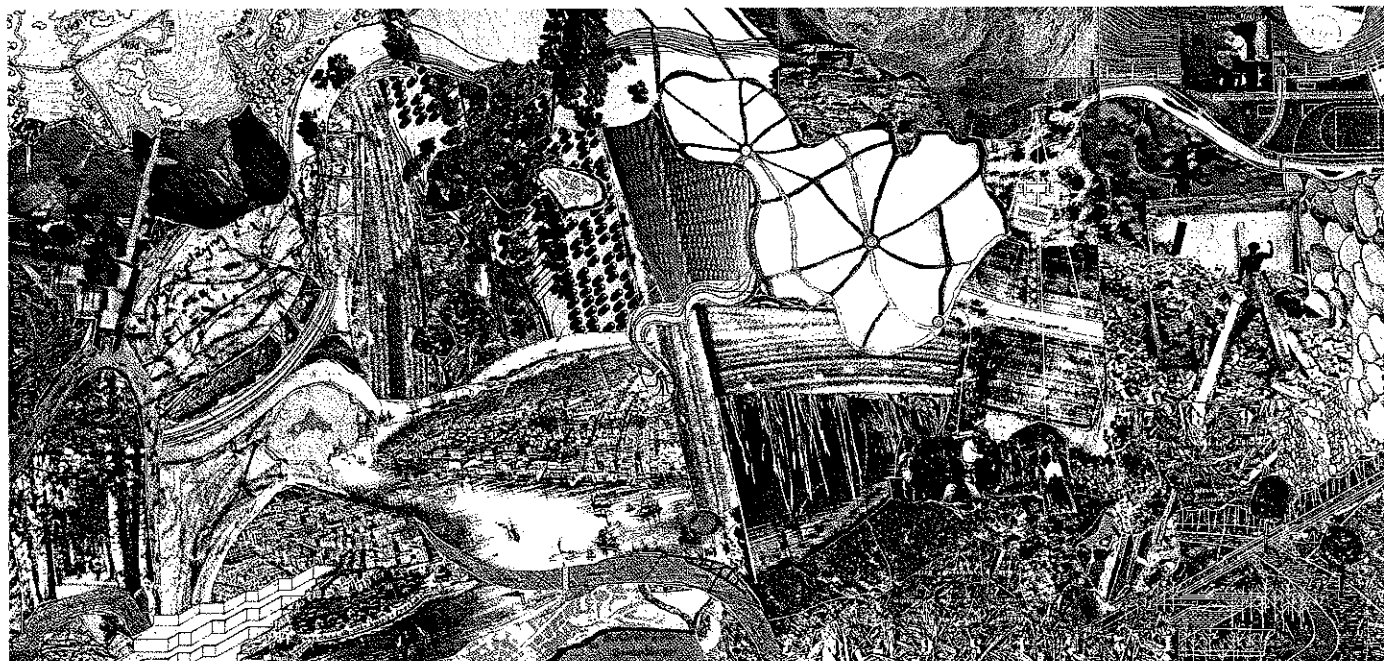


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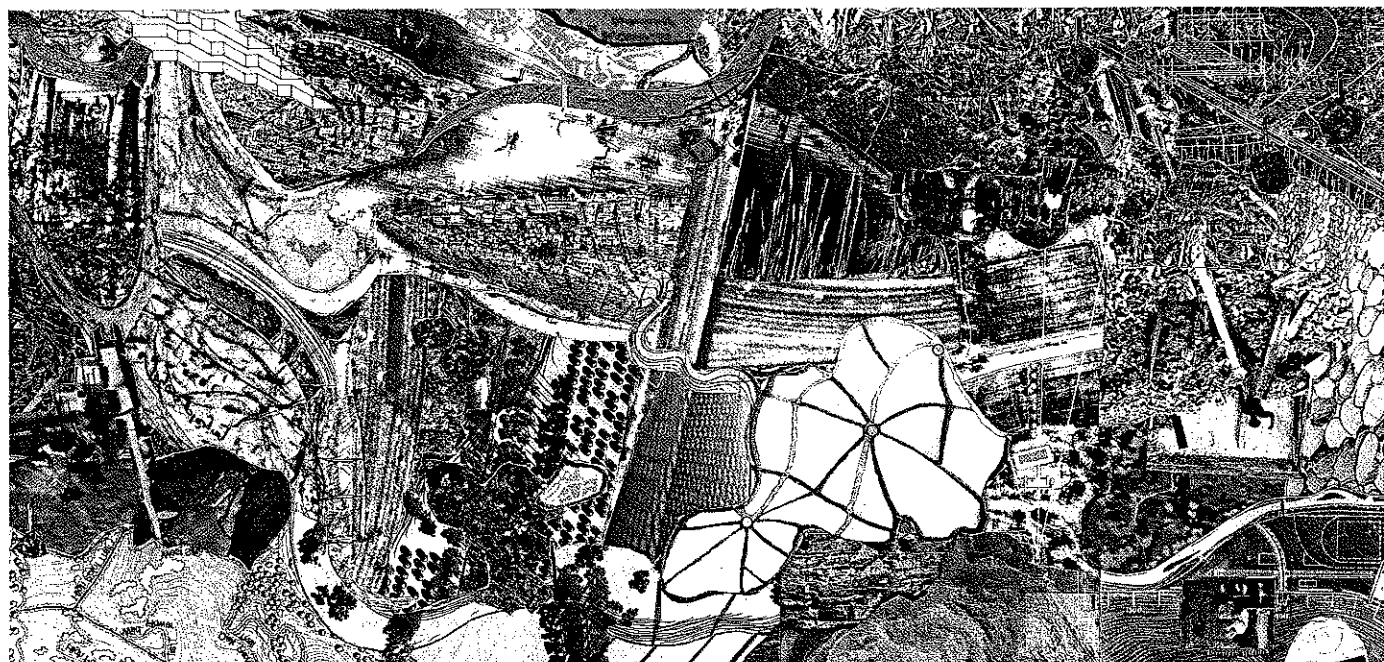
Design, planning and management of the land

Special Issue 1998



Eco-Revelatory Design: Nature Constructed/Nature Revealed

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LANDSCAPE JOURNAL

Design, planning and management of the land

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SPECIAL ISSUE

ECO-REVELATORY DESIGN: NATURE CONSTRUCTED/ NATURE REVEALED

This issue of *Landscape Journal* is the catalog for *Eco-Revelatory Design: Nature Constructed/Nature Revealed*. It documents the fifteen works in that exhibit and presents eight essays, each concerned with the exhibit and its works.

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Hosts	Terry Harkness, Douglas Johnston, Beth Randall
Treasurers	Douglas Johnston and Terry Harkness

The project, *Eco-Revelatory Design: Nature Constructed/Nature Revealed* originated at the Department of Landscape Architecture at the University of Illinois at Urbana-Champaign. Its focus is landscape architecture that reveals and interprets ecological phenomena, processes, and relationships. This catalog, exhibit, and attendant programs and events are its culmination. A grant from the Graham Foundation for Advanced Studies in the Fine Arts provided partial funding for this publication. Additional financial support came from the College of Fine and Applied Arts, the Department of Landscape Architecture, the Research Board, the Geographic Information Modeling Systems Laboratory—all at the University of Illinois—and from private donors. Committee for Eco-Revelatory Design: Brenda Brown (chair), Terry Harkness, Douglas Johnston; Beth Randall (assistant), Robert B. Riley (special advisor).

CONTENTS

ix	Kenneth Helphand and Robert Melnick	Editors' Introduction
x		The Proposal: <i>Eco-Revelatory Design: Nature Constructed/Nature Revealed</i>
xii	Brenda Brown Terry Harkness Douglas Johnston	Guest Editors' Introduction
		<i>Works</i>
1		Overview
		<i>Abstraction and Simulation</i>
4	Douglas Johnston with Wes Reetz	TRACES: Revealing Nature through Models of Landscape Dynamics
6	David A. Kovacic, Alan Craig, Robert Patterson, William H. Romme, and Donald G. Despain	Fire Dynamics in the Yellowstone Landscape from 1690 to 1990: An Animation
		<i>New Uses, Deeper Caring</i>
8	Achva Benzinberg Stein and Norman Millar	Windows of Opportunity: Reprogramming Residual Urban Space
12	Louise Mazingo with Ann Baker, Jonathan London, Nicholas Ancel, Iris Cheng, and Masato Dohi	The Glenn W. Daniel King Estate Park Master Plan
		<i>Signifying Features</i>
15	Joan Iverson Nassauer with photographs by Chris Faust	Urban Ecological Retrofit
18	Edward L. Blake, Jr.	Hattiesburg Lake Terrace Convention Center
21	Richard Hansen	Watermarks at the Nature Center

		<i>Exposing Infrastructure Processes</i>
24	William Wenk and Billy Gregg	Stormwater Gardens (Convey, Capture, and Reuse: Stormwater)
26	Joseph Eades	Urban Grass Waterways: Rethinking Stormwater Infrastructure in the Anacostia River Watershed
28	Kathy Poole	Wet Lands: Civic Stormwater + Contingent Spaces
		<i>Reclaiming, Remembering, Reviving</i>
31	Anuradha Mathur and Dilip da Cunha	Soil That New York Rejected and Re-collects
35	Kristina Hill	Ring Parks as Inverted Dikes
38	Julie Bargmann and Stacy Levy	Testing the Waters
		<i>Changing Perspectives</i>
42	Terry Harkness	Foothill Mountain Observatory: Reconsidering Golden Mountain
46	Margaret McAvin with Karen Nelson	HORIZONS Revealed and Constructed
		<i>Essays</i>
52	Brenda Brown	Holding Moving Landscapes
✓ 69	Carolyn Merchant	Partnership with Nature
72	Richard Haag	Eco-Revelatory Design: The Challenge of the Exhibit
80	Catherine Howett	Ecological Values in Twentieth-Century Landscape Design: A History and Hermeneutics
99	Susan M. Galatowitsch	Ecological Design for Environmental Problem Solving
108	Patricia Phillips	Intelligible Images: The Dynamics of Disclosure
118	Robert L. Thayer, Jr.	Landscape as an Ecologically Revealing Language
130	Frederick Turner	A Cracked Case
141		<i>Contributors</i>

Landscape Journal is dedicated to the dissemination of the results of academic research and scholarly investigation of interest to practitioners, academicians, and students of landscape architecture.

Partnership with Nature

Carolyn Merchant

Eco-revelatory design is a partnership between people and nature. The designs show local communities in a relationship with their local environments. As such, the exhibits reveal what I have called a partnership ethic: *the greatest good for the human and nonhuman community is to be found in their mutual living interdependence*¹. The new ethic supplants older self-interested and human-centered ethics. Each exhibit involves attention to ecological partnerships as the overriding guideline for a proposed reconstruction. Here through conscious design, ecology not only guides but is revealed through education and direct experience of the result.

A partnership ethic, I believe, is required for the future welfare of both people and nature. For most of human history, people lived at the mercy of nature's storms, droughts, frosts, and famines. Only in the last few centuries have technologies and attitudes of domination stemming from the scientific revolution turned the tables, enabling humans to threaten nature with deforestation and desertification, chemical pollution, destruction of habitats and

species, nuclear fallout, and ozone depletion. But today, as the exhibition attests, we are beginning to see nature as our partner in bringing the pendulum back into balance.

It is clear that eco-revelatory design team members have worked cooperatively not only with nature and local communities, but also with each other to achieve their goals. Men and women are both well represented in the teams that created the exhibits and the designs. Behind the partnership ethic lies an implicit assumption. Teams of men and women, women and women, and men and men have worked together as equals. Moreover, nature, traditionally represented as mother, virgin, or witch, is not gendered as female to be managed, controlled, or exploited, but instead is accepted as a partner to humanity. Such cooperation, revealed not only in the exhibits but in the resultant landscapes, presents exciting new opportunities for working with nature.

To achieve the new partnership with nature, the past must be understood in terms of its ecological and human histories, and negative outcomes must be reassessed.

Environmental history often shows a prior era fraught with the exploitation of natural resources with little regard to long-term consequences. It teaches us that many past interventions have been ecologically short-sighted. Eco-revelatory design seeks to remedy such errors. The exhibits reveal four precepts of a new partnership ethic.

A partnership ethic is, first of all, based on equity between human and nonhuman nature. In a Maplewood, Minnesota, neighborhood, past problems with stormwater runoff offered an opportunity to rethink human needs together with nature's needs. Landscape architect Joan Iverson Nassauer worked with residents and city engineers to redesign yards, vacant lots, and curbside strips with native wetland and prairie plants that would use water runoff and at the same time enhance traditional neighborhood tidiness by adding a touch of wildness. While neighbors dreaded the disruption of torn-up streets, they also saw an opportunity in the new ecology, a way to improve runoff and create aesthetically pleasing gardens on their own property. Here the partnership



Figure 1. Louise Mazingo with Ann Baker, Jonathan London, Nicholas Ancel, Iris Cheng, and Masato Dohi, "The Glenn W. Daniel King Estate Park Master Plan." (Left) in process, photograph by Masato Dohi, (right) site view.

process involved people talking with each other in community meetings to reach mutually acceptable solutions. In partnership with nature, they reintroduced native plant communities along with new drains to resolve water problems. Interlinked water and plant community processes were made visible; human needs and nature's needs were considered and resolved together.

A partnership ethic also promotes both cultural diversity and biodiversity. In the hills above Oakland, California, a culturally diverse middle-class neighborhood consisting of a majority of African Americans along with many European, Asian, and Latin Americans worked in partnership with each other and with landscape architect Louise Mozingo of the University of California, Berkeley. The goal was to restore biodiversity to the oak groves from which the city derived its name and ecological heritage. Together they devised a plan to develop the neighborhood's Glenn W. Daniel King Estate Park to benefit from the diversity of perennial grasses, oak savannahs, and brushy chaparral indigenous to the area. At the same time, they revamped hiking trails, added a recreation center, and increased security. The resulting master plan provided "a template for how communities can become active partners in the fulfillment of their own environmental visions" (Figure 1).

Third, a partnership ethic considers both nature and humanity as actors. In the mechanistic framework of classical physics, nature was rendered passive and inert, subject to prediction and control through linear differential equations. Within that framework, suspension bridges, tunnels, and skyscrapers are engineering triumphs because mechanical systems are considered to be closed, spatially defined, and subject to the classical laws of statics and equilibrium dynamics. Yet even these stable structures can be vulnerable to chaotic forces created by unusual weather patterns or geological events generated from outside the system.

Ecology, by contrast, deals not with the closed systems of classical mechanics, but with open systems that incorporate the flow of matter,

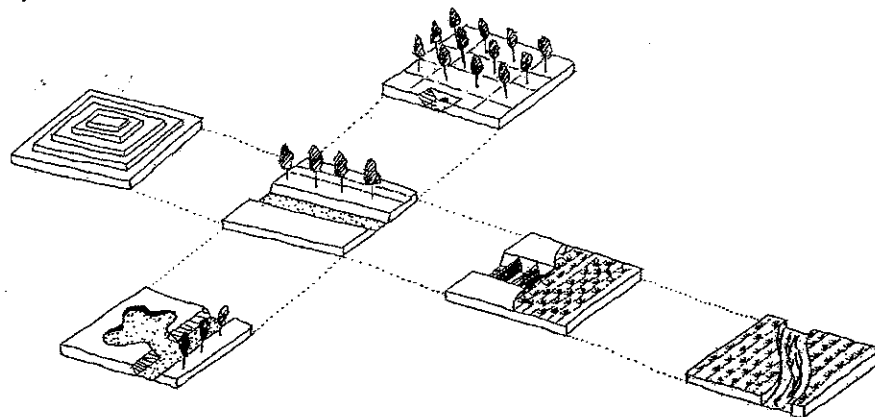


Figure 2. Joseph Eades, "Urban Grass Waterways," conceptual diagram.

energy, and information across boundaries. In ecological systems, nature's movements are not as readily controllable as assumed by classical mechanics. While some phenomena can be predicted and managed, many occurrences are chaotic and can be represented only through non-linear equations to which solutions are impossible or at best approximate. Although we can predict statistically that a catastrophic flood will occur on the Mississippi River system every hundred years, we do not know when it will happen. The same is true of earthquakes on California's San Andreas fault and lightning-caused fires in the Rocky Mountains. In such situations, nature is a dynamic actor, a force to be dealt with on terms not as comfortable to the control of nature as assumed by classical mechanics. Yet here nonhuman nature can become a partner with humanity through eco-revelatory design. The exhibits show such possibilities.

In Bladensburg, Maryland, the Anacostia River had been confined to a concrete channel built many years ago by the Army Corps of Engineers, the flow managed by pumps and floodgates on the premise that nature was controllable through engineering. In Joseph Eades's design, nature's older meander is revealed by allowing the river to assume its former course through the center of town (Figure 2). The new channels are lined with native riparian vegetation, and wetlands are reestablished to aid in

removing pollutants. Restoring the river's ecological integrity allows nature to become a partner to town residents. When the river is permitted to act freely, it removes storm-water runoff, provides habitat for riparian bird and animal life, and offers possibilities for river walkways that link people to nature.

Edward Blake Jr. pushes his approach further with his idea of nature becoming conscious of itself through design. To Blake, "Nature is a highly organized and complex pattern of phenomena often viewed as chaotic." So conceptualized, its successional changes need to be revealed and enhanced, rather than controlled and channeled. Blake's design for a convention center in Hattiesburg, Mississippi, re-creates the original floodplain woodland on which the city was built, now all but obliterated by construction dumping and debris-filled storm drains. The convention center overlooks a restored sedge meadow, cypress swamp, woodland, and lake. People's entertainment at the center is integrated into vistas and walkways in which ancient magnolias and beech, waterlilies and egrets, turtles and dragonflies make their homes. People and nature thrive together in a partnership in which both are actors in producing the result.

While hydrological forces and turbulent water flows exemplify one type of chaos, fire represents another. Fire can strike suddenly, roar into

violent action, and in minutes completely envelop a natural area that has emerged slowly over time through ecological processes. How can humans be partners with a phenomenon so deadly and potentially destructive as wildfire? One way is not to build structures with fire-prone materials such as shake roofs, or not to allow dry vegetation to accumulate near residences, in other words, practicing wise restraint. This is especially important in urban areas and in suburbs near arid grasslands and chaparral. Another way is to learn from the history of past fire policies, such as the hundred-year fire-suppression regime adhered to in Yellowstone National Park between its creation in 1872 and its reassessment in 1972. As David Kovacic and his colleagues show in his animation of fire dynamics in Yellowstone, simulation models can be useful tools in understanding how local ecologies respond to fire. Many ecologists believe that frequent, cool, ground fires enhance ecological diversity by opening up understories to forage, increasing varieties of plants and wildlife, and rejuvenating old growth. Wisely used, fire can become a tool in a new human partnership with nature.

Fourth, in a partnership ethic, ecologically sound management is consistent with the continued health of both the human and nonhuman communities. In southwestern Pennsylvania, an inorganically based economy founded on the extraction of coal as a resource for steel production left dangerous acids that drained into the surrounding watershed. Bright orange iron oxides blemished the land, threatening human health and poisoning the surrounding watershed and forest food chains. Past practices that once benefited humanity lay abandoned as a century-old coal mining town closed its doors and moved out of the region. A human environmental history that exploited the labor of eastern European immigrants who mined underground veins and stoked coke ovens is contained in the outlines of cabins, mine buildings, washeries, machine shops, and railroad tracks now laced with slag and residual black bony.

Julie Bargmann and Stacy

Levy's exhibit imaginatively portrays the stages of an integrated ecochemical process that cleanses the acid runoff and restores health to the mined landscape while preserving its past human history. Here humanity has developed a scientific approach that treats the acid in a series of settling ponds and limestone channels, gradually raising its pH and creating clean water. This active intervention restores healthy water and wildlife to a previously lethal area by combining inorganic chemical reactions with organic clarification ponds. The design includes trees and vegetation whose colors echo the orange to green to blue-green colors of the treatment ponds. Inorganic chemistry and ecology work in partnership with human design to preserve both history and nature.

Not only rural but also abandoned urban industrial sites can be restored to health through a "windows of opportunity" program such as that devised by Achva Benzinberg Stein and Norman Millar in Los Angeles, California. Former industrial areas, asphalt parking lots, freeway residual areas, and vacant urban lots can be turned into opportunities for growing nonfood crops with treated gray water, recreation sites for underprivileged children,

community gardens, and solar farms atop parking structures. In this case, ethnically and culturally diverse communities enter into partnerships with each other and with sunshine, rainwater, fragile soils, and native plants to reclaim green open spaces that benefit both human and nonhuman health.

As these exhibits all show, humanity can learn to listen to nature's language as revealed through ecological principles, ethics, poetry, and reverence for our nonhuman partner. Although, as partner, nature's language differs from our own, we still have the possibility of working cooperatively with it. This entails respecting both nature's needs and human needs. It means that other species, women and minorities—and both human and nonhuman communities—are represented at the decision-making table and in the design process. The result is a healthier, more aesthetically pleasing environment for our own and future generations.

Notes

1. Carolyn Merchant, *Earthcare: Women and the Environment* (New York: Routledge, 1996), pp. 209–224, see p. 216.



Figure 3. Achva Benzinberg Stein and Norman Millar, "Windows of Opportunity," Reclaimed Green Open Space.