

Allora & Calzadilla
Free Soil
JAM
Learning Group
Brennan McGaffey in collaboration with
Temporary Services
Nils Norman
People Powered
Dan Peterman
Marjetica Potrč
Michael Rakowitz
Frances Whitehead
WochenKlausur
Andrea Zittel

BEYOND GREEN

toward a sustainable art

Curated by Stephanie Smith

SMART MUSEUM OF ART
UNIVERSITY OF CHICAGO

INDEPENDENT CURATORS INTERNATIONAL
NEW YORK

FRANCES WHITEHEAD

Opposite: *Primary Plus*, 2005 (detail)
(CAT. 19)



Frances Whitehead delves

into the intersection of nature and culture in her work. Her earlier projects incorporated computer-based visualization tools to make models of organic forms such as viruses, which she then adapted as sculpture. Recently, she has looked more specifically at the impact of human activity on watersheds, exploring creative systems of remediation, visualizations of future urban development, and sculptural means to depict statistical information.

Primary Plus focuses on the relationship between design and disaster. For this project, Whitehead uses the classic strategy of bringing found objects into the gallery space, relying on the museum's authority as a framing device to allow viewers to reconsider objects that have other functions in the so-called real world. In this case, she offers a selection of large, commercially produced, inflatable objects that are designed to collapse and fold into small packages in order to be transported and reused in response to environmental and social disasters. These include bladders to hold drinking water for humanitarian needs, tanks to hold gray water for firefighting and other needs, and "booms" to contain toxic spills. Whitehead has chosen a selection of objects that can be edited and arranged in each exhibition venue to form an installation that suits the available space. At the close of the exhibition, Whitehead will return the inflatables to the company that produced them so they can be reused as product samples or in the field.

Whitehead wants to call attention to the many-layered ambiguities of these containers. They are sturdy, reusable, and made to help staunch environmental problems and so fit some aspects of sustainable design, but they are also emblematic of a culture that offers surface solutions rather than seeking to address root causes. In addition, Whitehead chose the specific examples presented in *Beyond Green* in part for their formal appeal; with their strong colors and simple forms, the sculptures look at home in the gallery. Once placed in that rarefied arena they strongly recall the industrial aesthetic of minimalism, which maintained an entirely different, particular chain of associations, which foreground the tension between the social and formal concerns of art and artistic practice.

FRANCES WHITEHEAD



Primary Plus, 2005 (detail)
Variable selection of commercially produced inflatable objects and their cases
Installation view at Smart Museum of Art, University of Chicago
(CAT. 19)

Interview

SS: How did you first get interested in sustainable practices?

FW: When I first moved to Chicago, I started a garden on the side lot next to my house. I'd never had a garden, never wanted one. Like many urban people who react to the absence of nature in the city, I became very involved with gardening and eventually it became part of my work, an extension of my prior interests in art and science. Working in the garden helped me become more knowledgeable and more tuned in to natural systems and environmental issues. I had thought I was just going to make a flower garden, but first I had to deal with the soil, which was full of debris. That got me thinking about reclamation. Many years have passed since then, and through the School of the Art Institute of Chicago, where I teach, I have had the opportunity to spend time with some sustainable design theorists and was exposed to that discourse on a philosophical level.

SS: Could you talk more specifically about how this affected your practice?

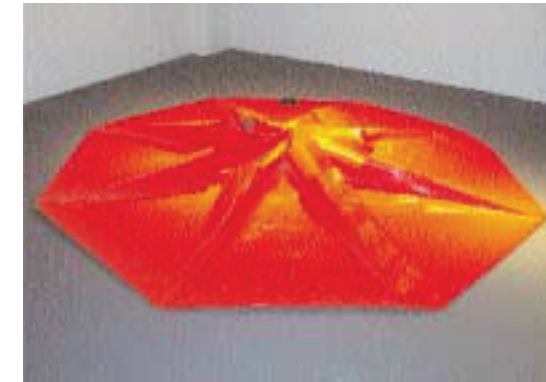
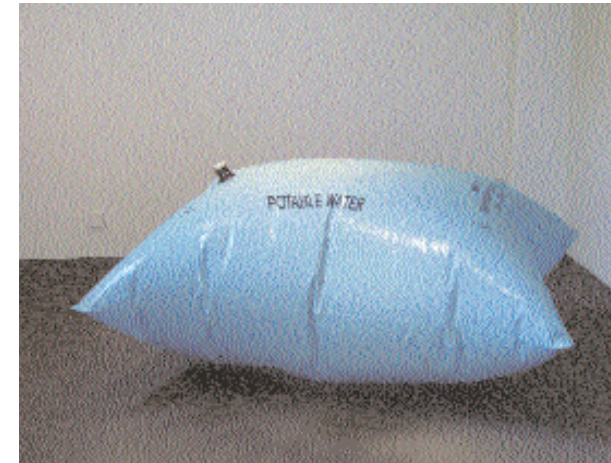
FW: Five years ago I realized I had been looking backward, lamenting a lost purity of nature, paradise lost. This was getting us nowhere; I needed to become more proactive. I became more politicized in general, and that led to a radical change in my work from a more romantic excavation of historical and botanical subjects to a proactive and politicized body of work. I also looked at my own life and realized that I was living a modernist art lifestyle in a big cavernous place with more space than I need. So my husband and I are building a smaller, leaner home and studio that incorporates principles of sustainable design. Actually, it was through searching the web for cistern liners for the house that I found the inflatable objects that will be presented in *Beyond Green*; some of the same companies that make these objects also make the cistern liners, which we need for water reclamation at our new home.

SS: Could you describe these objects and your project?

FW: The project, *Primary Plus*, presents examples of a type of monumental, collapsible, industrially produced object that is currently in worldwide use. These brightly colored geometric forms are the embodiment of a new global emergency and disaster response culture and are used by military, corporate, survivalist, and humanitarian organizations for spill containment, fire fighting, and temporary storage of liquids. They're color-coded for the end-user: typically blue or white for potable water, black for nonpotable water or fuel, tan or khaki for jet fuel and military applications, yellow for high visibility, and orange, the most inexpensive and therefore ubiquitous color, for gray water and disposable contents. I'm bringing a selection of these found objects into the museum where they function in relation to a minimalist sculptural aesthetic, as well as to their intended use in disaster response. Ambivalence is a key term for this project. Things operate at a juncture between understanding them as part of an art-historical iconography and seeing them as functional objects. This slippage between what something is and what it appears to be is very extreme in this case. That interests me. I also find their scale compelling, because it begins to hint at the magnitude of the environmental issues facing us. I'm also interested in places where Enlightenment categories of material culture dissolve and art blends into anonymous design.

SS: Let's talk about the objects in their first lives as functional items. Do you think they're examples of effective, sustainable design?

FRANCES WHITEHEAD



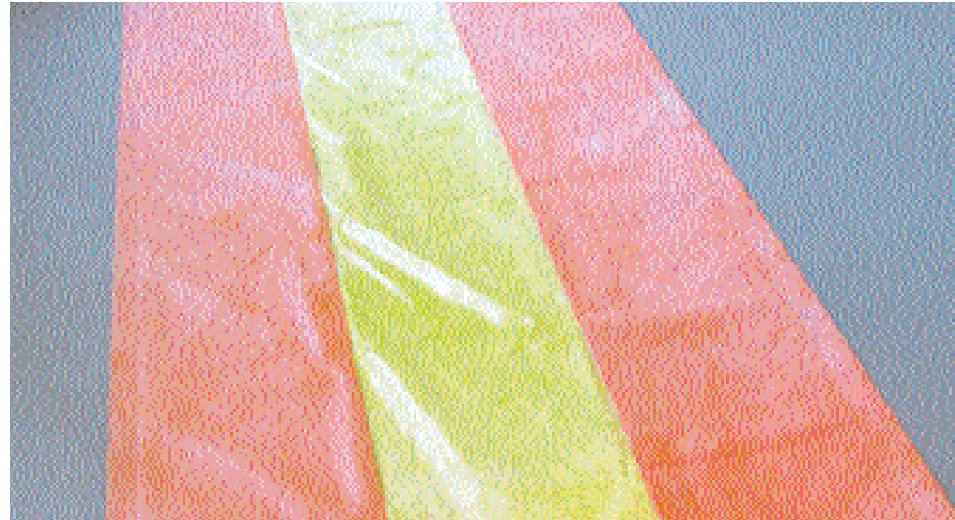
FW: This is another ambivalence within the project. Toxic spills and industrial “accidents” clearly need remediation, and the ingenious devices designed for this purpose—the objects I’m showing—do an environmental service by helping to sustain beaches and wetlands. However, do sophisticated remediation strategies perpetuate unsustainable practices such as shipping crude oil across the oceans? Does the automobile inscribe the design of these inflatable devices? Are they perhaps both reactionary and sustainable? If so, what are they sustaining? The status of the inflatable tanks used to supply potable water for humanitarian relief is just as ambiguous. In refugee camps and areas of unexpected drought, these devices are a godsend, allowing fast, inexpensive, efficient delivery (by aircraft drops) of drinking water. In the future, will these devices become as familiar as the gas tank? Fresh water, already a crisis in many parts of the world, represents a new global economy built on a strategy of shifting resources that is transient, nomadic, and extra-geographic. Perhaps to see this as dire is nostalgic, sentimental, or provincial. As design and environmental philosophy have moved beyond ecological or green design into the more complex model of sustainability, one central tenet is the need to design proactive systems on the front end, moving out of a reactive mode. Further, sustainability might only be achieved by recognizing the impact of “inscriptive” design, design that produces situations and behaviors that go on to “design” other situations and behaviors that in turn “design” the designers. Sustainable design theorist Tony Fry calls this “ontological circling.”

SS: You've borrowed all of these inflatable objects from the companies that make them. Could you describe the responses when you proposed this project?

FW: The owner of one company, Dr. Fakhimi of Texas Boom, Inc., is an academic who started making these products after working for years as a chemical engineer. Referring primarily to oil spills, he told me, “Engineers helped create this mess and we needed to figure out how to clean it up.” When I told him the nature of the exhibit, he said, “They should give you a medal for raising these issues.” Clearly he was receptive; he got the project. He did not seem surprised that I see these objects sculpturally and appreciate their high level of craft, which of course is necessary for them to function.

Above and right: *Primary Plus*, 2005 (detail)
(CAT. 19)

1. Tony Fry, *Remakings: Ecology, Design, Philosophy*
(Sydney: Envirobook, 1994).



SS: Let's talk about their function within the museum.

FW: It exposes them to the museum as a viewing space, as a place where ideas are presented, aestheticized, and consumed. Aesthetic issues aren't in play when an inflatable water tank is being used to fight a fire. These objects need the museum to raise these questions, because when they are out in the world you never really "see" them.

SS: Moving these things into the gallery space is a classic maneuver. It brings them into a "wrong" context that allows them to be perceived aesthetically, as sexy, tactile, well-made objects. It also provides a little breathing room so one can think about them not only in relation to art-historical categories like "minimal sculpture" and "found object," but also in relation to their actual use. In the gallery, they can raise questions about complex issues of sustainability and design in a way that wouldn't be possible when they are used for disaster response.

FW: Yes. I don't think of this as sculpture. I think of them as part of a conceptual project, as props that elucidate a conceptual framework. I really don't think of these as sculpture, because that gets into a peripheral inquiry about authorship, craft, and uniqueness. Of course the minimalist sculptors in the 1960s opened this door; they had other people make their work and established that the artist's hand and touch did not have to exist in the work, which was already hinted at by numerous other works—Duchamp's art, collage, etc. The minimalists made this really clear. I just walked through the door they opened by appropriating these inflatables into my own work.

SS: To me, what you are doing seems more akin to a readymade: you're recontextualizing something that already exists. These make me think more of Duchamp's *Trébuchet* (1917), in which he placed a hat rack on the floor. The simple act of displacement trips you up, traps your attention, and opens up other ways of experiencing this thing.

FW: Yes, but they still relate more to minimalism formally. As an artist, although maybe not so much for a general visitor, these objects are familiar; they evoke the forms of minimal sculpture so they seem familiar and right in the gallery. The minimalists took their language from industry, and I am putting it back. We can skip the stage of making work

Primary Plus, 2005 (detail)
(CAT. 19)

in an industrial manner and just go get the industrial thing. I did make some aesthetic choices; I paid attention to things like size, shape, and color when I requested these objects. Not just any inflatable would work well in this context. I was playing up their primary-ness, their primary structure-ness. I wanted to include a variety of objects not just for the sake of the taxonomy but also to get the most formal mileage that I could out of each one.

SS: Could you talk about the title of the piece? *Primary Plus* relates these industrial objects to art, since *Primary Structures* (1966) was the title of the first museum show of minimalism. But what else did you want to evoke?

FW: I am definitely thinking about them as primary structures. Also their colors aren't primary but they're close, they're crayon colors. They're primal, too.

SS: And by primal you also mean their use in the world, dealing with our basic needs for water and safety?

FW: Yes.

SS: It's interesting to think about another tension or ambiguity, this time between objects that meet a primal need and those that, when presented as art, have a kind of playfulness—here as a side effect of being inflatable.

FW: Yes. When they're inflated they appear cheerful and comic, and depending on how they are laying around the space, they can look very humorous.

SS: Sitting here in your studio, I'm looking at a black, nonpotable water tank. It's partly the angle at which I'm viewing it, but there's a certain menace to it. The ways these are presented will definitely have an impact on the attitudes that people attach to them.

FW: Absolutely. Their position in space is really important, because it establishes not only the formal configuration, but also the mood. Proximity is also significant—the degree to which the public is allowed to walk right up to them and begin to use their bodies consciously or unconsciously to measure what size they truly are.

SS: These configurations will change as the show travels: each venue will have the opportunity to choose from a "menu" of inflatables that you've provided, to create arrangements that suit their spaces.

FW: As I said, I think configuration is important. You need at least two, since they inform each other visually. A configuration might also include stacks of the uninflated folded ones or their carrying cases. When they first arrived, they were each packaged in their own individual carrying case with nylon rope and grommets and plastic ties. They're portable; they stack; they go where they need to go for emergency response.

SS: We've talked about reasons why these forms are visually satisfying and how they can connect back to different moments in art history and to things that are familiar from everyday experience, but the visual connections fall flat unless the objects can trigger reflection about these other networks you mention.

FW: It is hard for me to think about that aspect of my work. Yet people point it out to me, and at moments like this, as I try to unpack something with assistance, I start to see it—many of my works are about systems but are manifest as objects or things. The way material culture operates, the knowledge objects hold, and the cultural roles that they play as embodiments of systems, are not very well understood. It's hard to talk about, but that's really at the heart of my interest in sculpture.

June 2005

Beyond Green

by Stephanie Smith

Sustainable design has the potential to transform our everyday lives through an approach that balances environmental, social, economic, and aesthetic concerns. This emerging strategy emphasizes the responsible and equitable use of resources and links environmental and social justice. By doing so, it moves past a prior generation of more narrowly eco-centered or “green” approaches. Although still a fledgling movement, this holistic, ethical, pragmatic, and wildly inventive mode has the potential to redirect design toward progressive ends, a phenomenon that designer Bruce Mau succinctly dubbed “massive change.” This shift derives from and speaks to a much more widespread desire to find socially and environmentally responsible—in other words, sustainable—ways of living and working, a desire being enacted around the world in large and small ways not only by activists and designers but also by growing numbers of corporations, policy makers, and possibly even you.

Beyond Green explores some of the ways in which contemporary artists also grapple with this impulse to build a more sustainable future (whether or not they think this is actually possible). This exhibition does not survey all such efforts. Rather, it calls attention to a florescence of recent art making that resonates with the considerations at the heart of sustainable design. The project brings together thirteen artists and artists’ groups based in the United States and Europe, leaving it to others to explore work coming from other parts of the world (sustainability seems likely to become a strong current among artists living and working in rapidly industrializing economies such as China’s, for instance). It is important to note that environmental concerns are part of the mix of these artists’ practices, but just that—they have no desire to be labeled as “eco” or “green” or even “sustainable” artists. They work in an expanded field, blending art, activism, and design to varying degrees. This exhibition focuses on only one strand of this art by presenting objects, structures, and processes/networks that use aspects of sustainable design to metaphoric, practical, speculative, ironic, and playful ends.

Green as the new black

About five years ago, I began to notice hybrid electric-gas cars on Chicago’s streets. A few years later, a new logo cropped up at gas stations around the city: the green-and-yellow sunburst that introduced British Petroleum’s new incarnation as self-proclaimed, eco-friendly “bp,” purveyor not only of petrochemicals but also of solar power (their ad campaign initially touted their capacity to move “beyond petroleum”). Around the same time, the city government launched a campaign to make Chicago “the greenest city in America,” and national magazines like *Dwell* began to feature eco-chic design strategies. This trend toward the greening of corporate practice, civic policy, and consumer desire has continued at a rapid pace. New advertising campaigns promoting eco-conscious corporate practices are rampant, and on a more personal level, we can purchase all kinds of goods for a green lifestyle much more easily than we could just a few years ago: even my decidedly gritty local grocery now sells organic milk.

What to make of all this green? Its return to (relatively) mainstream fashion—especially after a stretch through the 1980s and 1990s when environmental concerns languished at the fringes of social attention—might seem purely positive. However, if detached from a broader set of pragmatic and ethical considerations, green practices might be just another trend: a fleeting surface treatment rather than a deep and demonstrable good. (Activists, for instance, stay alert for “greenwashing,” in which corporations highlight their environmentally friendly practices primarily as a public

relations device without significantly changing their overall business practices). Green tactics only address one strand of a complex problem. In these globalized times, a more holistic approach seems a sensible and necessary response to the deep interconnection among human activities and other “natural” systems.²

Sustainable design offers such an approach. It grows out of a broader set of policies and theories about sustainability that have developed over the past three decades. To meld two of the definitions that design historian Victor Margolin provides in his essay in this catalogue, sustainability involves meeting the needs of the present without sacrificing the capacity of future generations to meet their own needs, and doing so with equal attention to social and environmental justice.³ Theorist Tony Fry prefers to think in less anthropocentric terms; he asks “is the essential project ‘sustainable development’ (the reform of the existing methods of development, but retaining its fundamental objectives) or ‘the development of sustainment’ (redirecting development toward a very different basis for the creation of economy, society, and a relation between human beings, the artificial worlds they create, and the biosphere)?”⁴ Despite these differences of emphasis, both definitions underscore the need for change and the capacity for human action to enact it.

Sustainable design puts such thinking into practice by reimagining the ways we live and the stuff of daily life: *structures* such as offices, homes, and other buildings; *objects* such as tools, books, clothes, and cars; and *processes* and *networks* such as transportation and recycling systems. In doing so, it utilizes many established elements of green design, such as the use of recycled materials and renewable energy sources. But to reiterate, sustainable design posits that a purely green approach, which considers environmental questions in isolation from other factors, is incomplete and ineffective. Ethics have to be considered, along with a pragmatic attention to the entire life cycle of any designed thing from its production, through its useful life, to its disassembly and whole or partial reuse.⁵ Although sustainable design practices are gaining footholds in societies around the world through personal, civic, and even corporate efforts, the complexity of our current situation means that massive change is indeed necessary and only just starting to percolate in the face of many and persistent obstacles.

A sustainable art?

One can easily see how this sort of design might affect daily life. But how does it resonate with art making and particularly with the art presented in *Beyond Green*? At any given moment, artists have access to a relatively limited set of visual languages and conceptual strategies, picking up on or pushing against them. These must be considered along with the broader cultural context—the widespread desire for a more sustainable future—mentioned earlier.

During the 1960s and early 1970s, large numbers of artists began favoring ideas over objects and devising works for sites other than gallery and museum spaces. Growing out of this shift, and in tandem with wider phenomena such as the lingering effects of 1960s countercultural experiments and a growing sense of urgency around environmental problems, some artists began to pursue land art: environmentally based projects informed by conceptual and site-specific modes of art making. Earthworks—one variety of land art—consisted of works sculpted in (and in fact, from) remote or pastoral landscapes and often made no obvious environmental claims.⁶ Other examples from this period were informed by more explicitly pragmatic and didactic purposes, focusing for instance on the impact of human development on particular ecosystems.⁷ Since the late

1970s, increasing numbers of environmental projects have dealt not only with such out-of-the-way sites but also with towns and urban centers.⁸ One common trait of these diverse works—apart from their engagement with environmental material—has been their emphasis on particular places.

Whether or not the artists in *Beyond Green* directly refer to these predecessors, their work must be considered in relation to and in distinction from them, and one key difference concerns this issue of site specificity. Many of the *Beyond Green* artists have worked in such modes, which remain a rich part of contemporary practice.⁹ They also work, however, with a more nomadic sensibility exemplified by the mobile structures, objects, and processes/networks featured in this exhibition. Such works might have a generative connection to a particular spot, but they can mutate and adapt over time and in new places. Additionally, many address the contested spaces of contemporary cities and towns and thus might be seen as extending that strand of environmental work that emphasizes populated places rather than remote ones. Such projects chip away at perceptions that “the environment” is something “out there” and that cities are not as deeply connected to other ecosystems as they are to global trade networks. They reflect the current reality that as far-flung people and places become more entwined, ever-spreading populations and communications networks reduce the number of places that might qualify as “out there.” (They also remind us that, for all their flaws, cities have some innate characteristics—for instance, the pooling of resources made possible by density—that can be amplified into sustainable spaces.)

In addition to site-specific and environmentally focused predecessors and parallels, the artists of *Beyond Green* should also be considered in relation to two aspects of European and American art during the 1990s that have an even more direct relationship to their work: the rise of critical practice and the fertile crossover between art and design.

Critical practice in art can be defined as an ethically based, conceptually grounded approach that addresses the social sphere from a position of critique and does so by embracing process as well as product and involving multiple constituencies, sites of production, and strategies for collaboration. As artist and critic Dan S. Wang writes,

what critical practices share is a fundamental aspiration: to present questions and challenges about the way the world is, the ways we perceive it, and the ways in which we can act in it. These questions or challenges might be presented in general terms or with respect to a particular social detail or situation. This aspiration can be described as inherently critical, because the inescapable implication is that a world with different social arrangements, behaviors, or both is possible.¹⁰

Of course there is nothing new about that pull toward relevance, the impulse to grapple with the pressing questions of one’s time and even to use creative endeavors as a means to enact social change. That desire recurs again and again in art, but it finds varied manifestations among different generations and situations.¹¹

In the 1990s, new modalities of art making channeled the urge for social engagement into particular forms. As indicated above, collaboration has been an especially important vehicle. The last decade has seen the formation of many successful artists’ groups

that address social questions not only by working with people outside usual art communities but also by forming collectives and thereby contesting or sidestepping traditional notions of authorship while also pooling resources. Equally important has been the spread of conversational and relational ways of working that derive their meaning in part from interactive processes. The latter have yet to be adequately addressed by historians and critics, but some important attempts have been made: art historian Grant Kester coined the term “dialogical art” for art that takes form not through objects but rather through platforms or processes meant to foster dialogue;¹² and critic Nicolas Bourriaud devised the influential term “relational art” to describe works that take on meaning largely through the participatory engagement of the audience.¹³ Such modes of working are part of the wider artistic culture (and counterculture) of our moment, and though used by artists with differing aims, they have been particularly strong channels for critical practice, which has in turn been an especially fertile and increasingly visible presence within American and European art since the mid-to-late 1990s.¹⁴

During roughly the same period, design and lifestyle emerged as another major area of investigation for European and American artists, who expanded their practices by creating functional works that drew on the visual languages and materials of fashion, architecture, and interior and product design.¹⁵ This blurring of boundaries paralleled the general ascendancy of design as a driver of desire within popular culture. Think for instance of the popularity of lifestyle magazines that cut across wide demographics, from *Readymade* to *Wallpaper* to *Martha Stewart Living*, the success of the Scandinavian retailer Ikea, or Target’s promotion of itself as a low cost/high style purveyor of “design for all.” Critic Hal Foster, among others, has unpacked some of the problematics of the infusion of design into so many aspects of contemporary culture, as we all become targets of increasingly focused niche marketing strategies aimed to infuse the “designed subject” with ever-greater consumer needs.¹⁶ Some of the artists investigating design share his concerns or have looked away from consumerist drives and toward emancipatory ways of using design that draw on the utopian ideals of past moments of art/design overlap (the Bauhaus, the Constructivists) or more directly on progressive thinkers outside the art world, such as Buckminster Fuller or Victor Papanek, author of the 1972 classic *Design for the Real World*. The latter strand of practice has been especially important for *Beyond Green*.

In many ways the ascendancy of design and the rise of critical practice in art have been distinct developments; many artists exploring design as a site of investigation have no interest in engaging social questions, and many others working in a relational manner have little investment in making objects. The convergence of these two strands can provide rich opportunities for artists to create satisfying visual forms that provide new ways of embodying critical practices. And when this convergence occurs around environmental questions, it resonates strongly with sustainable design’s goal of bringing social and aesthetic concerns together with environmental and economic ones.

Beyond green and into the museum

So what can we gain—or lose—by bringing these hybrid practices together within the particularly powerful framing space of the museum?

For museums to remain relevant, they must make space for projects that productively explore the tensions between the world “out there” and the protected precinct of the museum through works that provide rich experiences for visitors. In all its hybridity and occasional messiness, such work extends the boundaries of contemporary art in important ways. Museum exhibitions provide a means of introducing this work to wider audiences and, with luck, of securing a place for it within official records of art history. On a more practical level, through the commissioning of new projects and other kinds of support to artists, museum exhibitions can provide material resources and recognition that may be useful to the artists as they pursue their own independent projects.

Museums can themselves be strengthened by stretching to accommodate such art. Practices that perforate the boundary between the museum and the rest of the social sphere can make even the famously difficult white cube more responsive to current art and enticing to visitors of all kinds. When practitioners from different backgrounds come together to participate in exhibitions and accompanying programs, the museum becomes a platform from which to sustain existing networks and to create new ones. [Figure 1] Museums can also learn from art they present; in this case that means taking up the challenge to make museums more sustainable spaces.¹⁷

There are potential losses as well. The art presented in *Beyond Green* was for the most part planned with a dual commitment to its discursive and speculative function within the museum and its application in other arenas.¹⁸ Still, some of the projects sit a bit more comfortably within the white cube than others, and there is always a risk that the museum setting could overdetermine the ways that visitors respond to these works. Indeed, other works that might fall under the heading “sustainable art” would not (could not) be appropriately housed in museums. Still, it is worth presenting works like these in spite of what is lost; the benefits—not the least being the potential for institutional change—outweigh the risks.

Who knows what will come next, and whether sustainable design will have a lasting impact on art making, museum practice, and the social sphere. Still, I find it heartening that space seems to be opening up both within the wider culture and inside the art world for practices that feel hopeful. Ironic detachment has its benefits (and indeed, appears within some of the works in this exhibition), but earnest engagement has a place and is finding expression within complex, experimental forms of contemporary production. The trick, of course, is not only finding ways to enact change in large and small ways but also finding the creativity, courage, and resources needed to sustain it over time.



FIG. 1
At a community design workshop held during *Beyond Green*’s opening weekend in Chicago, teams of exhibiting artists, community members, students, professors, designers, architects, planners, and others created this model, which shows playful and practical ways that sustainable design might be used to improve the built environment in an area adjacent to the University of Chicago’s campus.

Thanks to my colleagues at the Smart Museum and iCI, and to Tony Fry, Peter Nicholson, Victor Margolin, and Dan S. Wang for sharing their responses to this text. I also thank Parkett editor Cay Sophie Rabinowitz for commissioning a piece for the winter 2005 issue of Parkett that provided me with an initial opportunity to explore these ideas in print.

- 1 See Bruce Mau, *Massive Change* (London: Phaidon Press, 2004).
- 2 Useful recent texts include Tony Fry, *A New Design Philosophy: An Introduction to Defuturing* (New South Wales University Press, 1999), Michael Braungart and William McDonough, *Cradle to Cradle: Remaking the Way We Make Things* (New York: North Point Press, 2002), and "The Death of Environmentalism: Global Warming Politics in a Post Environmental World," a 2004 paper by Michael Shellenberger and Ted Nordhaus that was commissioned by the Nathan Cummings Foundation and widely distributed over the Internet.
- 3 See Victor Margolin's essay in this volume, p. 21.
- 4 Tony Fry, email correspondence with the author, October 23, 2005.
- 5 Two popular conduits for ideas about sustainability, especially in relation to business, are *Cradle to Cradle*, (note 2) and Paul Hawkins, Armory Lovins, and L. Hunter Lovins, *Natural Capitalism: Creating the Next Industrial Revolution* (Boston: Back Bay Press, 2000).
- 6 Apart from the now ubiquitous *Spiral Jetty*, famous examples include Michael Heizer's massive sculptural excavation into a Nevada desert, *Double Negative* (1969), or Richard Long's performative work *A Line Made by Walking* (1967), in which he flattened a path through a grassy meadow and documented the results with a photograph. Some projects initiated in the 1970s remain works-in-progress, such as James Turrell's *Roden Crater*; these iconic forms of land art remain the most well-known manifestations of environmental work, receiving continued attention in the scholarly and popular press. Key texts include John Beardseely, *Earthworks and Beyond* (New York: Abbeville Press, 1984), Suzaan Boettger, *Earthworks: Art and the Landscape of the Sixties* (Berkeley: University of California Press, 2002), Jeffrey Kastner and Brian Wallis, *Land and Environmental Art* (London: Phaidon Press, 1998), and Gilles Tiberghien, *Land Art* (New York: Princeton Architectural Press, 1995).
- 7 For the former, think of Robert Smithson's unrealized plans of the early 1970s to remediate mining sites as a sculptural project; for the latter, Joseph Beuys's public tree planting, the *7000 Oaks Project*, first realized in Kassel in 1980, or Helen and Newton Harrison's gallery installations exploring watersheds.
- 8 Projects by Mel Chin, Mark Dion, Platform, Buster Simpson, Susan Leibovitz Steinmann, and Mierle Ukeles are just a few of the examples that could be mentioned here. The Cincinnati Arts Center's 2002 exhibition *EcoVentions: Current Art to Transform Ecologies* also explored this topic.
- 9 Critics such as Miwon Kwon and Claire Doherty have been useful in pushing the understanding of site-specificity; see Miwon Kwon, *One Place After Another: Site-Specific Art and Locational Identity* (Boston: MIT Press, 2004) and Claire Doherty, ed., *From Studio to Situations: Contemporary Art and the Question of Context* (London: Black Dog Press, 2004).
- 10 Dan S. Wang, "Practice in Critical Times: A Conversation with Gregory Sholette, Stephanie Smith, Temporary Services, and Jacqueline Terrassa," *Art Journal* 62, no. 2 (Summer 2003): 68-88.
- 11 Examples as varied as nineteenth-century painter Gustave Courbet, the early-twentieth-century Russian revolutionary Constructivists, artists affiliated with the Popular Front between the first two world wars, and the 1980s work of HIV/AIDS activists Gran Fury are just a few that might be cited here.

- 12 Kester uses one of the artists' groups in *Beyond Green*, WochenKlausur, as a primary example. See Kester, *Conversation Pieces: Community and Communication in Modern Art* (Berkeley: University of California Press, 2004).
- 13 Nicolas Bourriaud, *Relational Aesthetics* (Paris: Press de Racel, 1998).
- 14 This is partly a function of technological changes: the Web allows autonomous artists and artists' groups to form networks and share information more quickly than in the past so that groups like Temporary Services in Chicago can maintain an ongoing dialogue with artists, writers, and activists in Vienna, Copenhagen, Paris, or Portland. That same technology helped fuel the international antiglobalization and antiwar movements, which have produced ideologies and visual strategies that have often overlapped with critical practice, as demonstrated by *The Interventionists*, an exhibition curated by Nato Thompson at MassMoca in 2004. Shows like Thompson's are indicative of our situation within one of those recurring moments at which the broader art world has directed attention to socially engaged and activist practice through a developing critical and art-historical examination as well as through major museum exhibitions.
- 15 Some of the influential artists working in this manner include Atelier van Lieshout, Jorge Pardo, Tobias Rehberger, Joe Scanlan, Superflex, and Andrea Zittel. Such crossover has been documented through exhibitions like the Generali Foundation's *Designs for the Real World* (2002), the Walker Art Center's *Strangely Familiar: Design and Everyday Life* (2003), which focused on design but shares similarities with many of the practices featured in *Beyond Green*, and several design shows that have featured artists in *Beyond Green*, including the Cooper Hewitt National Design Museum's *Inside Design Now: National Design Triennial* (2003) and the Museum of Modern Art's *Safe: Design Takes on Risk* (2005).
- 16 See Hal Foster, *Design and Crime (and Other Diatribes)* (New York: Verso, 2002): 13-26.
- 17 I have taken this phrase from a symposium at which I discussed related issues, "Dual Commitment: Recent Examples of Public Art in Austria and the United States," organized by the artists Wolfgang Schneider and Beatrix Zöbl and held in various sites in Linz, Salzburg, and Vienna, July 2005.
- 18 To extend this thought, there are many ways to generate more sustainable museums: for instance, how might we devise more energy-efficient climate control systems, or bring sustainable thinking into the often wasteful practices of exhibition design, or do more to share resources and strengthen networks with other institutions or with our neighbors? Some of these changes would require major shifts, but others might be implemented more easily.

Reflections on Art and Sustainability

by Victor Margolin

VICTOR MARGOLIN

The term “sustainability” has taken on varied meanings in the twenty-five years since it first came into use. In 1987, the World Commission on Environment and Development, headed by former Norwegian Prime Minister Gro Harlem Brundtland, defined it as follows:

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts: the concept of ‘needs,’ in particular the essential needs of the world’s poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organization on the environment’s ability to meet present and future needs.¹

This definition appeared in the Commission’s report *Our Common Future*, which was published fifteen years after the United Nations Conference on the Human Environment in Stockholm—the first in a series of international meetings on environmental concerns; fifteen years after the Club of Rome’s seminal study *The Limits to Growth*; five years before the Earth Summit in Rio de Janeiro, which resulted in the document *Agenda 21: The Rio Declaration on Environment and Development*; and fifteen years before the last of the global United Nations environmental gatherings, Earth Summit 2002, which was held in Johannesburg, South Africa.

Because sustainability initially arose within the framework of international politics, it is a more pragmatic approach to overcoming social injustice and environmental ills than the idealistic ecological theories that include deep ecology, which stems from the writings of Norwegian philosopher Arne Naess; spiritual ecology, which puts a particular emphasis on the capacity to experience oneness with the planet; James Lovelock’s Gaia movement; and social ecology, which emphasizes social organization and collaboration with nature.²

My own definition of sustainability follows in principle the statement in *Our Common Future* that “the strategy for sustainable development aims to promote harmony among human beings and between humanity and nature.”³ However, I choose to put the Brundtland Commission’s connection between the social and the environmental into a sharper political focus by substituting the term “social justice” for “harmony among human beings” and “environmental justice” for harmony “between humanity and nature.” Sustainability and the methods of achieving it are inherently political and, thus, contestable. Therefore, its definition should emphasize the need for struggle to achieve sustainable goals.

The culture deficit

In the various meetings and declarations on sustainability mentioned above, discussions of culture were nonexistent. The closest the United Nations came to the subject was the 1995 report *Our Creative Diversity*, which sums up the deliberations of UNESCO’s World Commission on Culture and Development. The commission took up problems of culture within the broad context of economic and social development and consequently had little to say about specific cultural activities such as literature, music, or art.⁴

I was heartened to find the cultural question addressed in a recent essay by Hildegard Kurt, "Aesthetics of Sustainability," which appeared in a volume initiated by the German artist Herman Prigann.⁵ Kurt argues that questions about the cultural and aesthetic dimensions of sustainability have lagged behind the debates on the topic that originated in the natural and social sciences during the mid 1980s. Though she does not refer directly to themes of human injustice such as torture, disease, and poverty with which artists have long been engaged, she does criticize the art world's limited view of sustainability: "In the art world," she writes, "lively dialogue is often hindered by the error of seeing sustainability only as an 'environmental subject' and not as a genuinely cultural challenge."⁶

Kurt also highlights the lack of cultural considerations in the sustainability discourse. "Anyone trying to find out why sustainability is not attractive as the task of the century," she writes, "will come across the 'culture deficit' inherent in the conception of the model. In fact you will largely look in vain for artists as protagonists of sustainable future development in the *Rio Declaration* and *Agenda 21*. And culture as an element in society, going beyond the arts and humanist education to include symbolic and aesthetic creative practice by individuals and societies, is scarcely mentioned either."⁷ Given that discussions of culture, and especially art, are missing from the ecology and sustainability discourses of large international organizations and populist ecological movements alike, how does one begin to think about art's relation to sustainability such that a new understanding of artistic practice might result?

Sustainable art and its precedents

Before continuing to speculate on this topic, I would like to briefly review some of the art movements and projects that one might consider as sustainable art or precedents for it. The projects fall into several categories: art that engages with the land or landscape; art that incorporates sustainable practices such as recycling; and art that responds to social issues through the production of objects or discourse. Within the first category, artists have engaged with the land in different ways, not all of which can be seen as environmentally sustainable. Various terms such as "environmental art," "earth art," "land art," and "eco-art," have characterized these interventions. Walter De



FIG. 1
Robert Smithson
Spiral Jetty, April 1970
Great Salt Lake, Utah
Black rock, salt crystals, earth, and red water (algae)
3 x 15 x 1500 feet
Art © Estate of Robert Smithson / licensed by VAGA, New York, NY

Maria's *Lightning Field* (1977), Michael Heizer's *Double Negative* (1969), Dennis Oppenheim's *Time Pocket* (1968), and Robert Smithson's *Spiral Jetty* (1970) [FIGURE 1] represent artists' intentions to alter the landscape, either by making cuts, gashes, or holes in its surface, forming new shapes from large masses of earth, stone, or other materials, or, as with De Maria's *Lightning Field*, filling a large field with metal rods lined up in symmetrical rows.

Other artists produce sculpted or constructed forms that they place in

the landscape to enter a dialogue with it. These include Mary Miss's *Sunken Pool* (1974) and Alice Aycock's *Circular Building with Narrow Ledge for Walking* (1976), the latter a structure that invites participation from the public. A third group of artists work with processes found in nature. Their projects are exemplified by Hans Haacke's *Ten Turtles Set Free* (1970) and Newton Harrison's *Slow Growth and Death of a Lily Cell* (1968). Related projects include Alan Sonfist's *Time Landscape* (1965–1978–ongoing) and Joseph Beuys's *7000 Oaks* (1982–1987) [FIGURE 3].⁸ Sonfist obtained the use of a land parcel on LaGuardia Place in New York City, where he planted trees and shrubbery that would have grown in the precolonial forests of the area, while Beuys's project, which he initiated in 1982 for documenta 7 in Kassel, Germany, involved reforesting the city of Kassel. One of the largest environmental art works ever executed, it was finally completed in 1987 after he died.

In recent years, art in the landscape has taken on a different meaning when it has been used to reclaim sites that were previously abandoned or even subject to some destructive force. To create *Wheatfield—A Confrontation* (1982), Agnes Denes planted and harvested two acres of wheat on the Battery Park landfill close to Manhattan. As a discursive act, the project demonstrated how a piece of wasteland could be brought back to life, although it ended without transforming the landfill permanently. In Germany, Herman Prigann, who created the *Terra Nova project* (1996–2000) to reclaim damaged or destroyed landscapes, turned Rheinelbe, a former coal mine area near Gelsenkirchen that had become a garbage dump, into an archeological field replete with traces of former buildings, stone sculptures, and a major landmark called the Skystair.

Recycling is another activity that contributes to a sustainable environment. Since the 1920s, making art out of previously used materials has been one of the significant strands of modernism, although until recent years it has not been framed by a discourse of ecology or sustainability. While Kurt Schwitters made hundreds of collages from the printed flotsam and jetsam of Weimar Germany, critics have never considered him to be an ecological artist. The same is true for John Chamberlain, who reclaimed cast-off auto bodies, which he crushed and shaped into large metal sculptures. On the vernacular side, the "muffler men" made by folk artists in the American Southwest or the toy cars, trucks, and motorcycles created by street artists in Tanzania and other African countries are also examples of industrial waste that is turned to productive use.⁹ Mierle Ukeles, who has served for almost thirty years as



FIG. 2
Mierle Laderman Ukeles
Media Flow City from *Flow City*, 1983–present
Design for public art/video environment
at 59th St. Marine Transfer Station,
New York City Department of Sanitation

artist-in-residence at the New York Sanitation Department, dealt with the problem of waste a different way. In her project *Flow City* (1983–present) [FIGURE 2], she transformed a garbage-recycling unit of the Sanitation Department into a site where the public could observe how garbage is disposed of in actuality and on a video screen. As part of the project, she created a walkway, bridge, and viewing wall that were made of recycled materials.

Art that responds to social injustice is perhaps the largest category that might belong to a culture of sustainability, although it is scarcely visible as such since many artists make art based on social concerns without relating their work to sustainability issues. Within this category, for example, would be Joseph Beuys's well-documented and numerous political actions that include the information office he set up as part of his Organization for Direct Democracy (1971), his founding of the Free International University for Creativity and Interdisciplinary Research in Düsseldorf with the writer Heinrich Böll (1974), and his involvement in the genesis of the German Green Party (1979).

Art and sustainability

Three issues are central to the discussion of art and sustainability. The first regards form. If there is an “aesthetics of sustainability” (Kurt's term), then it should be based on something that art provides as a basis for aesthetic judgment. This need not be a physical object, or even an immaterial project. It might be a gesture or even a mental action. What forms, then, does art take in a culture of sustainability? Are they vastly different from the forms of art in mainstream visual culture, or are they sufficiently analogous to be easily understood in a new context?

Kurt's view of art in a modernist context leads her to characterize it as “a form of knowledge.” This definition enables art to bring “aesthetic competence into the cognitive process—which makes it different from science and at the same time its equal.”¹⁰ Its not clear what antecedents in modernism's past Kurt is referring to when she characterizes art as knowledge, but one might imagine conceptual art, the Situationists, and some Fluxus activities as examples. Kurt believes that characterizing art as a form of knowledge can empower it discursively.

Once art is recognized as a cognitive medium, integrating aesthetic creative knowledge into the sustainability discourse would have a retrospective effect on that discourse, would change it. Art as a mode means that sustainability is seen, felt, thought, and conceived differently—and communicated differently.¹¹ Though Kurt's emphasis on art as a bearer of cognition brings it into relation with a discourse on sustainability, it does not clarify sufficiently what the boundaries of this discourse are, nor does it explain the contribution that art might make to it.

Adopting the broad definition of form that Kurt and others have provided leads to a second issue: art's relation to other practices that are concerned with sustainability. After recognizing art as a cognitive medium, how do we then distinguish its particular characteristics from those of architecture, landscape design, graphic design, community action, and additional activities that engage with problems of sustainability, especially when the projects appear to be similar?

A third issue is related to the second. How do we think about art that moves from discourse to action, art whose intent is to produce a useful result? And what about artists who generate ideas and plans rather than objects or actions? Are they planners

or artists, and by what criteria do we evaluate their work? In the never-ending debates on the difference between art and design, the distinction usually comes down to the primacy of discourse in artistic practice and the fact that artists need not be accountable, as designers are, to produce something useful. But when artists want to achieve social results without identifying themselves as designers, how should the critical community respond, and why is the artists' work given special status in a museum or gallery if its aims are predominantly practical?

Problems of interpretation

The widening of artistic possibilities in the last century has had positive results for the future of art and particularly for an art that engages with issues of sustainability. Besides the production of objects, two new elements have been added to artistic practice: participation and action. But these new possibilities have also created problems of interpretation that must be addressed before we can discuss further art's contribution to a sustainable culture.

Earth artists and environmental artists created projects that drew the spectator in as a participant. The experience of environmental art was immediate and more visceral than viewing a picture on a gallery wall. Environmental art expanded the sites of artistic display beyond the gallery or museum, and even the urban spaces of public sculpture. In Beuys's *7000 Oaks*, for instance, people were also invited to participate in planting the trees, not only to walk among them.

Beuys's project, like a number of others, spills over into the realm of action and raises questions about how to determine its aesthetic value. Reforesting Kassel was an ecological gesture to redress the balance of nature in the urban landscape. Though initiated by an artist, it transcended art discourse and became social action. So did a series of similar projects by artists in the United States and Europe. Consider Harriet Feigenbaum's land reclamation work, *Erosion and Sedimentation Control Plan for Red Ash and Coal Silt Area—Willow Rings* (1985). On a site damaged by strip mining, the artist planted two concentric circles of willow trees around a pond that was formed from coal-dust run-off. The site became a public park that also preserved the memory of the land's prior use. Similarly, Bonnie Sherk founded The Farm in 1974, bringing together an interdisciplinary team to create a sustainable ecosystem and educational park on a piece of unused land near a



FIG. 3
Joseph Beuys plants the first tree for the 7000 Oaks project
at documenta 7, 1982, Kassel, Germany

San Francisco highway interchange. Finally, Mel Chin's *Revival Field* (1990–93) at Pig's Eye Landfill in St. Paul, Minnesota, became a biological experiment in which the artist explored the use of plants to remediate the soil in a landfill that had been contaminated by heavy metals.¹²

Formal qualities are easy to identify in the projects by Beuys, Sherk, or Feigenbaum, where we are looking at configurations of materials, whether artificial or natural, in patterns. But what about Chin's research on plants to remediate contaminated soil? Where is the aesthetic dimension? In the ethic of Chin's intention? In the ingenuity of his concept? In the physical arrangement of the plants? The challenge here is difficult, as it is in other eco-art projects. Critics generally evade the interpretive problem by considering such projects within existing categories such as environmental art or land art and then loading a set of prior aesthetic conventions onto them.

And what is the ecological aesthetic of Beuys's Social Sculpture? It has been described as a shift from museological concerns about the context of art to anthropological ones. "Creativity, to him, was a science of freedom. All human knowledge comes from art; the concept of science has evolved from creativity. And so it is that the artist alone is responsible for historical awareness; what counts is to experience the creative factor in history. History must consequently be seen sculpturally. History is sculpture."¹³ The concept has even been institutionalized in the Social Sculpture Research Unit, directed by artist Shelley Sacks at Oxford Brookes University in England. Sacks, who worked with Beuys, describes the projects initiated there as "instruments that involve 'trans-actions' between people, issues and places. They are arenas for negotiation, creating shared currency and new forms of dialogue."¹⁴ What, then, is the basis for an aesthetic judgment? Is there a form to the organization of the workshops that invites aesthetic consideration? The central focus of the projects appears to be the creation of an experience for the participants. While Sacks does not present the projects as artworks, they derive from Beuys's intention to collapse the proverbial boundaries between art and life.

Critics have worked hard to fit Beuys's projects and others like Alan Sonfist's *Time Landscape* or Newton and Helen Harrison's *Portable Farm: The Flat Pastures* (1971–1972) into an art discourse when, in fact, the projects sometimes have more to do with other practices such as landscape architecture, design, or even biology. Part of the problem is that many artists want to participate in social processes or make statements about social situations in ways that transcend the conventional forms of representation that museums and galleries were originally created to house. Even as their projects avoid the commodity forms on which the art market depends, they are sometimes led to produce documentation that nevertheless conforms to the conventions of museum and gallery display as well as to the commodity demands of the art market.

Problems of identity

Once artists enter the realm of action, it is difficult to characterize their projects differently from those of other actors such as landscape designers or even architects. In a recent exhibition, *Groundswell*, at the Museum of Modern Art, a group of exemplary landscape designs were presented. What differentiates them from the previously described environmental projects is that they dealt primarily with postindustrial urban landscapes.¹⁵ The museum's architecture and design department organized the

exhibition, thus preserving the conventional distinction between the practical and the discursive arts. What MoMA's departmental division fails to acknowledge, however, is that the discursive has spilled over into the practical and the practical has become more discursive. The landscape projects have as much to do with art discourse as artists' action projects do with design. The prevailing division between art and design practice is one of the biggest obstacles to holistically envisioning a new sustainable culture and remains a challenge not only for museums, but also for artists and practitioners.

Let us return for a moment to Hildegard Kurt's intention to discover an "aesthetics of sustainability" and her claim that in order for art to function as a cognitive medium, it must be "seen, felt, thought and conceived differently." Although we recognize that culture consists of multiple discursive modes that complement each other's ability to describe, explain, or even represent experience, defining the boundaries of those modes has become increasingly difficult. By separating art too rigidly from complementary practices that engage the same issues and situations, one runs the risk of maintaining a misleading cultural hierarchy in which art projects are understood to carry a heavier discursive load than more pragmatic designs. Thinking this way, however, often minimizes the discursive power in a practical design project.

Artists who call attention to social or environmental problems sometimes garner more notice and public interest than the people who are engaged directly with such problems. For a recent exhibition of his work at Chicago's Museum of Contemporary Art, artist Dan Peterman was invited to build three shed structures—a bicycle repair shop, a marketplace/classroom kiosk, and a garden shed—using standard waste containers. Two were relocated to a local park during the exhibition and adapted for a variety of cultural uses. However, the kiosks received more public attention and occupied more discursive space as art than as design. Had such kiosks been placed in the park directly, they might have merited a mention in the newspaper but not gained the cultural capital they accrued as works of art. By presenting his kiosks in an art exhibition, Peterman performed a service in that he called the need for such structures to public attention, and one could well argue that he used the cultural capital of art's discursive power to call attention to a social need.

Nonetheless, the hierarchy between art, architecture, design, and planning remains a paradox within the culture of sustainability, where the principal criterion of value is to bring into being sustainable projects and environments. The social space for the demonstration of such projects is still coded unsustainably according to discursive hierarchies that privilege some practices over others. This would be less of a problem if the formal manifestations of each practice were sufficiently distinct, but as these formal distinctions break down, we need to open up the discourse about projects to create greater continuity between them.

What gets lost when a cultural hierarchy of practices prevails is the wider knowledge of projects that do not fit easily into an art-world or museum framework. I think here of the many productive ideas that resulted from research at Nancy Jack Todd's and John Todd's New Alchemy Institute, particularly their "living machines" that have been successfully used for water treatment and other purposes but also their ecological designs for urban spaces—hydroponic factories, back lot bioshelters, and bus stop aquaculture designs.¹⁶ These are equivalent to work that some artists have carried out, but they have not been linked to related projects in the art world.

A strategy for a sustainable future

Beuys was instrumental in creating the current difficulties that surround the problem of “ecological aesthetics.” He was strategically brilliant in trading on his recognition as a gallery artist to gain attention for his action projects such as *7000 Oaks* and the polemics of his lecture tours. Ultimately all these activities have been drawn into an art discourse, but they don’t fit comfortably. To deal with new forms of human expression and action, critics and curators are continually trying to stuff them into institutional boxes where they don’t fit. Old categories need to collapse before we can begin to create a different dialogue on aesthetics in a sustainable culture.

We will need a new aesthetic to embrace the three categories of object, participation, and action without privileging the conventional formal characteristics of objects. In this aesthetic, the distinctions between art, design, and architecture will blur as critics discover new relations between the value of form and the value of use. Hildegard Kurt was correct when she criticized the art world for viewing sustainability in terms of environmental subjects instead of as a larger cultural challenge. The culture that Kurt identified within the wider sustainability discourse remains an issue and needs to be overcome. This will lead to new forms of solidarity within the culture of sustainability.

Imagination is an artist’s greatest asset. It can produce bold visions of what a sustainable future might be like. People can be moved and aroused by powerful environments, innovative designs, and practical demonstrations of active engagement. With open minds and a willingness to collaborate, those who seek a place in the culture of sustainability must move forward. The problem of “ecological aesthetics” will solve itself.

- 1 World Commission on Environment and Development, *Our Common Future: World Commission on Environment and Development* (Oxford and New York: Oxford University Press, 1987): 43.
- 2 For a discussion of the major ecological theories, ideologies, and movements, see Caroline Merchant, *Radical Ecology: The Search for a Livable World* (New York and London: Routledge, 1992).
- 3 *Our Common Future*, 65.
- 4 *Our Creative Diversity: Report of the World Commission on Culture and Development* (Paris: UNESCO, 1995).
- 5 Hildegard Kurt, “Aesthetics of Sustainability,” in *Aesthetics of Ecology: Art in Environmental Design, Theory and Practice*, ed. Heike Strelow in cooperation with Vera David, initiated by Herman Prigann (Basel, Berlin, and Boston: Birkhäuser, 2004).
- 6 *Ibid.*, 239.
- 7 *Ibid.*, 238.
- 8 I have taken the breakdown of project types from Mark Rosenthal’s essay, “Some Attitudes of Earth Art: From Conception to Adoration,” in *Art in the Land: A Critical Anthology of Environmental Art*, ed. Alan Sonfist (New York: Dutton, 1983): 60–72.
- 9 See Timothy Corrigan Correll and Patrick Arthur Polk, “Muffler Men, Muñecos, and Other Welded Workers: Occupational Sculpture from Automotive Debris” and “Streetwise: The Mafundi of Dar es Salaam,” in *The Cast-Off Recast: Recycling and the Creative Transformation of Mass-Produced Objects* (Los Angeles: UCLA Fowler Museum of Cultural History, 1999): 31–80; 81–110.
- 10 “Aesthetics of Sustainability,” 240.
- 11 *Ibid.*
- 12 The projects by Beuys, Feigenbaum, Sherk, and Chin are documented in *Landscape and Environmental Art*, ed. Jeffrey Kastner, survey by Brian Wallis (London and New York: Phaidon Press, 1998).
- 13 Heiner Stachelhaus, *Joseph Beuys*, trans. David Britt (New York, London, and Paris: Abbeville Press, 1991): 64.
- 14 Shelley Sacks, “Performing an Aesthetics of Interconnectedness,” in the ongoing online exhibition *EnterChange: Performance and Nature*, curated by Wallace Heim for Green Museum, 2004, <http://www.greenmuseum.org/c/enterchange/artists/sacks>.
- 15 See the review by Nicholai Ourousoff, “Confronting Blight With Hope,” *New York Times*, Feb. 24, 2005.
- 16 An excellent introduction to the Todds’ work is Nancy Jack Todd and John Todd, *From Eco-Cities to Living Machines: Principles of Ecological Design* (Berkeley: North Atlantic Books, 1994).