

# Enabling Eco-Cities

Dominique Hes • Judy Bush  
Editors

# Enabling Eco-Cities

Defining, Planning, and Creating a Thriving Future

palgrave  
macmillan

*Editors*

Dominique Hes  
Thrive Research Hub, Faculty of  
Architecture, Building and Planning  
University of Melbourne  
Parkville, VIC, Australia

Judy Bush  
Thrive Research Hub, Faculty of  
Architecture, Building and Planning  
University of Melbourne  
Parkville, VIC, Australia

ISBN 978-981-10-7319-9      ISBN 978-981-10-7320-5 (eBook)  
<https://doi.org/10.1007/978-981-10-7320-5>

Library of Congress Control Number: 2018931907

© The Editor(s) (if applicable) and The Author(s) 2018

This work is subject to copyright. All rights are solely and exclusively licensed by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, express or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Cover pattern © Melisa Hasan

Printed on acid-free paper

This Palgrave Pivot imprint is published by Springer Nature

The registered company is Springer Nature Singapore Pte Ltd.

The registered company address is: 152 Beach Road, #21-01/04 Gateway East, Singapore 189721, Singapore

*To those working towards a thriving future, and to our kids and grandkids,  
and their place within the wonder and awe of our amazing planet.*

## FOREWORD

We have entered the so-called urban age—a time when human prospect depends as never before on the sustainability of cities and larger human settlements. The concept of the Anthropocene, widely debated in the sciences, reminds us that the future of non-human existence—indeed, planetary well-being—will be decided by our increasingly urban species. Aside from rapid urbanisation, a set of great and inevitable transitions is underway—in climate systems, human settlement and movement, the integrity of the biota, and political organisation and expression, to name a few. Epochal change is inevitable and in motion. The challenge is to prevent the destructive, limiting changes from gaining the upper hand and to give precedence and strength to those forces and aspirations that seek to turn the crisis around and drive us towards a new age of natural—*human and non-human*—flourishing.

In this context, my colleagues Dominique Hes and Judy Bush have produced a valuable, insightful, and timely collection of essays based on their discussions at the recent (July 2017) Ecocity World Summit, which was hosted in Melbourne, a city that choruses globally about its liveability. Who can argue with the notion of liveability, a notion that speaks directly to the fundamental, everyday experience of human life? And yes, as necessary and obvious as the term is, it is also clearly an inadequate expression of what we must strive for in an urban age imperilled by ecological risk and social stress. Questions of social justice (liveability for who?), ecological integrity, and the future well-being (resilience) come to the fore when we commit to a more critical, searching mindset.

This critical, searching outlook informs the essays in this volume that capture the conversations and wisdom manifest in the Ecocity World Summit sessions. What makes these contributions especially exciting and constructive is that they reach beyond critique to consider prospects and pathways to the flourishing future that surely beckons, even in the teeth of epochal crisis. The eight authors in this volume, essay the many transitions that will need to be made at a variety of scales, from local to global, in quest for a healed and renewed world. In sympathy with the Summit and their own values, the accent is on the positive and the possible, not simply the fearsome testimony of risk and stress that our cities too often now betray. Note the language they use—thriving, renewing, innovation, creativity, participation, enabling—which expresses what we must hold to, the excitement and possibility that always emerges when one order is giving way to another.

Three cheers for the Thrive Hub at the University of Melbourne and its growing circle of partners, friends and readers. *Enabling Eco-cities* is another important and impressive milestone in the journey of this research community which, as this volume attests, dedicates itself to ‘To those working towards a thriving future; and to our kids and grandkids, and their place within the wonder and awe of our amazing planet’.

Director, Melbourne Sustainable Society Institute,      Brendan Gleeson  
Melbourne, VIC, Australia  
Co-chair Ecocity World Summit 2017

## PREFACE

In 2017, the Ecocity summit series came to Melbourne, Australia. This global event, the latest in an impressive lineage of conferences held every two years since 1990, aimed to explore pathways to more sustainable, resilient, and equitable cities. Its six major themes, climate and energy transformations, food and water security, smart cities for people, healthy and caring cities, culturally vibrant cities, and governance, infrastructure and finance, defined the context in which questions of understanding, imagining and creating ecocities were posed.

The Ecocity summit provided the opportunity and impetus for organising a conference session that brought together the research of a diverse group of people, all past or present PhD students of mine, all researching the transitions towards more resilient, adaptive and sustainable cities. Our group includes a planner, an ecologist, an architect and a theatre designer, linked together through the work of the Thrive Research Hub of the Faculty of Architecture, Building and Planning of the University of Melbourne. Our research seeks to understand how cities can be thriving parts of a resilient future.

Our conference session asked, ‘What is an ecocity? Is it the solution for the future and how can it be implemented?’ Based on our research, we addressed these questions through the lenses of regenerative development and sustainability transitions. To contextualise this work Lars Coenen joined me to write on regenerative development, transitions and smart specialisation to operationalise it in the city. Tanja Beer and collaborators described ways to engage, connect, celebrate and innovate; Judy Bush used green space policy approaches to discuss policy success factors and

narratives; Andréanne Doyon focused on understanding niches and how they support innovation and transition, and Angelica Rojas-Gracia presented case studies from three continents to show how design processes can achieve benefit and positive contribution.

Motivated by the active and enthusiastic response to our conference session, this book was created to disseminate our research and the practical tools and guidance to a wider audience. I hope that this book contributes towards practical efforts to create a thriving future in which our roles in environmental custodianship of the biosphere are underpinned by creativity, innovation, enthusiasm, a willingness to experiment and a sense of connection to people, place and culture at both local and global scales.

Parkville, VIC, Australia  
September 2017

Dominique Hes

## ACKNOWLEDGEMENTS

Tanja Beer and colleagues extend heartfelt thanks to all the fabulous people and organisations involved in the Ephemera project, and to the Armidale community for their love and support.

Judy Bush's research was supported by an Australian Government Research Training Program Scholarship (previously Australian Postgraduate Awards) and a Low Carbon Living Cooperative Research Centre scholarship.

Andréanne Doyon's research was supported by a Melbourne International Research Scholarship.

Angelica Rojas-Gracia's research was supported by an Australian Postgraduate Awards and the Norman Macgeorge Scholarship.

# CONTENTS

<b>1 Introduction: Creating Eco-Cities—From Sustaining to Thriving</b>	<b>1</b>
Dominique Hes and Judy Bush	
<b>2 Regenerative Development and Transitions Thinking</b>	<b>9</b>
Dominique Hes and Lars Coenen	
<b>3 Innovation: Creativity as a Renewable Resource for the Eco-City</b>	<b>21</b>
Tanja Beer, David Curtis, and Julie Collins	
<b>4 Urban Green Space in the Transition to the Eco-City: Policies, Multifunctionality and Narrative</b>	<b>43</b>
Judy Bush and Dominique Hes	
<b>5 Niches: Small-Scale Interventions or Radical Innovations to Build Up Internal Momentum</b>	<b>65</b>
Andréanne Doyon	

<b>6</b>	<b>Benefit Driven Design Process: An Inclusive and Transdisciplinary Approach Towards Enabling More Resilient and Thriving Outcomes</b>	<b>89</b>
	Angelica Rojas-Gracia	
<b>7</b>	<b>The Problem, the Potential, the Future: Creating a Thriving Future</b>	<b>109</b>
	Dominique Hes and Judy Bush	
	<b>Index</b>	<b>123</b>

## LIST OF CONTRIBUTORS

**Tanja Beer** is an award-winning ecoscenographer (ecological stage designer) and an academic fellow in performance design and sustainability at the University of Melbourne, Australia. She has more than 20 years of professional experience, including creating designs for projects in Australia and overseas. Her practice-led research integrates public art and theatre-making with urban ecology. Tanja's most significant work is *The Living Stage*, an award-winning global initiative that combines stage design, horticulture and community engagement to create recyclable, biodegradable, biodiverse and edible performance spaces. Her work has also been featured in exhibitions at the V&A Museum (London) and the 2015 Prague Quadrennial.

**Judy Bush** is a researcher and lecturer in environmental policy and practice at the University of Melbourne. She recently completed her PhD, 'Cooling cities with green space: policy perspectives'. She has previously worked as the executive officer of the Northern Alliance for Greenhouse Action, a local government alliance in Melbourne working on climate change action, and at Merri Creek Management Committee, working on habitat restoration and community engagement. She has a Masters of Environmental Studies and a Bachelor of Science (Hons).

**Lars Coenen** is an interdisciplinary scholar cross-cutting the fields of innovation studies, economic geography and science and technology studies. His research interests converge around the geography of innovation: Why is it that some regions and cities in the world stand out in their ability to foster and diffuse novelty? What explains this spatial concentration of

innovation in an era of globalization? How can regions and cities improve their capacity to innovate? In particular he is interested in addressing this broad set of questions on innovations related to pressing societal challenges such as climate change.

**Julie Collins** has a PhD in the ecological humanities (Charles Sturt University) and is an academic at the University of New England (UNE), working in the areas of indigenous studies, theatre studies and education. Julie is also a community artist and in 2016, was a co-creator of the eco-drama performed on Tanja Beer's Living Stage as part of the Black Gully Music Festival. Her research interests include the role of immersive theatre and storytelling in evoking empathy and transforming behaviour in environmental and social justice contexts. Julie is also currently researching the role of experiential learning on Country in Aboriginal education.

**David Curtis** is founder of EcoArts Australis Inc. An ecologist and social scientist, David holds an honorary position at the Institute of Rural Futures at the University of New England. His career has spanned ecological and sociological research, environmental restoration, education and outreach, and natural resource management policy. He has written extensively on rural and urban ecological sustainability and the arts and environmental behaviour. He organised several multi-arts events celebrating ecological sustainability, some of which have had audiences of thousands of people and participation of hundreds. He recently published a graphic novel about reversing eucalyptus dieback called *Dazed by Dieback*.

**Andréanne Doyon** is a lecturer in sustainability and urban planning at RMIT University. She completed her PhD at the University of Melbourne in the Faculty of Architecture, Building and Planning. Her doctoral thesis investigated how planning for urban resilience is informed by niche interventions. Currently, her research and teaching are focused on urban planning and governance related to sustainability and resilience. Previously, she worked for the City of Vancouver and the University of British Columbia in planning and research in sustainable development, urban revitalization and integrated thinking. She has a bachelor of arts and a master of arts planning from the University of British Columbia.

**Dominique Hes** is an award-winning author and educator in the field of sustainability and the built environment. Her work aims to constructively critique the current approach to development and to undertake grounded projects to investigate alternatives to current business and usual. This has

led to the investigation of approaches such as regenerative development, positive development, biophilia, biomimicry and permaculture as models for future practice. With degrees in science engineering and architecture, she brings a multidisciplinary approach to understanding the current problems of attaining sustainability and future solutions to a thriving future.

**Angelica Rojas-Gracia** is an architect and PhD candidate at the University of Melbourne. Her research investigates the role that the design process can have in supporting the social-ecological system. She is co-founder of incluDesign, a collaborative practice that aims to support ecosystems while expanding the accessibility of design services to wider populations. She holds a position as senior urbanist at Ethos Urban and has taught design studios and regenerating sustainability subjects at the University of Melbourne. Angelica combines research and practice and is particularly interested in the feedback loops and synergies between practice, research and teaching.

## LIST OF FIGURES

Fig. 2.1	Cheonggyecheon river in Seoul, South Korea, before ‘daylighting’. Source: CA Landscape Design Co., Ltd	13
Fig. 2.2	Cheonggyecheon river in Seoul, South Korea, after ‘daylighting’. Source: CA Landscape Design Co., Ltd	13
Fig. 2.3	Zollverein, UNESCO World Heritage Site and the regional museum of the Ruhr Area. Source © Jochen Tack/Stiftung Zollverein	17
Fig. 3.1	Willow-weaving workshop with Steiner school students. Photo: Laszlo Szabo	28
Fig. 3.2	Building the Bower Stage with the Backtrack Boys. Photo: Laszlo Szabo	29
Fig. 3.3	Inside the Bower design with living globes created by the community. Photo: Laszlo Szabo	30
Fig. 3.4	The water scene from Armidale’s ecodrama. Photo: Laszlo Szabo	32
Fig. 3.5	Storytelling for young children and their families in the Bower. Photo: Laszlo Szabo	33
Fig. 4.1	Policy domains that address urban green space	51
Fig. 4.2	Policy mechanism categories and the transition trajectory to eco-cities	55
Fig. 5.1	The s-curve (adapted from Rotmans et al. 2001)	71
Fig. 5.2	Multi-level perspective as a nested hierarchy (adapted from Geels 2002)	72
Fig. 5.3	Illustrations of change (adapted from Gunderson and Holling 2002)	77
Fig. 5.4	Planning for eco-cities through niche interventions	78

Fig. 6.1	Visual representation of the new school. Source: incluDesign	102
Fig. 6.2	Visual representation showing the children of village in their future school. Source: incluDesign	103
Fig. 6.3	Children of the village looking for representations of themselves in their future school. Source: FONA	104
Fig. 6.4	Cultural ceremony and performance celebrating a new beginning. Source: FONA	105

# LIST OF TABLES

Table 4.1	Policy analysis framework, adapting Transition Management elements	48
Table 4.2	Urban ecosystem services and associated policy domains	50
Table 4.3	Urban green space policy mechanisms	53
Table 4.4	Policy mechanisms and associated outcomes sought	55
Table 4.5	Policy success factors	59
Table 6.1	Benefit-driven design process: Enabling capabilities and activities	101