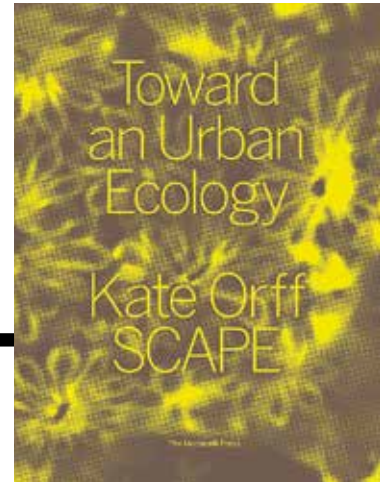


CONSTRUCTING NATURE

TOWARD AN URBAN ECOLOGY

BY KATE ORFF/SCAPE; NEW YORK: MONACELLI PRESS, 2016;
272 PAGES, \$50.

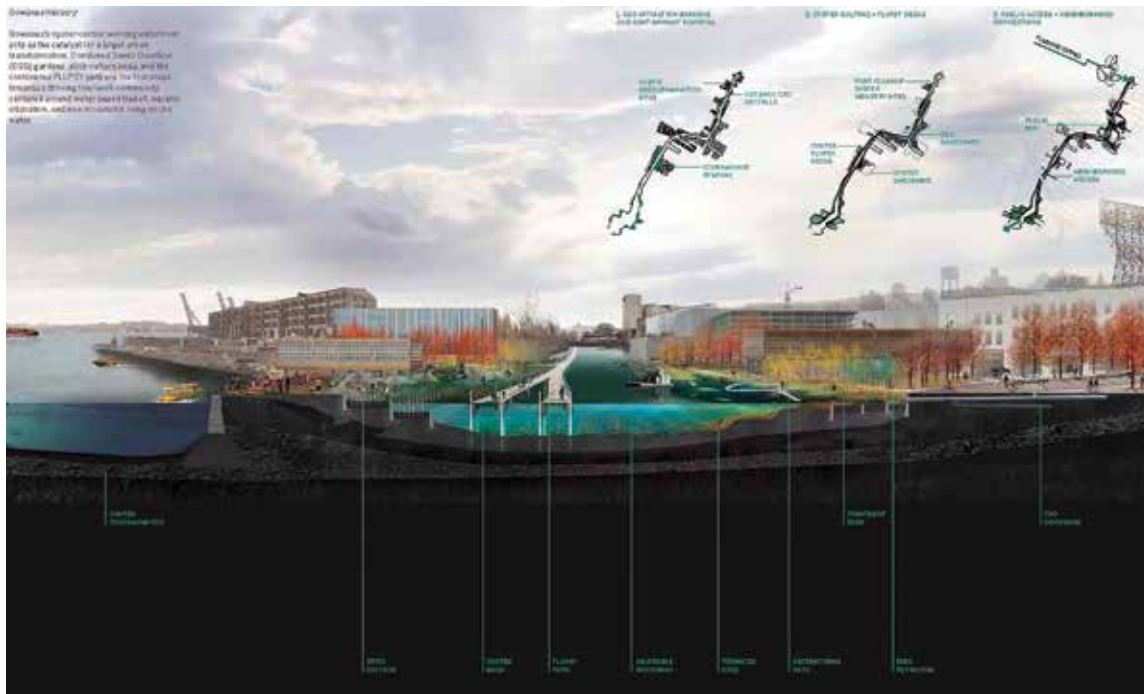
REVIEWED BY ELISSA ROSENBERG



“*The city is part of nature.*”

Anne Whiston Spirn, FASLA, wrote these words some 30 years ago in her influential book, *The Granite Garden: Urban Nature and Human Design*. There she argued for a new approach to urban design that would take into account the complex interaction between social and natural processes. “Nature” and the “city” could no longer be thought of as polar opposites. The 19th-century view of nature as a pastoral refuge from the city that had come to operate as a default mode in urban landscape design was replaced by a more integrated conception where city and nature are inextricably connected. This is the basic shift that occurred with the rise of the discipline of urban ecology, which Ian McHarg, Spirn’s mentor, drew from and popularized in his groundbreaking book *Design with Nature* (1969). McHarg applied ecological principles not only to the planning of the seemingly pristine landscapes of his early practice, such as Maryland’s horse country and New Jersey’s coastal dunes, but later, and perhaps more significantly, to the disturbed, complex, and constructed “nature” in the city. The key lesson from McHarg’s planning method and Spirn’s case studies is that the design of the city cannot be separated from the natural systems on which its stability and survival depend.

In *Toward an Urban Ecology*, Kate Orff, ASLA, offers a contemporary look at the meaning of urban ecology for landscape practice. Orff is the founding partner of SCAPE; an associate professor at the Columbia University Graduate School of Architecture, Planning, and Preservation, where she has been serving as director of the Urban Design Program since 2015; and a co-director of the Urban Landscape Lab, a research incubator. She is a coauthor, with Richard Misrach, of *Petrochemical America* (see “What Kate Orff Sees,” *LAM*, May 2012) and a coeditor and author of the book *Gateway: Visions for an Urban National Park*. Her newest book, a “manifestograph,” as she calls it—“part monograph, part manual, part manifesto”—documents the work of SCAPE, the landscape architecture and urban design practice that she founded in 2005. This hybrid characterization of the book’s format and goals reflects Orff’s identity as both practitioner and academic; it also reflects the book’s ambition. In her introduction, she acknowledges the recent developments in landscape architecture theory and practice that have taken place as a result of the work of McHarg and Spirn, who made ecological thought central to the work of landscape architects. She cites the emergence of landscape urbanism, landscape as art, and landscape infrastructure as examples of the field’s reinvention. But Orff does not directly align her work with any



ABOVE AND BELOW

For the Museum of Modern Art's *Rising Currents* exhibition, oyster farming was proposed to filter the contaminated water of Brooklyn's Gowanus Canal. A series of floating chambers that circulate nutrient-rich water encourages the growth of the juvenile oysters.

of these approaches. The book's polemical tone and manifesto-like format set the work off from these frameworks, arguing for a vision of the urban landscape that is distinct, transformative, and urgent. This vision stresses the social and cultural potential of urban ecology, based on an idea of landscape that is "design driven, participatory, and science based." The firm's work is presented as a broad call to action.

What is most innovative in SCAPE's practice is the way that these three aspects—design, science, and community participation—are engaged to create an activist, collaborative methodology. The practice is fundamentally research driven, but also animated by a strong design ethos. Ecological issues are seen as a driver for community involvement. They are not part of an abstract agenda but touch on everyday lived experience in the city. SCAPE's mission is based on a "collaborative, community-stewardship-driven methodology that acknowledges change and uncertainty." A wide array of techniques is used to generate citizen engagement, including mapping, storytelling, and community organizing.

The book is divided into four chapters: "Revive," "Cohabit," "Engage," and "Scale." The hybrid form of monograph, manual, and manifesto is held together by the book's tight, though unconventional, format. Each chapter follows a consistent structure that contains some of each: a short introductory text; a single project presented through extensive plans, perspectives, and photographs; a manual of one-page "strategies" that outline specific themes such as "water harvesting," "bay nourishment," or "consensus building," each illustrated by a single

project; two interviews with varied project participants, including scientists and politicians; and a critical essay by contributing academic authors. This eclectic mix of genres and registers adds conceptual richness and visual density to the book. The effect is to convey a sense of energy through the multiple voices that are represented, stressing the dynamic and collaborative quality of the work through the range of people, ideas, and processes that have created it. Overall, the projects cohere into an impressive body of work that has come together in a little more than a decade.

The academic contributions offer a critical discussion of the projects and their larger themes: urban ecology, infrastructure, and the meaning of public landscapes. The authors include Jane Hutton, an assistant professor in landscape architecture at the Harvard Graduate School of Design; Thaisa Way, ASLA, an urban landscape historian and professor at the University of Washington; Emily Eliza Scott, a postdoctoral fellow in architecture at ETH Zurich; and Brian Davis, an assistant professor of landscape architecture at Cornell University. Interviews with diverse figures such as Mayor



SCAPE LANDSCAPE ARCHITECTURE DPC



TOP LEFT
Polypropylene “fuzzy rope” panels were installed off the Brooklyn waterfront in March 2013.

TOP CENTER
By June the ropes supported colonies of blue mussels and a variety of other species.

TOP RIGHT
The rope installation demonstrates that even simple materials can be used to help promote habitats in urban settings.

Jim Gray of Lexington, Kentucky; Bart Chezar, a citizen scientist involved in ecological restoration; and Eric Klinenberg, a professor of sociology and social infrastructure advocate, provide fascinating background on the ways in which the projects have taken shape.

SCAPE’s largest and perhaps most innovative project is known as *Living Breakwaters* in Staten Island, New York, which was developed to provide coastal resilience and prevent flooding associated with predicted sea-level rise. This was one of six winning proposals in the *Rebuild by Design* initiative, a global competition launched in 2013 by the federal government in partnership with local organizations after the devastation of Hurricane Sandy. The project, designed by an interdisciplinary team (with Parsons Brinckerhoff, Philip Orton, SeArc Ecological Consulting, LOT-EK, MTWTF, the Harbor School, and Paul Greenberg), reimagines how coastal infrastructure could act as a social and ecological catalyst in addition to reducing flood risk. A new system of breakwaters is proposed as part of a larger urban network that engages the waterfront neighborhoods located along the shoreline in order to strengthen their historical connection to the bay. The network includes a series of “water hubs,” or neighborhood facilities for recreational activities and educational programs. The breakwaters are designed not only to reduce wave action and slow erosion but also to restore marine ecosystems by providing new habitat. By using configurations and materials that mimic the “micro-complexity” of the historic reef habitats of the Raritan Bay, the breakwaters are able to provide shelter and feeding areas for local populations of finfish, lobsters, and shellfish. The project was planned in collaboration with the Billion Oyster Project

and the Harbor School, whose goals are to restore one billion oysters to the New York Harbor and train local school groups to monitor their growth and survival.

The oyster was already the subject of an imaginative proposal developed by SCAPE for the Museum of Modern Art’s 2010 *Rising Currents* exhibition that addressed climate change and the prospect of rising sea levels in New York City. Oyster-tecture, the somewhat tongue-in-cheek title of the project, proposed recultivating the historic oyster beds that once covered one quarter of the New York Harbor. A massive new reef would be created by seeding young oysters into a large armature of coarse rope floating in the New York Bay. The oyster larvae would be transferred from the contaminated, nutrient-rich Gowanus Canal in Brooklyn, where they would be raised in floating rafts located along the edges of the canal. These fantastical aquatic landscapes are also working landscapes; the reef would protect the shoreline, filter the harbor water, and provide a new public space for boating, walking, and marine habitat. Significantly, the proposal envisions oyster production as an incremental and community-based enterprise, based on a cottage industry of weavers and knitters. The MoMA installation included a mock-up of the rope armature that was created in a community “knitting party.” This crowdsourcing approach was also used in an experimental pilot project at Sims Habitat Pilot Pier in Brooklyn that tested the cultivation of new aquatic habitat in an industrial zone. Fourteen polypropylene panels woven by volunteers in a “Fuzzy Rope Weaving Evening” were used as “habitat probes” that successfully created new habitat for colonies of blue mussels, green crabs, and other species.



ABOVE
Living Breakwaters mimics the microcomplexity of natural reefs to provide diverse aquatic habitat.

BELOW
Located on Staten Island's southern shore, the project uses social and ecological elements in its coastal protection scheme.



Other SCAPE projects promote a kind of citizen science through the creative use of mapping and educational tools, suggesting that greater environmental literacy is the key to developing both stewardship and a more entrepreneurial or activist civic society. These take the form of manuals, urban walks, and community workshops that all serve to raise awareness about diverse ecological issues. They are intended to spur local engagement that may take the form of citizen monitoring of urban natural systems or debating alternative solutions to pressing urban environmental problems at the neighborhood scale. One particularly ambitious program is Safari 7, a project conceived through Columbia University's Urban

Landscape Lab (with Janette Kim and Glen Cummings of M+TWTF) for commuters traveling on New York City's 7 subway line. The Safari is a self-guided tour of urban wildlife and vegetation, using maps and podcasts to transform the subway into an urban classroom as it passes through New York's little-known landscapes—for example, the artificial U Thant Island in the East River, a nesting site for the

double-crested cormorant, or the Queens cemeteries and their decomposition cycles. Urban ecology crosses over into guerrilla art. Similar platforms have already been replicated in other cities such as São Paulo and Beijing.

SCAPE's emphasis on the performance of the landscape presents a transgressive and inventive take on the relationship of city and nature, based on the productive crossover of

constructed and natural elements. Urban ecological restoration is premised on interventions that blur these boundaries, as in SCAPE's constructed osprey nest structures, or mussel colonies forming on woven polypropylene rope. In contrast to the abstraction that characterizes many of the projects identified with landscape urbanism, these projects

locate "urban ecology" in everyday experience and urban processes. They depend on the immediacy of the granular microscale while addressing large-scale natural systems. The firm's research orientation is hands-on and field based, stressing empirical study and experimentation. These are the "safe-to-fail" experiments that the ecological planner Jack Ahern, FASLA, claimed, in the journal *Landscape Ecology*, are the key to expanding the knowledge base of adaptive design, which he defines as "a process/approach where selected urban plans and projects explore innovative practices and methods, informed by landscape ecology knowledge and research design, open to design innovations and creativity, and monitored and analyzed to learn from the experiment—with the goal of gaining knowledge to apply to future projects."

Experimentation is defined by its open-ended quality, and the unpredictable results that often challenge the initial hypothesis. In his interview, Bart Chezar, the citizen scientist/marine biologist who individually initiated a number of small-scale restoration projects in the New York Harbor, attributed his successes to his ability to work "on the edge." Orff noted that this metaphor is more accurate than thinking in terms of "top-down" or "bottom-up" dynamics. SCAPE embraces the ethos of experimentation, and, like Chezar, seems to inhabit the edge—mining a zone of fruitful exchange and overlap among diverse disciplines and players. This collection of recent work will inspire all those who love the city and believe in the unique ability of landscape to contribute to solving its urgent problems. ●

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