An aerial photograph of a modern urban park. A wide, curved wooden walkway with glass railings runs diagonally across the upper half of the image. Several people are walking or sitting on benches along this path. Below the walkway, a dense, lush green landscape is filled with various trees and plants. A small, dark, triangular structure is visible in the center of the greenery. The overall scene is bright and vibrant, showcasing a well-designed biophilic environment.

Handbook *of* Biophilic City Planning & Design

TIMOTHY BEATLEY

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Timothy Beatley

Washington | Covelo | London

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To Anneke, Caro, and Jadie

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Preface

This handbook is about the power of nature to create better, more livable, sustainable, and resilient urban neighborhoods and environments.

It is intended to be useful in several ways. First, it provides a comprehensive guide to biophilic urbanism and urban practice, with a wealth of information about how cities can integrate nature into their planning and design processes and projects.

Second, it offers inspiration for how cities of the future might look, feel, and function. As we move into the urban age, we are desperately in need of new models, examples, and frames of reference for the relationship between urban and natural environments. This book also provides more than a modicum of hope in an age where climate change and global environmental degradation cause concern about the future of human and nonhuman life on Earth. While the tools, ideas, strategies, and emerging urban practices reported in these pages do not represent a complete antidote to these global challenges—indeed, what book could?—they are a considerable step in the right direction.

This book synthesizes and expands on the research conducted by the Biophilic Cities Project at the University of Virginia. Begun in 2011, the Project sought to apply the ideas, principles, and practices of the emerging biophilic design movement to the larger scale of cities and metropolitan areas. Focused initially on seven partner cities within the United States and around the world (later expanded to ten cities included in the 2013 Biophilic Cities exhibition and launch event), researchers, practitioners, and politicians collaborated to develop ideas about what a biophilic city is and what it could be in the future.

Much of the work in the initial years of the project focused on fleshing out the concept of biophilic urbanism, and telling the stories of cities leading the way. In October 2013, the Project expanded with the launch of a global Biophilic Cities

Network, which is intended to help foster a common agenda and a mechanism for sharing insights and collaborating across cultures and geographic boundaries to reimagine a planet of cities that not only value and respect nature but also make it a centerpiece of future design and planning.

Building from the Biophilic Cities Network's efforts, this handbook is intended to advance and solidify some of these nascent ways of understanding and speaking about nature in cities. While we continue to understand and embrace the value of concepts and language—like sustainable cities, resilient cities, regenerative cities—we believe the emphasis on *biophilic cities* is a useful and necessary addition.

Why? Don't we already speak compellingly of green cities and green infrastructure? Yes, but those descriptors fall short in significant ways. *Greening cities* is more often understood in terms of the many ways that buildings and neighborhoods can reduce energy consumption and lower ecological footprints. These are important goals, but they don't tell us much about the kinds of neighborhoods, communities, and cities we wish to live in, and they understand nature as only one of many green design and planning arrows in the quiver.

Biophilic, in its emphasis on both the natural world and living things (*bio*) and the connections with and love of nature (*philia*), captures more squarely what cities and city planning and design need today. We need something more than nature that serves as infrastructure—we need to speak compellingly and passionately about the need to nurture, protect, care for, and connect with nature. We need to connect with nature for our health and well-being, as scientific evidence increasingly tells us, and *biophilic cities* captures this importance of urban nature in a way that other contemporary words or language cannot.

What follows are many stories and examples of emerging practice. Part 1 summarizes key ideas, theory, and literature that define *biophilic cities* and *biophilic urbanism*. Parts 2 and 3 represent the bulk of the handbook. Part 2 contains full-length chapters on the main cities that the Biophilic Cities Project research has focused on for several years. These cities are also inaugural cities in the new global Biophilic Cities Network. Part 3 features a rich array of shorter examples of urban biophilic innovation from cities around the world. Part 4 presents reflections and lessons about how to advance urban biophilia and biophilic cities. The book closes with a bibliography and an extensive list of resources, including leading books and online resources.

Together the chapters provide a comprehensive understanding of both the theory and the practice of biophilic cities. It is a practical mix of ideas and principles, current urban practice, and future aspirations. The reader will see that much has already been done, or is under way, in cities around the world.

These are daunting times in terms of the challenges cities face in the decades ahead, but they are also exciting times, when cities are making room for nature, appreciating the importance of nature to health and well-being and to leading meaningful lives.

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Significant financial support for the Biophilic Cities Project and the event launching the global Biophilic Cities Network was also provided by the George Mitchell Foundation. George Mitchell sadly passed away in 2013, but he will be remembered as a leader and catalyst for sustainable, biophilic design, as evidenced in his work

with Ian McHarg in designing and building the Woodlands, a green new town ahead of its time. It was a pleasure to get to know George Mitchell, and an honor to have his personal and financial support for the work we have been doing in green urbanism and biophilic cities.

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Several of the chapters to follow draw from earlier writing. Some material has appeared earlier in our Biophilic Cities blogs. Several chapters in part 2 draw from earlier published work. An earlier version of the Singapore chapter was published in *SiteLines* (Foundation for Landscape Studies), and a version of the Oslo chapter was published earlier in the book *Green Oslo: Visions, Planning and Discourse* (Ashgate), though both have been substantially modified. Two of Beatley's EverGreen columns written for *Planning Magazine* (longer drafts) make up portions of the chapters on Birmingham and San Francisco.