earthscan series on sustainable design

# low carbon cities transforming urban systems

edited by steffen lehmann

`From the author who gave us the tour-de-force account of urban sustainability, *The Principles of Green Urbanism*, comes another timely read. Steffen Lehmann has assembled some of the best environmental urban minds in this new anthology that will become essential for all those who are looking for viable and sustainable solutions.'

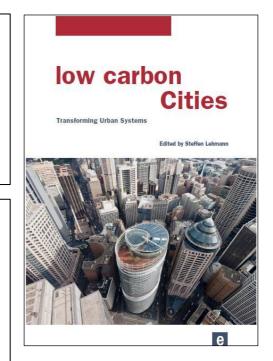
Professor Tigran Haas, KTH - Royal Institute of Technology, Stockholm

#### About the book

This book will be published in January 2014 as one of the *Earthscan Book Series on Sustainable Design*, edited by Steffen Lehmann. The series is distributed globally and appreciated as a textbook by students, practitioners and academics. Two volumes in the series, *Designing for Zero Waste* and *Motivating Change*, have already been published.

Low Carbon Cities presents 25 important texts as a primary resource that is aimed at professionals, students and scholars in architecture, urban planning and design. The book explores some of the underlying dimensions of the transformation of existing cities and the design of low carbon cities in theory and practice, with reference to sustainable design, social and individual values, public space, housing affordability, public transport, urban micro climates and consumption. It concentrates on the required transformation of urban systems and planning/design practices for a low carbon future. There is a particular focus on rapid urbanisation in Asia and the needs of cities in the Asia-Pacific region.

Professor Steffen Lehmann is the Director of the Zero Waste SA Centre for Sustainable Design & Behaviour and of the China Australia Centre for Sustainable Urban Futures at the University of South Australia.



'For too long, the international debate about "green" building has been far too object-focused. That is why Low Carbon Cities: Transforming Urban Systems is of utmost importance.'

Ulf Meyer, architecture journalist, Berlin

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400 pages



### contents

Foreword: **Donovan Storey** 'Planning for sustainable, low carbon and green cities: the eco-city development paradigm'

Preface: Philip Bay 'Holistic approaches to future cities'

Introduction: Steffen Lehmann 'Low carbon cities - more than just buildings'

#### The book is divided into three parts:

## Part I: Classic texts on ecologically sustainable cities: conceptual evolutions and different schools of thought

A selection of renowned authors who have pioneered Low Carbon City concepts.

- 1. Herbert Girardet 'Ecopolis the regenerative city'
- 2. Richard Register 'Much better than climate change adaptation'
- 3. Tim Beatley 'Imagining biophilic cities'
- 4. Jeff Kenworthy 'Trends in low carbon transport and urban development in thirty-three cities, 1995 to 2005'
- 5. Manfred Lenzen and Greg M. Peters 'How city dwellers affect their resource hinterland a spatial impact study of Australian households'
- 6. Norbert Lechner 'Sustainable cities are solar responsive cities'
- 7. Peter Droege `From renewable cities to regenerating regions. Fire, the first element of sustainable urbanism'
- 8. Steffen Lehmann 'What is green urbanism? Formulating a series of holistic principles'

#### Part II: New directions: case studies for low carbon city design

Understanding the Low Carbon City primarily as an urban design and architectural task, featuring a series of cutting edge case studies. This part also looks at Asian urbanisation.

- 9. Manfred Hegger and Joost Harwtig 'Sustainability at the urban scale: low carbon cities and architecture'
- 10. Nico Tillie, Andy van den Dobbelsteen and Sebastian Carney 'A planning approach for the transformation to low carbon cities'
- 11. Nicholas Grimshaw and Keith Brewis `From the ashes: reconnecting inner city inhabitants with their place the green way'
- 12. Mitchell Joachim 'Urbaneering: a new profession that can re-invent and negotiate the complex mix that encompasses the next city'
- 13. Christoph Ingenhoven, Martin Reuter and Ben Dieckmann 'From green buildings to sustainable urban design: two case studies'
- 14. Robert Cervero 'Urban reclamation and regeneration in Seoul, South Korea'
- 15. Shipra Narang Suri `From sustainable to low carbon cities: is India's urban transformation triggering a paradigm shift?'
- 16. Steffen Lehmann `From big data to smart cities: integrated demand forecasting to support urban planning of low-carbon cities'

#### Part III: Urban micro climates: mitigating urban heat stress

The mitigation of increasing city temperatures has emerged as a major topic for future-proofing urban settlements. What are the latest advances in the development of cool materials and techniques for a hotter built environment?

- 17. Gerald Mills 'The urban heat island and low carbon cities'
- 18. David Sailor 'A holistic view of the effects of urban heat island mitigation'
- 19. Mattheos Santamouris and Dionysia-Denia Kolokotsa 'Urban micro climates: mitigating urban heat stress'
- 20. Lutz Katzschner and Sabrina Campe \Urban heat islands: case studies from Frankfurt, Kassel and Ho-Chi-Minh City'
- 21. Boon Lay Ong 'The green plot ratio and the role of greenery in low carbon living'
- 22. Steve Kardinal Jusuf, Nyuk Hien Wong and Zhun Min Adrian Chong 'The impact on the increase of urban air temperature on planning and building energy consumption in the tropics'
- 23. Yukiko Yoshida and Toshio Ichinose 'Energy reduction using natural ventilation in city planning'
- 24. Nigel Tapper, Andrew Coutts, Margaret Loughnan and Devna Pankhania 'Urban vulnerability to climate extremes: mitigating urban heat through technology and water-sensitive urban design'
- 25. Steffen Lehmann and Ehsan Sharifi 'Public space in times of heat stress: heat island mitigation strategies in the canopy'

Annotated Bibliography Glossary of Urban Terms Index