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Greenhouse Britain: Creating a Context

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A new planetary cartography is emerging. Many beloved places and the built environment that supports them will one day be erased by water and weather. What new patterns of thinking, and of planning and building, will replace them?

Ecological artists Helen Mayer Harrison and Newton Harrison argue that the potential impacts of global climate change are “so compelling... catastrophic [and] destabilizing” that the discourse needs to include the voice of the artist.¹ “Greenhouse Britain” is their inventive inquiry into the cause and effects of changing weather patterns on the landscape of Great Britain. Its premise is a five-meter rise in sea level that will eventually displace up to two million British residents.²

As environmentalist Bill McKibben has written, it is art that helps us register events and issues that are otherwise too vast and unwieldy to be readily comprehended. Art gives us the mental images that allow us to act.³ The Harrisons believe it may ultimately allow us to reinvent how we live on earth.

Two Charrettes

The Harrisons have been working with climate change issues since 1974, when they remapped San Diego to show the local effects of seemingly distant global warming. The aim of “Greenhouse Britain” is to develop a poetic theory for settlements that are carbon neutral and deeply respectful of natural processes. So far this work has examined two British landscapes: the Pennine Range, near the Mersey River basin, and Dartmoor, between the Plymouth and Exe River basins. Each of these landscapes has been the focus of a week-long workshop on the potential to support new populations in what the Harrisons call a “self-nourishing, self-preserving system.”⁴

The Pennine charrette, called “On The Upward Movement of People,” was held at the University of Sheffield in the summer of 2007. With the participation of landscape ecologist Paul Selman (head of Sheffield’s Department of Landscape) and a multidisciplinary group of professionals and students, it had two main objectives: to dramatize the relationship between global warming and present patterns of habitation; and to invent new settlement patterns specific to the ecological and cultural narrative of the Pennine region.

The charrette began with an attempt to imagine what carbon-neutral, or even carbon-negative, settlements might look like. The Harrisons proposed basic parameters for carbon sequestration and emissions.⁵ The charrette team then tried to determine a functional ratio of built to open space that would allow the number of inhabitants to be attuned to the amount of carbon sequestered within the community itself.

Working within local cultural and biological systems, the Harrison team then developed a proposal for new settlements within an open-canopy forest. Their basic calculus was that a forty-square-mile forest/meadow complex could sequester up to 50 percent of the carbon produced by a typical town, and they assumed that conservation and life-style change would account for the remainder.⁶ Using this rationale, the team proposed adding up to eighty new towns of three to four thousand residents each to the region. These new settlements would complement the cultural patterns that have typified the Pennine landscape for centuries.⁷ The resultant settlements also hinted at Ebenezer Howard’s “garden cities”: small, spatially distinct villages situated in an open landscape of moors and farmland.

The second charrette, “Looking Ahead: Three Stability Domains for Dartmoor,” was held in June 2008 at the Institute of Grassland and Environmental Research (IGER) in North Wyke. The Harrisons had been invited here by its director, Prof. Les Firbank, to consider large-scale landscape changes within the context of global warming.

The relationship between Firbank and the Harrisons began in the late 1990s when the artists contacted him for help on their project “Casting a Green Net.” According to Firbank: “The win for me in doing this is that it allows rephrasing of scientific issues in ways that cast new light on them. Our research is fundamentally reactive—‘things have happened, now what do we do about it.’”⁸ By contrast, Firbank added, working with the Harrisons introduces the possibility of “long” thinking. The Harrison’s methodology encourages biologists, ecologists, and other scientists to imagine a future beyond their immediate problems, and to develop proactive scenarios.

Critical Context

One critique of the Harrisons’ work is that the small settlements they propose won’t support the huge numbers of eventual climate-change refugees. There are sixty million people in Great Britain, and villages in an open canopy forest will provide housing for fewer than fifteen million.

In reply, the Harrisons point out that world’s population has expanded to fit a carbon-positive world based on the use of fossil-fuel energy sources. If new ethical and sustainable patterns of habitation are going to be carbon neutral, they must focus on the carrying capacity of the land. This means depopulation must be openly discussed on an international level.



The issue for the artists isn't how to reinhabit urban wastelands, as Alan Berger or Roger Trancik would argue, or the need to reinvent traditional towns, as Gordon Cullen and other theorists have proposed. Rather it is how to respond to the unique conditions that climate change is creating.

Their work corresponds in this regard to Ian McHarg's call to relate development to the carrying capacity of the land.⁹ However, the Harrisons propose to begin with the causes of climate change and allow for the emergence of solutions from that point. The answers *may* include solutions for drosscapes and for building new towns based on older models, but these will be site-specific results and not predetermined.

As Bill McKibben has suggested, metaphors and the cultural narratives of a place generate powerful mental images that can help reframe responses to climate change. For example, rather than asking how many dwelling units can be accommodated per acre, the Harrisons ask about "tuning settlement to the carrying capacity of the terrain."¹⁰ And rather than thinking in terms of development, they speak of "settlement," because this infers a putting down of roots and a deep linking with a specific geographical place.

Their larger goal is to shift the metaphor from one of quantity and "land as resource" to one of collective well-being. If environmental designers continue to frame land practices using the economic models of dwell-

Left: View of the steeply sloping moorlands of the Peak District in the Pennine foothills. The area is sparsely populated with small villages, farms, and tourist-related industries. It was selected for study because it had no major city, and had the potential to become more productive. Photo by author.

ing units and development this will ensure present practices will continue to dominate, usually to the detriment of ecological well-being.

To a landscape ecologist, thinking from the point of view of a micro-organism, a log or rock can be as much of an ecosystem as an entire watershed. Likewise, the Harrisons look at rising sea level from the point of view of the ocean, imagining it as a “great draughtsman.” As the water transforms the land, it simultaneously opens up the possibility that humans may transform their present, destructive relationship to the environment to one based on conviviality:

*Finally understanding
that the news
is neither good nor bad
it is simply that great differences
are upon us
that great changes are upon us as a
culture
and great changes are
upon all planetary life systems
and the news is about how we meet
these changes
and are transformed by them
or
in turn
transform them*¹¹

Looking Ahead

The conceptual model that the Harrisons propose for the Pennines and Dartmoor is transferable to other areas. But this is only possible with an understanding that each place tells its own story, and so suggests its own, original solution to the problems of global climate change. Newton Harrison has pointed out that no plan or system has been able to be all things to all people. The modern model that fragments systems and thinking, and claims control over all processes, also creates the culture of sameness that

flattens the individual geographies of place.¹²

The Harrisons’ process values the transformative capacity of art, and resists the separation of science and art. As Bruno Latour has said, in the bifurcation of the world into “matters of concern” (the social place of dreams and poetry) and “matters of fact” (the rational world of abstraction and measurement), “we had better believe the poet” who tells us that the world is not divided.¹³

The Harrisons’ work is a demonstration of how the artist’s method of improvisation, invention and inquiry can be useful as we collectively struggle to formulate new responses to the unprecedented and unimagined landscapes that will be created as by-products of the climate-changing industrial age.

Notes

“Greenhouse Britain” received a substantial grant from the Department of Environment, Food and Rural Affairs (DEFRA) Climate Challenge Fund, and Bright Sparks. Exhibitions of the Harrisons’ proposals, models and drawings were shown at several venues throughout Britain from November 2007 through June 2008. The exhibition schedule and documents are available on line at www.greenhousebritain.net.

1. Helen Mayer Harrison and Newton Harrison, “Greenhouse Britain: Losing Ground, Gaining Wisdom,” proposal pamphlet, July 2007, p. 3. Available at www.greenhousebritain.net (accessed 20 July 2008).
2. The Harrisons use five-, ten-, and fifteen-meter rises in sea level over the next one hundred years to illustrate how the landscape will change. Helen Mayer Harrison and Newton Harrison, “Greenhouse Britain,” p. 19. The Intergovernmental Panel on Climate Change estimates that sea level will rise as much as half a meter within one hundred years, but that number is conservative, as it is based on what is “very likely” and is “excluding future rapid dynamical changes in ice flow.” The melting of the Greenland ice sheet alone would cause a seven-meter rise in sea level. See Intergovernmental Panel on Climate Change, “Climate Change 2007: The Physical Science

Basis,” Working Group I, Fourth Assessment Report, February 5, 2007. Available at www.ipcc.ch (accessed 22 October 2007), pp. 13, 17.

3. Bill McKibben, “What the Warming World Needs Now Is Art, Sweet Art.” Available at www.grist.org, April 21, 2005 (accessed July 20, 2008).
4. Harrison and Harrison, “Text 2: On Process,” in “Greenhouse Britain.”
5. These parameters were set as follows: an average mature forest will sequester an average of 465 metric tons of greenhouse gases per acre; grasslands or meadows will sequester an average of 113 metric tons per acre; and a typical resident in the U.K. will emit an average of 10 metric tons per acre. See also Congressional Budget Office, “The Potential for Carbon Sequestration in the United States,” September 2007, p. 4. www.cbo.gov/ftpdocs/cfm?index=8624 (accessed February 14, 2008).
6. Harrison and Harrison, “Text 4: On Carbon,” in “Greenhouse Britain.”
7. Harrison and Harrison, “Text 7: On the Pennine Ring,” in “Greenhouse Britain.”
8. Author interview with Les Firbank, June 6, 2008.
9. Ian McHarg, *Design With Nature* (New York: Wiley, 1995), p. 156.
10. Harrison and Harrison, “Text 1: On the Upward Movement of People,” in “Greenhouse Britain.”
11. Harrison and Harrison, “Text 5: The Model,” in “Greenhouse Britain.”
12. Phone conversation with Newton Harrison. February 24, 2008.
13. Bruno Latour, “Nature at the Crossroads: A Philosophical Look at the Politics of Science,” Dorothy Nelkin Lecture Series, Vanderbilt Hall, New York University School of Law, New York, October 24, 2006.