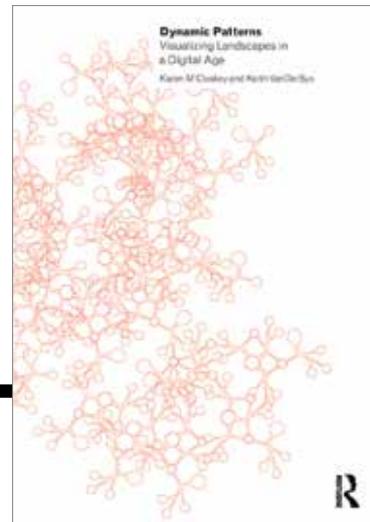


DEPTH OF FIELD

DYNAMIC PATTERNS: VISUALIZING LANDSCAPES IN A DIGITAL AGE

BY KAREN M'CLOSKEY AND KEITH VANDERSYS; LONDON
AND NEW YORK: ROUTLEDGE, 2017; 191 PAGES, \$55.95.

REVIEWED BY SARAH COWLES



Zone T1A-4: sprinkler irrigation is an erotic film. The camera scans the lake bed, holding the composition taut in a kinky split of four-fifths playa, one-fifth mountain peaks of California's Inyo range. Our attention is drawn from the scenic backdrop to the foreground, a playa parsed by a pattern of narrow berms alternated with silver reflective pools, each grazed by rhythmic sprays of irrigation.

It's one of seven films featured in *Best Available Control Measures: Aerial Portraits of Owens Lake*, produced by the Center for Land Use Interpretation (CLUI). These "landscans"—CLUI's term for oblique aerial films of extensive constructed landscapes—reveal the patterns and idiosyncrasies of a massive dust control project implemented by the Los Angeles Department of Water and Power (DWP) in the Owens Valley of California.

The DWP has owned the water of the Owens Valley—and diverted it to Los Angeles—for decades. This led to the desiccation of the lake bed, the dust from which polluted the air of the Owens Valley in violation of the Federal Clean Air Act. The DWP was legally bound to take action to mitigate the pollution, and did so through the design and construction of "best available measures" to suppress the resulting playa dust.

To frame and offer for interpretation this massive reclamation project, CLUI funded and produced drone films of the new landscape of the lake bed. In its words, "The lake is now a constructed and managed landscape on an unprecedented scale, a cyborg, cubist version of a lake, fractured into fragments—gravel,

grasses, tillage, furrows, wetlands, pools, shallows, depths, and islands—each engineered to perform a function, which collectively add up to make a lake that is acceptable to the future."

The landscape is constructed as a mosaic of patterns, a restitution of the lake bed from a hazard to a resource. Although the patterns on the ground are pragmatic, CLUI's drone lens exposes the de facto aesthetic work of the project.

Since Aldo Leopold's prairie restoration work, the "re" (reclamation, restoration, remediation) practices at the intersection of landscape architecture and ecology have yielded a tangible if not always overt aesthetic language. In version 1.0, the aesthetic direction trended toward naturalization and erasure of the work of recovery. In version 2.0—the brownfield years—landscape architects highlighted rusting and scenographic site artifacts and choreographed the work of volunteer vegetation in the traces of industry. But version 3.0—the hyperscale, infrastructural tasks of taming dust storms and absorbing sea-level rise—lacks significant visual anchors to make the work legible to humans.

Dynamic Patterns: Visualizing Landscapes in a Digital Age, by Karen M'Closkey, ASLA, and Keith VanDerSys, is a cogent primer for designers tackling hyperscaled works of reclamation 3.0 that reflect and interpret our contemporary relationships to ecology, space, and technology. The examples and propositions in the book attend to a range of landscape scales, from gardens to urban infill sites, but it is most provocative in its potential to address the aesthetic enigmas of reclamation 3.0.



Today, designers are wrestling with hyperscale issues of both desiccation (Owens Valley and the Salton Sea in California, Lake Urmia in Iran) and inundation (sea-level rise and superstorms). These landscapes are the subject of contemporary speculative design research and implementation. No longer “background scenery,” these landscapes are being reinvented as health and safety infrastructure.

THE BOOK OFFERS A FRAMEWORK AND EXAMPLES FOR WORKING IN THE HYPERSCALED LANDSCAPES OF RECLAMATION 3.0.

The Owens Lake and other reclamation 3.0 projects are huge and inscrutable to on-the-ground observation. These are dialectic, not didactic, landscapes, where ecology and engineering are twinned in newly constructed terrain, and where plant and animal species organize into new habitat gradients and patterns. The visual and physical results provoke our assumptions about human relationships with the material and biotic fields and energetic forces we inhabit, but no easy visual “grips” bring this landscape into focus. In witnessing the films of *Best Available Control Measures*, one wonders, is landscape architecture out of its depth? Can a scenographic discipline figure within scenery?

The landscape architect’s role in these projects is multivalent, and it includes making the reclamation or resilience performance legible and creating spaces of exploration and occupation. Nimble with visualization and performance-testing and -tuning software models, contemporary practice is poised not only to meet these challenges but to invent new aesthetic realms.

Dynamic Patterns is provocative in that the authors openly declare that it is about new aesthetic approaches to landscape. Design students, when faced with the hard work of making aesthetic choices and engaging in form-finding, sometimes

believe that the “ecological” choice is to intervene as little, or as subtly, as possible. The book is a valuable resource for studio instructors to guide students in articulating the relationships between ecological systems and human intervention.

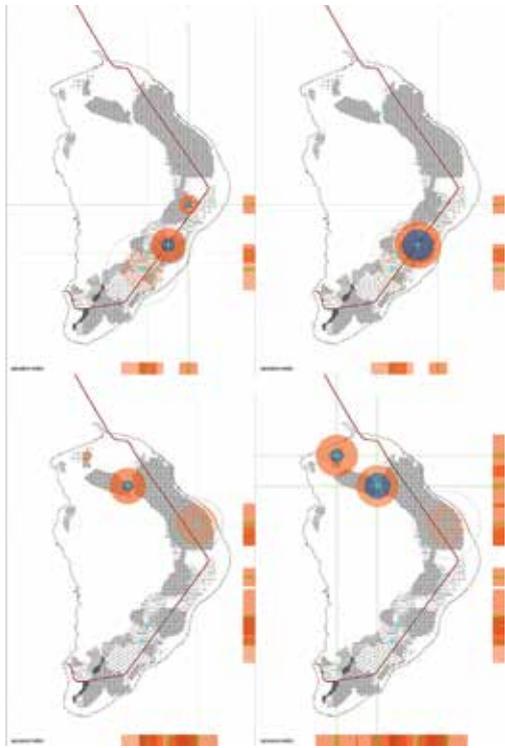
In their substantial introduction, the authors situate their investigation into dynamic patterns with brief histories of ecological design and systems theory via the work of the cyberneticist Gregory Bateson and the artist György Kepes, contextualizing their work within contemporary landscape practices and problems. The three following chapters, “Topological Patterns,” “Behavioral Patterns,” and “Ornamental Patterns,” repeat this framework and include compelling illustrations to guide interpretation.

The first chapter “explores how processes that influence form and organization in the designed landscape are geometrically and parametrically measured and modeled.” Topological patterns are structural and aesthetic frameworks for shaping both static and dynamic elements of constructed landscapes. Contemporary digital tools allow users to experiment with topological patterns and models quickly. Parametric software such as Grasshopper, a 3-D modeling application, opens the topological terrain for experimentation at a range of scales—including those as large as the Owens Valley—via custom scripts linking Grasshopper to GIS software.

In the second chapter, M’Closkey and VanDerSys trace a line from the cybernetic artwork of the late 1960s and early 1970s to contemporary speculative works about climate and environment by Olafur Eliasson, Sean Lally, and Natalie Jeremijenko that aim to generate “new forms of ecological consciousness.”

The authors critique some of the early process-based landscape proposals, such as Field Operations’s 1999 Downsview Park competition entry. The Field Operations scheme for reinvigorating the airfield outlined a system of carefully patterned regrading to divert and capture stormwater runoff to promote greater biodiversity and visual richness. The scheme

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The sloping Barcelona Botanical Garden site was analyzed using TIN (triangulated irregular network) software that allowed iterative testing of cut-and-fill balance, as well as fine-tuning of slope and solar aspect for optimal growing conditions. The image on the left shows the site in 2007; the image on the right is recent.



was predicated on the idea that the landscape would behave and evolve in a linear progression from less to more without disruption or disturbance. But with today’s software, one can establish behavioral models to test and guide the responses of the park’s systems to different spatial and temporal scales of disturbance, and devise patterns that respond to or frame disruptions.

In this chapter, the authors introduce contemporary artistic–didactic landscape installations that reveal environmental behaviors and bring attention to ecological precarity. Using sensors and software, a new generation of artists and designers is constructing installations that read, interpret, and aestheticize otherwise invisible real-time air or water pollution data. Though noble in intention, these works often fail to achieve a

rhetorical velocity beyond “raising awareness.” Much of contemporary ecological art is mired in the low-stakes awareness game; they are works ultimately unthreatening to the forces that cause pollution. For example, in Natalie Jeremijenko and David Benjamin’s *Amphibious Architecture*, an installation in the Bronx and East Rivers in New York, a field of lights and tubes changes form and color depending on water quality and the presence of fish. However, the authors’ hyperbolic claim that the value of the work “engages individuals as agents of transformation” may exaggerate the benefits of hipsters tossing fish food into water.

In the third chapter, the authors argue that ornament is not a superfluous concern, rather it is “superadded to utility.” The work of the authors’ studio practice, PEG office of landscape + architecture, exemplifies ornament’s role in interpreting the influence of humans on self-organizing, material energetic systems. As designers, they work through mock-ups and prototypes uncommon in most landscape architectural practices. In their work, pattern is a means to prefigure sites, specifically surfaces, to reveal otherwise unarticulated environmental forces. In *Dew Point* (2010),

a poetic prototype, they designed ornamental patterns of moisture retardant to reveal the presence of dew or moisture on pavement. When the moisture evaporates, the pattern disappears.

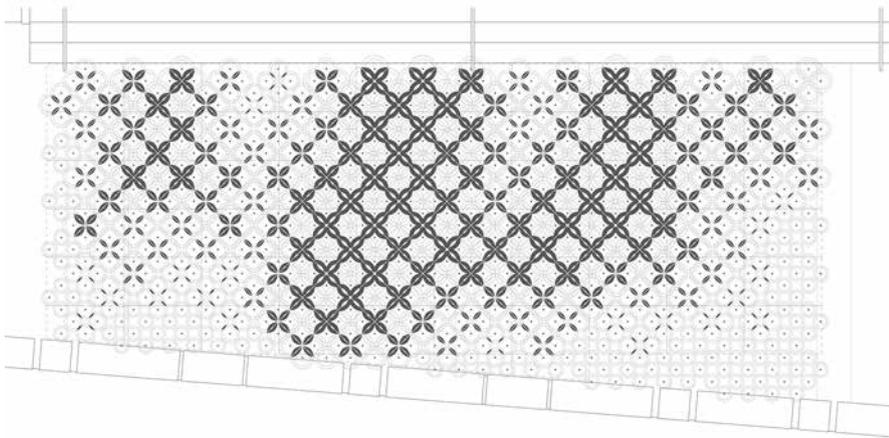
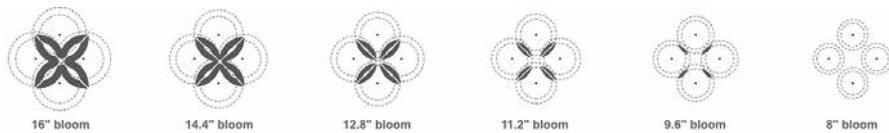
M’Closkey’s and VanDerSys’s delightfully twee work contrasts with the examples of overscaled and cheeky contemporary patterning work by West 8 and Mecanoo (and their contemporaries Ken Smith, FASLA; Martha Schwartz, FASLA; and Peter Walker, FASLA). It is easy to criticize these works as environmentally and aesthetically irresponsible, but in their respective urban contexts, this overlooks their rhetorical and spatial potentials. Aggressive, unabashed visual takeovers of urban space assert landscape architecture’s role in transforming our cities; they draw attention, and people, to them. They bring practice both rhetorically and materially out of the background.

We are witnessing a new era of ornamental patterns in landscape. Parametric software is useful in iterating, tuning, and testing behavioral and topological patterns that link materials and ecological forces. Computer numerical control workflows, from design to fabrication, allow for compelling and complex three-dimensional ornamental patterns both on screen and on site. But one may argue that for all the intricacy and flourish made possible using parametric modeling tools, the aesthetic-algorithmic residue—generated by NURBS (non-uniform rational basis spline) curves and Voronoi networks that anchor the underlying geometry—clinging to and binding these works, coupled with the lengthy lag of contemporary project delivery, may result in a generation of works that appear dated before installation is even completed.

Many of the visual examples gathered in this volume were produced in studios and workshops led by M’Closkey and VanDerSys in the landscape program at PennDesign. These “proofs of concept” are compelling objects in their order and execution. But for all of their projective potential, there is yet another lag between full-scale testing and implementation of these methods and models because of the limits of knowledge within contemporary practice and leadership. Increasingly, undergraduate and graduate landscape architecture programs embed instruction in 3-D modeling and scripting tools necessary for generating the complex patterning featured in this book. As students from this generation (the digital natives) enter the profession, they may gravitate to multidisciplinary firms that employ advanced

ABOVE
The designers used Processing, an open source language, to test permutations of flooding levels and timing in California’s Owens Lake.

COURTESY MICHAEL EZBAN, ASSOCIATE ASLA



digital workflows—or establish their own studios—that couple parametric modeling with implementation and testing of larger-scale reclamation and prophylactic landscape projects.

Dynamic Patterns is a well-designed book. It is rich with visual examples of early systems artwork; patterned artwork; scientific, geographic, and data visualizations; studio experiments and speculative projects; as well as examples of historic patterns in landscape architecture practice. The writing is accessible and rich with resources and references for further investigation.

The one significant glitch is the authors' splintered definition of nature. For example, in arguing for the relevance of their study, they offer a tempting description of the work of landscape architects: "...many designed landscapes are constructed interpretations of nature that are physically embedded in living processes, patterns have enduring relevance for landscape architecture both representationally and materially." But what nature is this? Is this an Arcadian nature, unspoiled? Or is it the nature that communicates with us via patterns such as undulating sand dunes? Is it a nature as a ready reserve of visual motifs (or that dreaded "inspiration from nature"), such as dendritic branching? They say, "We look for patterns in nature in order to understand relationships between function and form, as in morphology." Or is it nature as a thing to be known, "the tools and techniques used to measure and represent natural processes lead to changes in how knowledge is produced."

The authors avoid defining nature in a critical and consistent way, which is unfortunate because they have the framework to do so. They aim to "examine methods that foster a multivalent

understanding of patterns as both the expression and shaping influence of environmental processes." Here "environmental processes" is a fair stand-in for the slippery nature of nature. The works featured in the "Topological Patterns" and "Behavioral Patterns" chapters demonstrate the dialectic play between anthropogenic patterns and the self-organizing, emergent responses of energy, materials, and biota of planetary milieu. Throughout, they make glancing references to posthumanist theory, and the imaginative work of Timothy Morton's *Hyperobjects: Philosophy and Ecology After the End of the World*—massive scale, diffuse entities of the Anthropocene that we can grasp only in abstraction or through the patterns

they leave behind. (Morton's hyperobjects include the forces of global warming, dispersed Styrofoam particles, and radioactive fallout.) They provoke us to imagine practices of building and testing articulated, inflected fields that conjure emergent ecological and spatial patterned effects that both invoke and evoke the multiple definitions of nature. Perhaps this reader has lost the plot: A position on nature isn't even the point anymore, or perhaps this semantic work is best left for others to tackle.

Dynamic Patterns offers a framework and examples for working in the hyperscaled landscapes of reclamation 3.0. This scale of work is often inscrutable to the grounded observer, which may diminish its ability to connect and communicate to the public; it may be visible only through satellite imagery or aerial imagery captured by drones. M'Closkey and VanDerSys propose that fractal patterns may be a means to link topology, behavior, and ornament that both perform and are legible from foreground to background. This nature, the multiscalar, constructed, evolving choreography of materials and life, is the nature of the future.

This work is being tested and advanced in the academy and in boutique practices like PEG, but the examples are largely speculative or at prototype scale. This work is begging for sponsorship of testing of these ideas in real life, not to squander the talent, intellect, and open-ended thinking of this generation of graduates, and to bring a diversity of new aesthetic approaches to the public and the planet. ●

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ABOVE
In *Dew Point*, PEG experimented with the effects of using moisture retardants on concrete to reveal ephemeral environmental effects. The field of "blooms" makes legible the moisture that condenses on the surface of shoreline paving.

COURTESY PEG OFFICE OF LANDSCAPE + ARCHITECTURE