of sustainable urban experiment. It demonstrates how subnational-level and city-level transitions mediate the national transition. Through a thorough inquiry into inter-scalar dynamics, institutional arrangements and techno-social innovations in sustainable urban experiments, the book links generalized transition rules and specific contexts to present a full view of the challenges, failures and territorial problems of eco and low-carbon new towns. This book makes a novel contribution to the study of Chinese urbanization by revisiting issues and problems of contemporary urban China. The reflection on these urban issues will provide implications to policymakers, professionals and the common reader interested in the future sustainable urbanism in China.

Reading this book will lead to new insights compelling to an international audience into how cities address the sustainability challenges they face. They do this by not repeating old patterns but by searching for new and innovative methods and instruments based on shared principles of a transitions approach. The book describes the quest of cities on two continents to accelerate and stimulate such a transition to sustainability. The aim of the book is twofold: to provide insights into how cities are addressing this challenge conceptually and practically, and to learn from a comparison of governance strategies in Europe and Asia. The book is informed by transition thinking as it was developed in the last decade in Europe and as it is increasingly being applied in Asia. The analytical framework is based on principles of transition management, which draws on insights from complexity science, sociology, and governance theories. Only recently this approach has been adapted to the urban context, and this book is an opportunity to share these experiences with a wider audience. For scholars this work offers a presentation of recent state-of-the-art theoretical developments in transition governance applied to the context of cities. For urban planners, professionals, and practitioners it offers a framework for understanding ongoing developments as well as methods and instruments for dealing with them. The content is potentially appealing to post-graduate and graduate students of environmental management, policy studies, and urban studies programs.

With a foreword from Paul King, Chief Executive, UK Green Building Council and Chairman, Zero Carbon Hub As concerns over climate change and resource constraints grow, many cities across the world are trying to achieve a low carbon transition. Although new zero carbon buildings are an important part of the story, in existing cities the transformation of the current building stock and urban infrastructure must inevitably form the main focus for transitioning to a low carbon and sustainable future by 2050. *Urban Retrofitting for Sustainability* brings together interdisciplinary research contributions from leading international experts to focus on key issues such as systems innovation, financing tools, governance, energy, and water management. The chapters consider not only the knowledge and technical tools available, but looks forward to how they can be implemented in real cities by 2050.

The aim of this book is to explore the question of how urban sustainability can be achieved despite a lack of knowledge integration between different fields. This book starts from the premise that the battle for sustainability will be won or lost in cities and proposes a critical, up-to-date review of trans-disciplinary knowledge management tools – notably scenario methods for informed decision-making. Drawing from literature and pioneering experience in innovation clusters (university-industry-government) during the last decade, it provides a review of recent eco-city concepts and knowledge management tools for effective decision making in the transition to urban sustainability. Using method outlines, case studies and graphical representations, it is intended to serve as a toolbox for those interested in urban transformation towards sustainability. The challenge of sustainability is unprecedented in the history of humanity. The world population is already predominantly urban and the biosphere is profoundly transformed in ways which we can only partially understand, let alone manage. For example, the International Panel for Climate Change has produced very impressive sets of global climate scenarios, but the consequences for the real-world management remain marginal. This book is intended for city managers concerned with urban transformation towards sustainability, policy-makers, researchers-innovators and technology developers, industry and business professionals, as well as students and the general public.

This enlightening book elucidates the leadership challenges of various cities in emerging transitions towards higher levels of sustainability. It examines elements of three socio-technical systems, energy, transport and healthcare, while addressing technology invention, commercialization, mass-production and adoption. The book breaks new ground in the analysis of topical issues such as local 'cradle' conditions, incentive schemes, niche-development, living labs, impact bonds, grass-roots intermediation and adaptive policy making. It offers a broad coverage of global systems of cities, with a particular focus on Scandinavia, Germany, the Netherlands, China, Korea, Japan, the US and Canada.

On a historical global turning point, this book offers a thorough exploration of the "New Sustainability Paradigm", originally developed by the Global Scenario Group (GSG) of the Stockholm Environmental Institute (SEI) as a starting point for analyzing real-life transitions and transformations. 11 contributors from 5 continents present detailed analyses of economic and political transitions in Western and Eastern Europe, the USA, the Middle East, and in Asia, discussing the role of different players in the implementation of the New Sustainability Paradigm. Part I offers an overview of the six scenarios developed by the GSG and a short discussion of significant papers published by the Great Transition Initiative (GTI) of the Tellus Institute. Next come examples of dramatic historical and current transitions in Western Europe, the

USA, Eastern Europe, the Middle East (Arabian Spring), and Asia, as well as an analysis of the potential of humankind to manage a great transition to the new sustainability paradigm. Subsequent chapters highlight the role of culture and education and review the role of different players for the implementation of the new sustainability paradigm. The focus of Part II is on the ecological pillar of Sustainability. The discussion includes urgent ecological problems including climate engineering, eco-criminality, bioterrorism, biodiversity protection, water, energy, and food security. Part III deals with needed innovations in sustainable waste management and sustainable city architecture, especially big cities in developing and threshold countries, where a significant part of the world population is concentrated. The fourth and final section offers an analysis of insights developed throughout the book, and outlines recommendations for the implementation of the New Sustainability Paradigm by civil society, grass-root movements, scholars, politically neutral NGOs, sincere media players, and by open-minded and enlightened politicians to manage and steer the Great Transition towards sustainable global democracy.

Living sustainably is not just about preserving the wilderness or keeping nature pristine. The transition to a green economy depends on cities. Economic, technological, and cultural forces are moving people out of rural areas and into urban areas. If we are to avert climate catastrophe, we will need our cities to coexist with nature without destroying it. Urbanization holds the key to long-term sustainability, reducing per capita environmental impacts while improving economic prosperity and social inclusion for current and future generations. The Sustainable City provides a broad and engaging overview of the urban systems of the twenty-first century. It approaches urban sustainability from the perspectives of behavioral change, organizational management, and public policy, looking at case studies of existing legislation, programs, and public-private partnerships that strive to align modern urban life and sustainability. The book synthesizes the disparate strands of sustainable city planning in an approachable and applicable guide that highlights how these issues touch our lives on a daily basis, including the transportation we take, the public health systems that protect us, where our energy comes from, and what becomes of our food waste. This second edition of The Sustainable City dives deeper into the financing of sustainable infrastructure and initiatives and puts additional emphasis on the roles that individual citizens and varied stakeholders can play. It also reviews current trends in urban inequality and discusses whether a model of sustainability that embraces a multidimensional approach to development and a multistakeholder approach to decision making can foster social inclusion. It features many more examples and new international case studies spanning the globe.

The author examines the two most advanced eco-city projects: the Sino-Singapore Tianjin Eco-City in China, and Masdar City in Abu Dhabi. These are the most notable attempts at building new eco-cities to both face up to the 'crises' of the modern world and to use the city as an engine for transition to a low-carbon economy.

Eco-city planning is a key element of urban land use planning in perspective and of ongoing debate of environmental urban sustainable development with a spatial and practical dimension. The conceptual basis of ecological planning is that we can no longer afford to be merely human-centred in approach. Instead, the interdependency of human and non-human species has forced us to appreciate the 'rights' and 'intrinsic values' of non-human species in our pursuit for a sustainable ecosystem. This volume has as approach an emphasis on environmental planning policies whereby, for example, energy saving, anti-pollution measures, use of non-car modes, construction of green buildings, safeguarding of nature and natural habitats in urban areas, and use of more renewable resources are promotional norms. Their aims and leading outcome serve to protect the Earth from adverse effects of global warming and different sources of pollution threatening the quality of life of human societies.

To assess urban sustainability performance, this book explores several clusters of cities, including megacities, cities of the Global South, European and North American cities, cities of the Middle East and North Africa, cities of Central and South East Asia, a city state of Singapore and a large group of global cities. It applies a multi-criteria approach using a panel of environmental, economic, social and smart indicators to assess progress and policies in global cities including London, New York, Hong Kong, San Francisco, Los Angeles, São Paulo, Rio de Janeiro, Buenos Aires, Paris, Berlin, Stockholm, Moscow, Beijing, Seoul, Singapore, Shanghai, Sydney, Tokyo and many others. Additional attention is given to the issues of climate change, poverty and smart dimensions, with renewable energy and the drivers of urban CO<sub>2</sub> emissions playing the central role. This book is abundant with case studies considering strategies, policies and performance of the leading cities, including San Francisco, Stockholm and Seoul in greater depth, exploring how their successes can be used by other cities. The book identifies key linkages between different smart and sustainability dimensions as well as investment opportunities in cities with sustainability potential. This book will be of great interest to policy makers, city and regional authorities as well as scholars and students of urban planning and sustainable development aiming to facilitate a sustainability transition in our cities around the world.

With Asia's cities undergoing unprecedented growth in the 21st century, lauded the 'urban century' by many, Sustainable Cities in Asia provides a timely examination of the challenges facing cities across the continent including some of the projects, approaches and solutions that are currently being tested. This book uses numerous case studies, analysing topical issues ranging from city cycling in India, to green spaces in China, to the use of community-led energy generation projects in post-Fukushima Japan. Containing contributions from an international team of scholars, it also takes a multi-disciplinary approach and draws on examples from a wide range of countries, including China, India, Japan, Korea, Taiwan, Singapore and the United Arab Emirates. Ultimately, by providing a comprehensive discussion of the broader debates around the shape of sustainable urbanism, it demonstrates that Asia is one of the most active regions in terms of the development of sustainable city strategies. Tackling the contemporary issues of key importance for sustainability, such as property markets, migration and transport, this book will appeal to students and scholars of Urban Geography, Sustainability, Environmental Studies and Asian studies.

Untangling Smart Cities: From Theory to Practice helps all key stakeholders understand the complex and often conflicting nature of smart city research, offering valuable insights for designing and implementing strategies to improve the smart city decision-making processes. The book drives the reader to a better theoretical and practical comprehension of smart city development, beginning with a thorough and systematic analysis of the research literature published to date. The book provides an in-depth understanding of the entire smart city knowledge domain, revealing a deeply rooted division in its cognitive-epistemological structure as identified by bibliometric insights. Untangling Smart Cities fills the knowledge gap between theory and practice using case study research, with empirical evidence drawn from cities considered leaders in innovative smart city practices. An invaluable contribution to the growing scientific literature, Untangling Smart Cities provides an accurate and deep understanding of the strategic principles driving smart city development. Provides clarity on the smart city concepts and strategies Provides a systematic literature analysis on the state-of-the-art of Smart Cities research using bibliometrics combined with practical application to guide smart systems implementation Offers a comprehensive and systematic analysis of Smart Cities research produced during its first three decades, driven by statistical analysis techniques Generates a strong connection between theory and practice by providing the scientific knowledge necessary to approach the complex nature of Smart Cities sourced from the analysis of actual best practices Documents five main development pathways for smart cities development, serving the needs of city managers and policy makers with concrete advice and guidance

As a continuation of 'Identity of Cities and City of Identities', this book covers the arguments around the memory-experience-cognition nexus concerning palimpsests and urban places. As cities experience transitional phases of growth, development, decline, and decay, the author urges considering the notion of urban memory in place-making strategies and design decision-making processes. These explorations would add value to primary fields of architecture, architectural history, cognitive science, human geography, and urbanism. Divided into eight chapters, this book puts together a comprehensive knowledge of urban memory in city transitions. By studying urban memory, the author delves into conceptions of mental mapping, knowledge of environments, cognition of places, and the perceptual dimension of urbanism. Undoubtedly, urban memory plays a significant part in the future movements of humanistic urbanism. Given the significances of scale, pace, and mode of city transitions globally, we should remember who are the ultimate users of those living environments. Therefore, in this book, the author debates two contradictions of 'memory of place vs. place of memory', and 'significance of place vs. place of significance'. Each of these is believed to be a paradox of its own, indicating places are significant through the systematic networks of cities, memories are meaningful through the neural information processing, and place memories are the essence of urban identities. The book's ultimate goal is to demonstrate the effectiveness of the space-time frame of place in making memorable places. Through the comprehensive explorations of many global examples, we can evaluate the significance of place in mind more carefully. This is narrated based on the recognition of nostalgia in cities, socio-temporal qualities in places, and the network of processes in our minds. In return, the aim is to provide new knowledge to make memorable cities, enhance social experiences, and capture and value the significance of place in mind.

Cities in Transition focuses on the sustainability transitions initiated in 40 European cities. The book presents the incredible wealth of insights gathered through hundreds of interviews and questionnaires. Four key domains—local energy systems, local green spaces, local water systems and local labour markets—have been the focus of the field research investigating local potentials for social innovation and new forms of civil society self-organisation. Examining the potential of new organizational frameworks like co-operatives, multi-stakeholder constructions, local-regional partnerships and networks for the success of such transitions, this book presents the key ingredients of a sustainable urban community as a viable concept to address current global financial, environmental and social challenges. Crucial reading for academics and practitioners of urban planning and sustainability in Europe, Cities in Transition is an innovative roadmap for sustainability in changing cities.

A groundbreaking exploration of the most promising new ideas for creating the sustainable cities of tomorrow The culmination of a four-year collaborative research project undertaken by leading UK universities, in partnership with city authorities, prominent architecture firms, and major international consultants, Retrofitting Cities for Tomorrow's World explores the theoretical and practical aspects of the transition towards sustainability in the built environment that will occur in the years ahead. The emphasis throughout is on emerging systems innovations and bold new ways of imagining and re-imagining urban retrofitting, set within the context of 'futures-based' thinking. The concept of urban retrofitting has gained prominence within both the research and policy arenas in recent years. While cities are often viewed as a source of environmental stress and resource depletion they are also hubs of learning and innovation offering enormous potential for scaling up technological responses. But city-level action will require a major shift in thinking and a scaling up of positive responses to climate change and the associated threats of environmental and social degradation. Clearly the time has come for a more coordinated, planned, and strategic approach that will allow cities to transition to a sustainable future. This book summarizes many of the best new ideas currently in play on how to achieve those goals. Reviews the most promising ideas for how to approach planning and coordinating a more sustainable urban future by 2050 through retrofitting existing structures Explores how cities need to govern for urban retrofit and how future urban transitions and pathways can be managed, modeled and navigated Offers inter-disciplinary insights from international contributors from both the academic and professional spheres Develops a rigorous conceptual framework for analyzing existing challenges and fostering innovative ways of addressing those challenges Retrofitting Cities for Tomorrow's World is must-reading for academic researchers, including postgraduates insustainability, urban planning, environmental studies, economics, among other fields. It is also an important source of fresh ideas and inspiration for town planners, developers, policy advisors, and consultants working within the field of sustainability, energy, and the urban environment.

Cities are striving to become more resilient, adaptive and sustainable; this requires new ways of governing and developing the city. This book features chapters by researchers using regenerative development and transitions theories to envisage how Eco-Cities could be planned, designed and created, and concludes with practical tools and an outline of how this evolution could be facilitated. It examines two major questions: How can we use understandings of Eco-Cities to address the legacy of urban built form and existing practices which often make it difficult to create the systemic changes needed? And what are the elements of complex urban places and spaces that will enable the planning, creation and evolution of thriving cities? The book will appeal to planners, city makers, urban researchers, students and practitioners, including planners, designers, architects and sustainability managers, and all those seeking to envisage the steps along the path to thriving cities of the future.

The concept of 'sustainable urban development' has been pushed to the forefront of policymaking and politics as the world wakes up to the impacts of climate change and the destructive effects of the Anthropocene. Climate change has emerged to be one of the biggest challenges faced by our planet today, threatening both built and natural systems with long-term consequences, which may be irreversible. While there is a vast body of literature on sustainability and sustainable urban development, there is currently limited focus on how to cohesively bring together the vital issues of the planning, development, and management of sustainable cities. Moreover, it has been widely stated that current practices and lifestyles cannot continue if we are to leave a healthy living planet to not only the next generation, but also to the generations beyond. The current global school strikes for climate action (known as Fridays for Future) evidences this. The book advocates the view that the focus needs to rest on ways in which our cities and industries can become green enough to avoid urban ecocide. This book fills a gap in the literature by bringing together issues related to the planning, development, and management of cities and focusing on a triple-bottom-line approach to sustainability.

Current societies face unprecedented risks and challenges connected to climate change. Addressing them will require fundamental transformations in the infrastructures that sustain everyday life, such as energy, water, waste and mobility. A transition to a 'low carbon' future implies a large scale reorganisation in the way societies produce and use energy. Cities are critical in this transition because they concentrate social and economic activities that produce climate change related emissions. At the same time, cities are increasingly recognised as sources of opportunities for climate change mitigation. Whether, how and why low carbon transitions in urban systems take place in response to climate change will therefore be decisive for the success of global mitigation efforts. As a result, climate change increasingly features as a critical issue in the management of urban infrastructure and in urbanisation policies. *Cities and Low Carbon Transitions* presents a ground-breaking analysis of the role of cities in low carbon socio-technical transitions. Insights from the fields of urban studies and technological transitions are combined to examine how, why and with what implications cities bring about low carbon transitions. The book outlines the key concepts underpinning theories of socio-technical transition and assesses its potential strengths and limits for understanding the social and technological responses to climate change that are emerging in cities. It draws on a diverse range of examples including world cities, ordinary cities and transition towns, from North America, Europe, South Africa and China, to provide evidence that expectations, aspirations and plans to undertake purposive socio-technical transitions are emerging in different urban contexts. This collection adds to existing literature on cities and energy transitions and introduces critical questions about power and social interests, lock-in and development trajectories, social equity and economic development, and socio-technical change in cities. The book addresses academics, policy makers, practitioners and researchers interested in the development of systemic responses in cities to curb climate change.

This book is a point of departure for cities that would like to reap the many benefits of ecological and economic sustainability. It provides an analytical and operational framework that offers strategic guidance to cities on sustainable and integrated urban development.

The world's population is currently undergoing a significant transition towards urbanisation, with the UN expecting that 70% of people globally will live in cities by 2050. Urbanisation has multiple political, cultural, environmental and economic dimensions that profoundly influence social development and innovation. This fundamental long-term transformation will involve the realignment of urban society's technologies and infrastructures, culture and lifestyles, as well as governance and institutional frameworks. Such structural systemic realignments can be referred to as urban sustainability transitions: fundamental and structural changes in urban systems through which persistent societal challenges are addressed, such as shifts towards urban farming, renewable decentralised energy systems, and social economies. This book provides new insights into how sustainability transitions unfold in different types of cities across the world and explores possible strategies for governing urban transitions, emphasising the co-evolution of material and institutional transformations in socio-technical and socio-ecological systems. With case studies of mega-cities such as Seoul, Tokyo, New York and Adelaide, medium-sized cities such as Copenhagen, Cape Town and Portland, and nonmetropolitan cities such as Freiburg, Ghent and Brighton, the book provides an opportunity to reflect upon the comparability and transferability of theoretical/conceptual constructs and governance approaches across geographical contexts. *Urban Sustainability Transitions* is key reading for students and scholars working in Environmental Sciences, Geography, Urban Studies, Urban Policy and Planning.

Urbanization is occurring at an unprecedented rate; by 2050 three quarters of the world's people will live in urban environments. The cars we drive, products we consume, houses we live in and technology we use will all determine how sustainable our cities will be. Bridging the increasing divide between cross-disciplinary academic insights and the latest practical innovations, *Resilient Sustainable Cities* provides an integrated approach for long term future planning within the context of the city as a whole system. In the next 30 years cities will face their biggest challenges yet, as a result of long term, or 'slow burn' issues: population growth will stretch to the breaking point urban infrastructure and service capacity;

resource scarcity, such as peak oil; potable water and food security, will dramatically change what we consume and how; environmental pressures will change how we live and where and; shifting demographic preferences will exacerbate urban pressures. Cities can't keep doing what they've always done and cope – we need to change current urban development to achieve resilient, sustainable cities. Resilient Sustainable Cities provides practical and conceptual insights for practitioners, researchers and students on how to deliver cities which are resilient to 'slow burn' issues and achieve sustainability. The book is organized around three overarching themes: pathways to the future innovation to deliver the future leadership and governance issues The book includes a variety of perspectives conveyed through international case studies and examples of cities that have transformed for a sustainable future, exploring their successes and failures to ensure that readers are left with ideas on how to turn their city into a resilient sustainable city for the future.

A political scientist and an urban architect explore China's odyssey to become an ecological civilization and transform its massive, unsustainable, urbanization process into one that creates hundreds of eco-cities. The resulting *From Eco-Cities to Sustainable City-Regions* is the first book-length study combining analysis of politics and power, urban design and planning issues derived from the co-authors' interdisciplinary research, and on-site fieldwork from their political science and architectural area specialties. Begun in 1986, little-known policy actions have taken shape in the building of 285 eco-cities-and growing. What are the driving forces of these innovative developments? How is China going about converting its teeming urban areas into replicable and showcase cities? Can these new policy initiatives overcome the damage done to its air, waterways, and land, while significantly reducing public health dangers to its inhabitants? In searching for means for the People's Republic of China to take the next step from eco-cities to sustainable city-regions, the co-authors assess the potential success of China's present course and offer key recommendations for Chinese political leaders, urban planners, and citizen stakeholders to make the transition to a sustainable future for its people and the rest of the world. The primary market for this book will be eco-researchers, Asian studies scholars and teachers, eco- and urban architects, environmental and urban policy professionals, and advanced undergraduates in environmental and sustainability studies or sciences programs. The interdisciplinary reach and critical framework of analysis will appeal to a wide variety of scholars interested in Chinese ecological strides and seeking a critical assessment of its potential.

Current economic growth strategies around the world are rapidly depleting the natural resources and ecosystem services that we depend on. *Just Transitions* provides a comprehensive overview of these challenges from a Global South perspective. The authors ask: How do developing countries eradicate poverty via economic development, while at the same time facing the consequences of global warming and dwindling levels of cheap oil, productive soils, metals, clean water supplies, and forest products? How do they address widening inequalities in income as well as the need to rebuild ecosystem services and natural resources? The book considers the theme of a just transition, which reconciles the sustainable use of natural resources with a pervasive commitment to sufficiency (where overconsumers are satisfied with less so that underconsumers can secure enough). It explores a range of different viewpoints and ideas and synthesizes them to illuminate new ways of thinking from a sustainability perspective. It rethinks development with special reference to the greening of the developmental state, explores the key role that cities could play in the transition to a more sustainably urbanized world, and highlights the neglect of soils in the global discussions around the potential of sustainable agriculture to feed the world. Case studies drawn from the African continent detail the challenges, but they are set in the context of global trends. The authors conclude with their experiences in building a community that aspires to live sustainably.

This book is intended to help explore the field of smart sustainable cities in its complexity, heterogeneity, and breadth, the many faces of a topical subject of major importance for the future that encompasses so much of modern urban life in an increasingly computerized and urbanized world. Indeed, sustainable urban development is currently at the center of debate in light of several ICT visions becoming achievable and deployable computing paradigms, and shaping the way cities will evolve in the future and thus tackle complex challenges. This book integrates computer science, data science, complexity science, sustainability science, system thinking, and urban planning and design. As such, it contains innovative computer-based and data-analytic research on smart sustainable cities as complex and dynamic systems. It provides applied theoretical contributions fostering a better understanding of such systems and the synergistic relationships between the underlying physical and informational landscapes. It offers contributions pertaining to the ongoing development of computer-based and data science technologies for the processing, analysis, management, modeling, and simulation of big and context data and the associated applicability to urban systems that will advance different aspects of sustainability. This book seeks to explicitly bring together the smart city and sustainable city endeavors, and to focus on big data analytics and context-aware computing specifically. In doing so, it amalgamates the design concepts and planning principles of sustainable urban forms with the novel applications of ICT of ubiquitous computing to primarily advance sustainability. Its strength lies in combining big data and context-aware technologies and their novel applications for the sheer purpose of harnessing and leveraging the disruptive and synergetic effects of ICT on forms of city planning that are required for future forms of sustainable development. This is because the effects of such technologies reinforce one another as to their efforts for transforming urban life in a sustainable way by integrating data-centric and context-aware solutions for enhancing urban systems and facilitating coordination among urban domains. This timely and comprehensive book is aimed at a wide audience across science, academia industry, and policymaking. It provides the necessary material to inform relevant research communities of the state-of-the-art research and the latest development in the area of smart sustainable urban development, as well as a valuable reference for planners, designers, strategists, and ICT experts who are working towards the development and implementation of smart sustainable cities based on big data analytics and context-aware computing.

Sustainability is a watchword of policy-makers and planners around the world, with cities providing the main focus for

