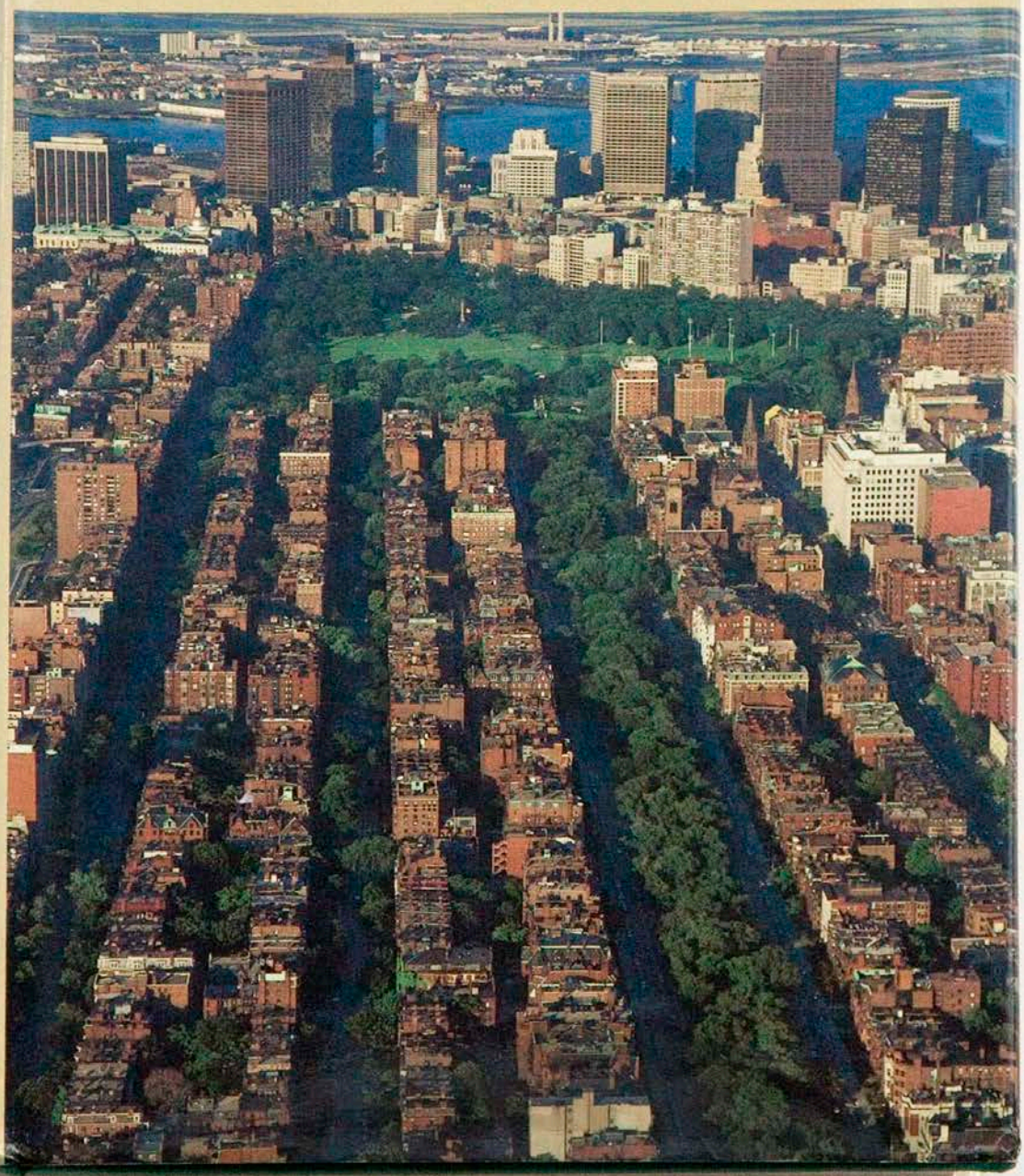
THE GRANITE GARDEN

Urban Nature and Human Design

ANNE WHISTON SPIRN



THE GRANITE GARDEN

1984/2018

The Granite Garden

President's Award of Excellence,
American Society of Landscape Architects, 1984

One of the "Essential Books of Planning," which "touched off the ecological urbanism movement."
American Planning Association, 2009

"If you care about cities, as they are or as they might be, don't miss *The Granite Garden*. I am filled with admiration for this book—for its truly remarkable practicality, its uncommon precision, its unique scope and sweep. Fascinating reading for anyone, this is required reading for professionals. It is also an invaluable reference work. Never before has anyone pulled together such a wide range of environmental information and applied it in a coherent and practical way to the situation of the city. At the end of her book, the author offers us something of a utopia, but, unlike earlier visions of the city, hers seems possible. Anne Whiston Spirn has made a splendid contribution and here emerges as a leading spokesperson for the city."

JANE JACOBS, author of *The Death and Life of Great American Cities*

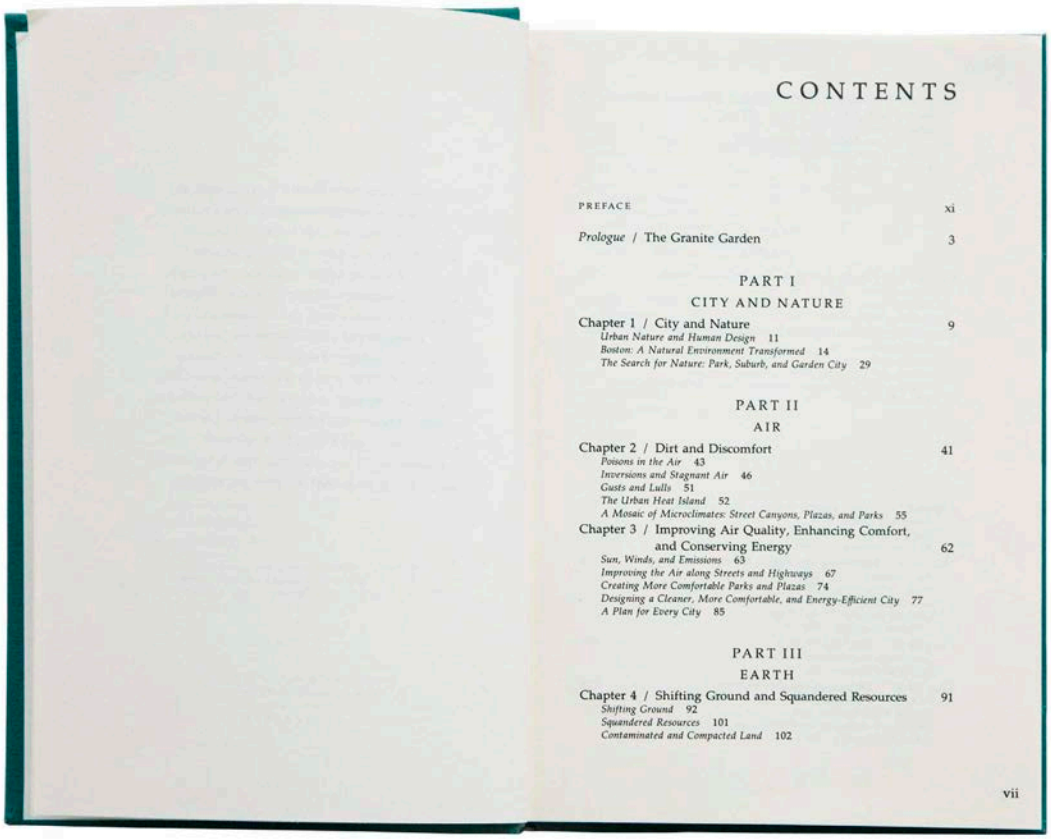
The Granite Garden "touched off the ecological urbanism movement," according to the American Planning Association. *The Granite Garden* is a book about nature in cities and what the city could be like if designed in concert with natural processes, rather than in ignorance of them or in outright opposition. It presents, synthesizes and applies knowledge from many disciplines to show how cities are part of nature and to demonstrate how they can be planned and designed in concert with natural processes rather than in conflict.

My goal was to transform the way people think about cities and thus to change the way cities are designed and built. So I wrote the book for a broad audience—for journalists, politicians, developers, and city dwellers, as well as for designers and planners, for practitioners as well as academics. The book was widely reviewed in the general press, such as *The New York Times* and *Washington Post*, and in professional journals. It inspired editorials and provoked public debate about urban nature and city design.

Historians credit *The Granite Garden* as the first example of urban environmental history; it inspired a new generation of scholars whose books on the environmental history of particular cities are now winning awards. Others cite the book as the way they first learned about landscape architecture and urban design and the reason they entered their profession.

The Granite Garden is still in print. It has been translated into Japanese, Chinese, and Portuguese, and excerpts have been published in books about design and design theory. Widely read by a general audience, it is still a standard university text in many subjects, from architecture, landscape architecture, and urban design and planning to urban and environmental studies, geography, and history. A new, expanded electronic edition (2018) features new cases and reflects on changes since 1984.

Left *The Granite Garden* is still in print, and the 2018 electronic edition invents a new kind of reading experience.



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The Granite Garden is organized by sections on air, earth, water, life, and ecosystems. The book describes comprehensive strategies for sweeping change as well as incremental solutions.

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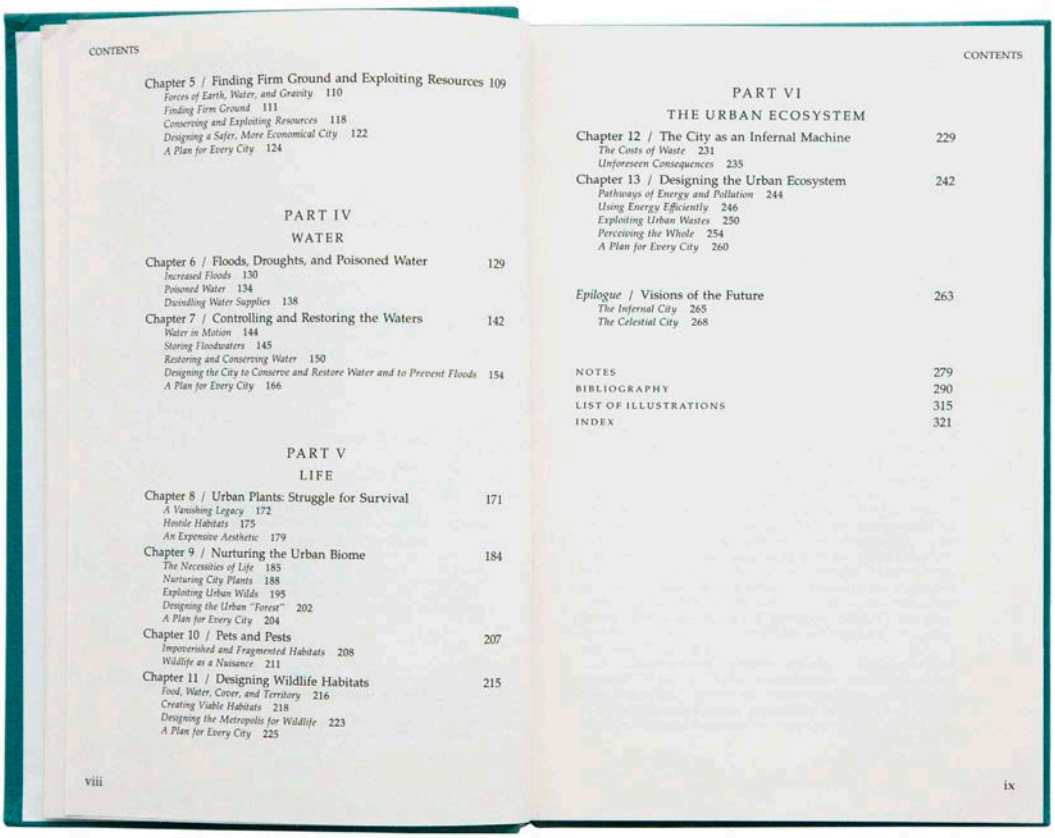
"*The Granite Garden* (1984), single-handedly reinvigorated the urban ecology movement and its connection to design and planning, and is widely regarded as the most important book authored by a landscape architect in a generation."
ALAN BERGER, Professor of Urban Design and Landscape Architecture, MIT

"Nearly three decades after its original publication…*The Granite Garden* remains one of the clearest, most cogent meditations on the power of landscapes as metropolitan systems."
JANE WOLFF, Associate Professor of Landscape Architecture, University of Toronto



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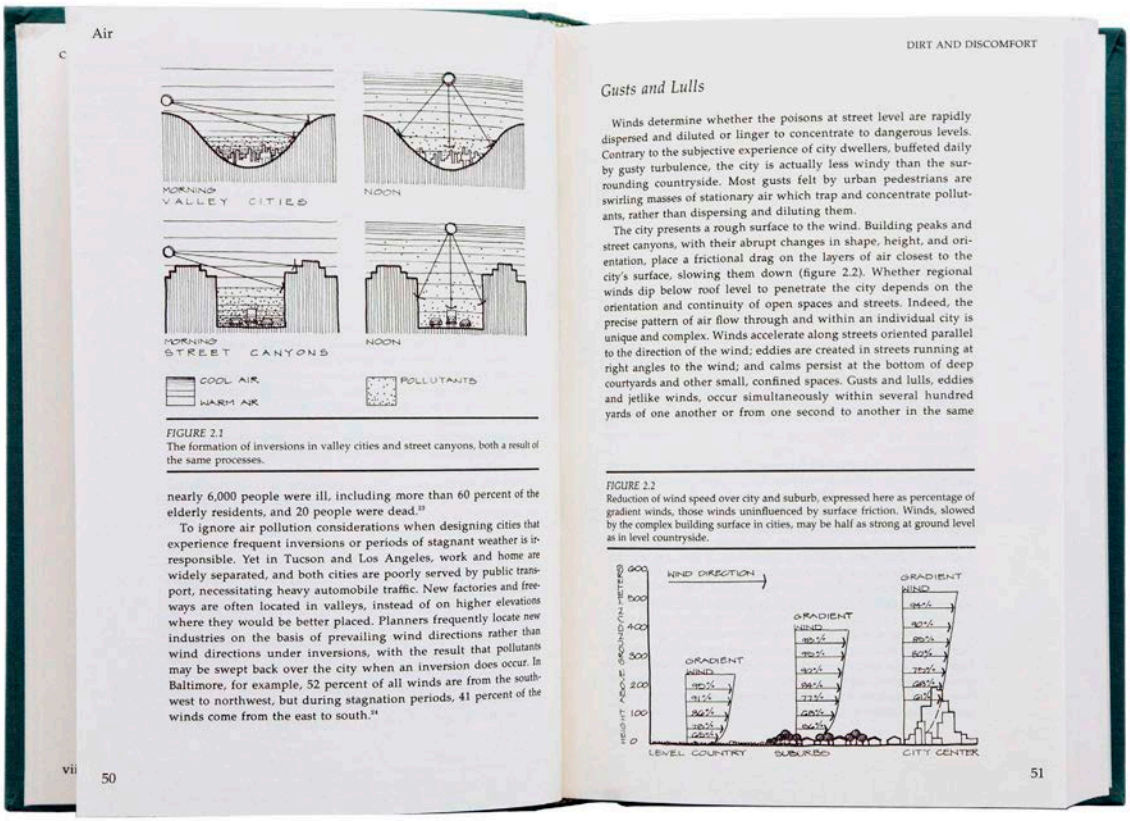
"*The Granite Garden* inspired myself and other practitioners in the fields of watershed health, urban design, and land use planning in our region. It also informed much of the work that both the NGO community and government agencies have pursued over the intervening twenty-eight years to provide access to nature, manage stormwater in more ecologically sustainable ways and generally do a better job of integrating nature into the urban environment." **MIKE HOUCK**, Executive Director, Urban Greenspaces Institute

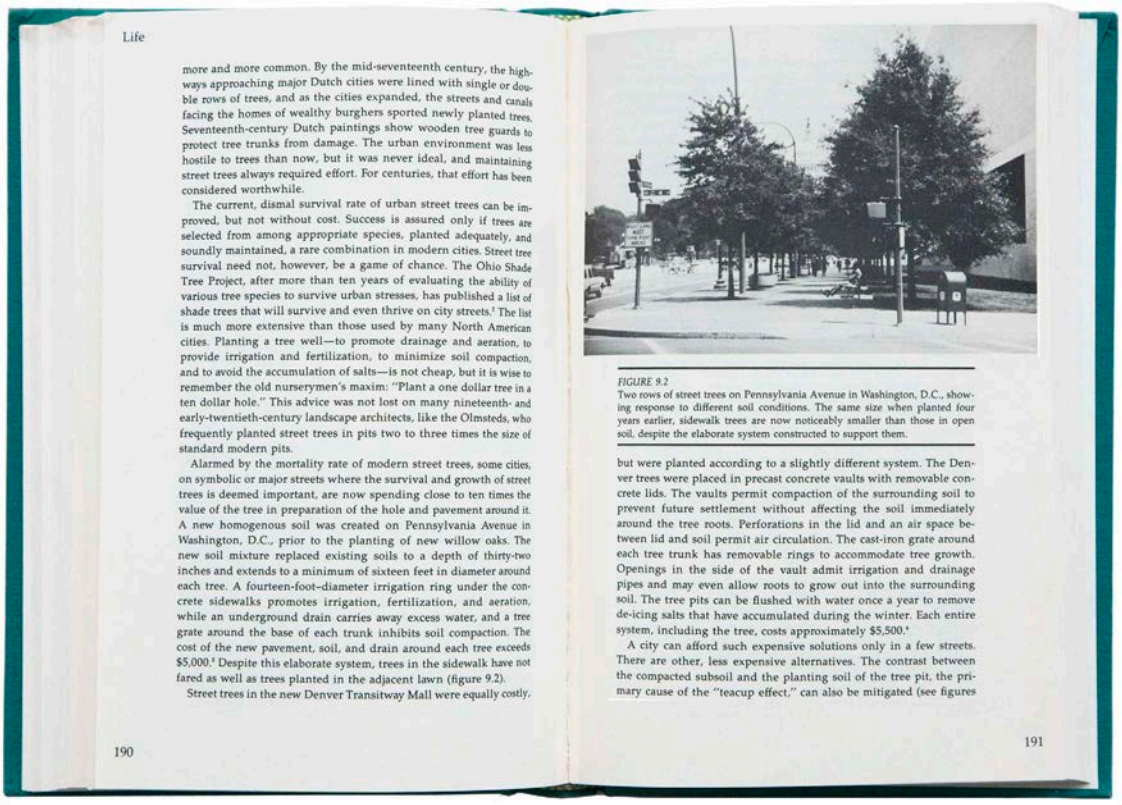
"The Granite Garden, quite simply, shaped much of my research and practice. I …read her book and was convinced that urban design needed to be at the center of the work colleagues and I were developing to connect Penn with the West Philadelphia community. That work, significantly inspired by Spirn's work and writing, led to the creation of the Netter Center for Community Partnerships… Its work has been adapted across the United States and around the world."
IRA HARKAVY, Associate Vice President, University of Pennsylvania



Diagrams demonstrate how natural processes shape the city and interact with the urban fabric. Photographs and drawings illustrate successful designs from scales of house and garden to city and region.

"*The Granite Garden* . . . pioneered the field of landscape urbanism by examining the role of natural ecosystems in urban design. This study continues to influence the development of this important field today, which is at the forefront of professional practice."
REUBEN RAINEY, Emeritus Professor of Landscape Architecture, University of Virginia

"In *The Granite Garden*, [Spirn] launched a revolution in thinking about the relationship between nature, the urban environment, and we who inhabit these realms . . . the kind of thinking that today underlies Landscape Urbanism, Ecological Urbanism, Sustainable Urbanism . . . . Anne was the first to understand and articulate these concepts to a broad audience. And she was among the first to practice and teach it." **DENNIS FRENCHMAN**, Professor of Urban Design, MIT



Life

more and more common. By the mid-seventeenth century, the highways approaching major Dutch cities were lined with single or double rows of trees, and as the cities expanded, the streets and canals facing the homes of wealthy burghers sported newly planted trees. Seventeenth-century Dutch paintings show wooden tree guards to protect tree trunks from damage. The urban environment was less hostile to trees than now, but it was never ideal, and maintaining street trees always required effort. For centuries, that effort has been considered worthwhile.

The current, dismal survival rate of urban street trees can be improved, but not without cost. Success is assured only if trees are selected from among appropriate species, planted adequately, and soundly maintained, a rare combination in modern cities. Street tree survival need not, however, be a game of chance. The Ohio Shade Tree Project, after more than ten years of evaluating the ability of various tree species to survive urban stresses, has published a list of shade trees that will survive and even thrive on city streets.[3] The list is much more extensive than those used by many North American cities. Planting a tree well—to promote drainage and aeration, to provide irrigation and fertilization, to minimize soil compaction, and to avoid the accumulation of salts—is not cheap, but it is wise to remember the old nurserymen's maxim: "Plant a one dollar tree in a ten dollar hole." This advice was not lost on many nineteenth- and early-twentieth-century landscape architects, like the Olmsteds, who frequently planted street trees in pits two to three times the size of standard modern pits.

Alarmed by the mortality rate of modern street trees, some cities, on symbolic or major streets where the survival and growth of street trees is deemed important, are now spending close to ten times the value of the tree in preparation of the hole and pavement around it. A new homogenous soil was created on Pennsylvania Avenue in Washington, D.C., prior to the planting of new willow oaks. The new soil mixture replaced existing soils to a depth of thirty-two inches and extends to a minimum of sixteen feet in diameter around each tree. A fourteen-foot-diameter irrigation ring under the concrete sidewalks promotes irrigation, fertilization, and aeration, while an underground drain carries away excess water, and a tree grate around the base of each trunk inhibits soil compaction. The cost of the new pavement, soil, and drain around each tree exceeds $5,000.[4] Despite this elaborate system, trees in the sidewalk have not fared as well as trees planted in the adjacent lawn (figure 9.2).

Street trees in the new Denver Transitway Mall were equally costly,

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FIGURE 9.2
Two rows of street trees on Pennsylvania Avenue in Washington, D.C., showing response to different soil conditions. The same size when planted four years earlier, sidewalk trees are now noticeably smaller than those in open soil, despite the elaborate system constructed to support them.

but were planted according to a slightly different system. The Denver trees were placed in precast concrete vaults with removable concrete lids. The vaults permit compaction of the surrounding soil to prevent future settlement without affecting the soil immediately around the tree roots. Perforations in the lid and an air space between lid and soil permit air circulation. The cast-iron grate around each tree trunk has removable rings to accommodate tree growth. Openings in the side of the vault admit irrigation and drainage pipes and may even allow roots to grow out into the surrounding soil. The tree pits can be flushed with water once a year to remove de-icing salts that have accumulated during the winter. Each entire system, including the tree, costs approximately $5,500.[4]

A city can afford such expensive solutions only in a few streets. There are other, less expensive alternatives. The contrast between the compacted subsoil and the planting soil of the tree pit, the primary cause of the "teacup effect," can also be mitigated (see figures

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"Anne pointed the way towards a sustainable future long before sustainability entered the professional lexicon.... *The Granite Garden* has since served as a foundation for new vital strands of practice, such as Landscape Urbanism."
IGNACIO BUNSTER, Principal, WRT

"*The Granite Garden* is unique in offering a broad audience some of the ways landscape architecture can creatively apply its tools and techniques to improve the quality of urban life. The author has placed the book in context with earlier efforts by Halprin and McHarg within our profession. Beyond that, it ranks as a contribution to national design dialogue along with the works of Jane Jacobs and Lewis Mumford, Anne Whiston Spirn brings honor to the profession and the profession is honored to count her as one of us." **ASLA AWARD JURY COMMENTS,** 1984

THE GRANITE GARDEN: URBAN NATURE AND HUMAN DESIGN

PRESIDENT'S AWARD OF EXCELLENCE/ *Communication*

Landscape Architect Anne Whiston Spirn

JURY COMMENTS

The jury was fortunate to have a publication of this quality, originality and significance to which to respond. *The Granite Garden* is unique in offering a broad audience some of the ways landscape architecture can creatively apply its tools and techniques to improve the quality of urban life.

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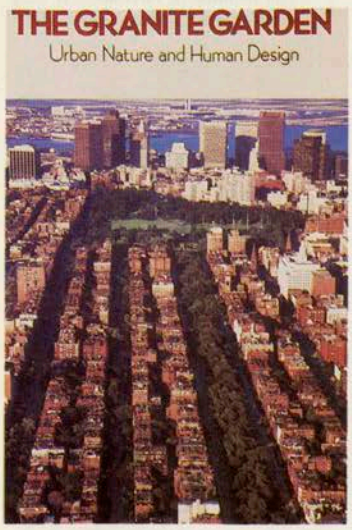


THE PROJECT

This is a book about nature in cities and what the city could be like if designed in concert with natural processes, rather than in ignorance of them or in outright opposition. It reviews comprehensive strategies for sweeping change most readily implemented in rapidly growing cities, as well as incremental solutions more appropriate to the gradual redesign of existing cores. It focuses on the look and shape of the city, especially the open space in which buildings are set.

The basic philosophy that underlies the book is that the city is a part of nature, rather than antithetical to it. This idea has profound implications for how the city is designed, built, and maintained for the health, safety and welfare of every city resident. The book surveys what is currently known about the natural environment of the city: its air quality and climate, its geology and soil, its water dynamics and quality, its plant and animal communities, and the processes of the urban ecosystem. The book describes the consequences of disregarding nature in urban design and offers potential solutions.

The Granite Garden summarizes what we know about urban nature and demonstrates how this knowledge can be applied to the design of parks, plazas, buildings, streets and highways, and other public works. There are other books about nature in the city, but this is the first book by a single author that provides a comprehensive overview of the subject. If we are to address the problem of the city in any meaningful way, we must look beyond narrow solutions to short-term problems and strike at the heart of the problem with long-term, comprehensive strategies.

The rewards for designing cities in concert with nature apply to all cities across the globe, old and new, large and small. Opportunities for change are most sweeping in new settlements, but even old and dense cities are constantly being redesigned and rebuilt. The investment required to upgrade the infrastructure of older cities will require billions of dollars in North America alone. The opportunities for a fresh approach to resources and waste are enormous, but the potential for costly blunders is vast. This book outlines how cities in general and landscape architects in particular can take advantage of this effort to design cities that are safer, healthier, more economical to build and maintain, more beautiful, and more memorable.

Nature in the city is rain and the rushing sound of underground rivers buried in storm sewers.

Urban wilds represent an aesthetic alternative to formal parkland and an opportunity to provide more parks on reduced maintenance budgets. The Boston Redevelopment Authority has inventoried the city's remaining natural areas. This study identified 2,000 acres of urban wilds, nearly seven percent of the city's land, as natural areas worthy of conservation.

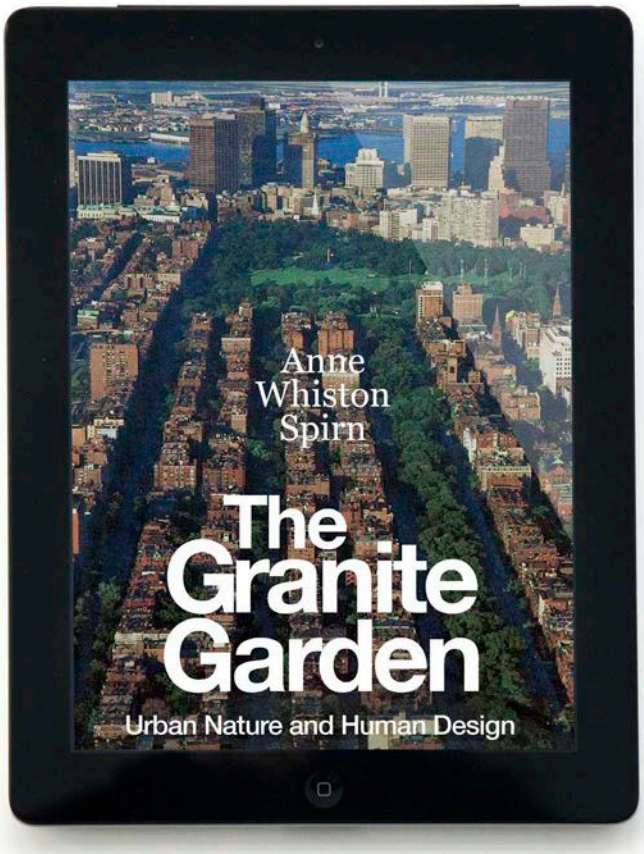
"30 Years after The Granite Garden: Where Do We Stand?" Panel at the 2014 Annual Meeting of the ASLA. Ignacio Bunster-Ossa, Anne Whiston Spirn, Frederick Steiner, and Elizabeth Meyer.

New E-book Edition and Website

2014 marked the 30th anniversary of the book's publication. The occasion was celebrated by numerous publications and events and by the production of a new and expanded electronic edition of the book (2018).

The book's original publication in January 1984 coincided with the release of the first MacIntosh computer to use a graphical interface and mouse. Although puny in capacity, those early personal computers ushered in a revolution in visualizing, collecting, and processing information, which led, in turn, to a transformation of knowledge about the relationship between the natural environment and the design of cities. The new edition reflects upon that transformation, about what has changed and what has remained the same over the past 30 years. It describes new trends and new cases of successful adaptation of city design to urban nature.

The new e-book is designed to be read in two ways: through verbal text (with links to images and captions) or as an essay of images and captions (with links to the book's text). This is a new kind of reading experience.



A new e-book edition reflects on what has changed since 1984, reviews new research and describes new cases of successful design. Publishing it as an e-book makes possible the affordable price of $4.99.

Left New electronic edition of *The Granite Garden* (2018).

Below A new website (www.granitegarden.net) features successful cases of ecological urbanism, which are searchable by keywords.