

Unnatural Acts

Technology and the American Landscape

Leo Marx talks with Jeff Stein AIA



Leo Marx is the William R. Kenan Professor of American Cultural History Emeritus in the Program in Science, Technology, and Society at MIT. His work examines the relationship between technology and culture in 19th- and 20th-century America. Considered a founder of the field of American Studies, he is the author of *The Machine in the Garden: Technology and the Pastoral Ideal in America* (1964); *The Pilot and the Passenger: Essays on Literature, Technology, and Culture in America* (1988); and editor, with Merritt Roe Smith, of *Does Technology Drive History?: The Dilemma of Technological Determinism* (1994).

Jeff Stein AIA is head of the School of Architecture and dean of the Boston Architectural College and is the architecture critic for *Banker & Tradesman*.

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Jeff Stein: It seems to me that America and Americans are constantly renewing themselves, not in some spiral that leads them ever upward, but in a pattern that is maybe more akin to a pendulum swing. In your book *The Machine in the Garden* you described that process in terms of the tensions between technology and pastoralism. Is it possible to actually chart it as a swing from technology to pastoralism and back again?

Leo Marx: It would be hard to chart it in any literal, chronological way, but certainly there are many expressions of that swing. The most nearly universal expression of this tension, almost a cliché, is “civilization and nature.” It goes back to the idea of national origins. When I was a kid, everything we learned about national origins could be summed up in one simple sentence: “Columbus discovered America.” The idea was that white Europeans left European civilization, which was built and old, and moved in the direction of nature, which was the North American continent perceived as wilderness — unworked nature.

Jeff Stein: Though that continent presented different kinds of nature. The nature that the first Americans encountered in Virginia was this wonderful climate and abundant pastoral Edenic landscape. A bit different from New England, where the next wave of settlers landed.

Leo Marx: I would take exception to that in one respect. When Europeans first encountered America, they perceived it as wilderness, not as pastoral. I reserve pastoral for a natural landscape that has been worked to some extent, that is not wild.

If you use the idea of mental maps, the mental map of America is tripartite. The Eastern seaboard of this continent was transformed gradually by Europeans accustomed to a built, “civilized” landscape. As they moved across the continent, they kept encountering wilderness and transforming it. The

West was always the wild, the natural landscape. By the time of Jefferson, Virginia was a middle landscape, a compromise between too much civilization and too much nature, between cities and wilderness.

Jeff Stein: That middle landscape is the one in which most Americans are most comfortable now. It turns out not everyone wants to be a farmer; in fact, almost no one does. And not everyone wants to be an urbanite, either, except most of us want to have that experience from time to time. So this vast middle suburban place has flourished, in which there are some remnants of nature, imbued with the technology of civilization and cities.

Leo Marx: I think suburbia is a kind of debased version of the middle landscape. I use the concept of the “pastoral impulse,” the impulse of people within a setting that is over-developed to move out in the direction of the natural, in search of a more salubrious, a more pleasant place. The same impulse that led Europeans to North America also leads people from Manhattan to Westchester.

Jeff Stein: Yet, while we might want to leave Manhattan, we don’t want Manhattan to disappear. We need Manhattan to anchor us, to maintain civilization — to be the place that publishes the books we read when we’re out in Westchester.

Leo Marx: But if you think about Central Park, you realize the converse is true, too. Olmsted said that the way to keep Manhattan from really ruining people’s lives was to make sure that there was a piece of the natural world right in the middle of it. It’s hard to imagine Manhattan without Central Park.

Jeff Stein: You have pointed out that many American writers have taken up the idea of the pastoral impulse, often in the form of stories about encounters with nature that change us.

Leo Marx: Yes. The narrative structure of many classic American novels re-enacts this movement from civilization to nature and back again. That's the structure of *Walden*, *Moby Dick*, *Huckleberry Finn*, Faulkner's *The Bear*, Hemingway's "Big Two-Hearted River." Perhaps the greatest book in American literature about the transformation of nature is Melville's *Moby Dick*. When that book came out, it was so far ahead of its time that almost no one understood it. It took almost a century before people fully understood that it is an enactment of the American encounter with the natural world. Melville took whaling as a model of the world, and suggested that the American enterprise is like the whaling industry, an organized assault on the natural world. In his novel, Americans are moving out across the Pacific, and in an organized, technological way, attacking the largest living creature on the face of the Earth. And the book ends with the destruction of the ship, which is in many ways an embodiment of American power and misguided power. Melville had a very clear sense that this assault on the natural world was an act of madness.

But our concept of the natural world is different from Melville's. I have a piece appearing in the Spring 2008 issue of *Dædalus* called "The Idea of Nature in America," in which I begin by describing the idea of nature as one of the concepts that used to define us. It doesn't anymore.

Jeff Stein: I'm not sure about that. You could make a case for defining 21st-century architecture in terms of its relationship to the natural world. For example, much of America's building history is about taking a stand against the vagaries of nature—whether it's the white Colonial farmhouse set in the field, or cities like Boston that have built on former wetlands. All of which were about tremendous acts of will. And of course now that we've created an architecture based on fossil fuels only to discover that we're at the end of the fossil-fuel era, we are starting to think instead of ways our buildings can be part of the biosphere.

The niche in public discourse that was once occupied by the word "nature" has to a large extent been taken over by the word "environment." That's a very significant change.

Leo Marx

Leo Marx: And yet there is a difference, as evidenced by the fact that the niche in public discourse that was once occupied by the word "nature" has to a large extent been taken over by the word "environment." That's a very significant change. The piece I have just written is about the "end of nature." We had in the 1980s and '90s the beginnings of enormous interest in the end of nature. When we speak of the environment, we are not talking about untouched wildness.

Jeff Stein: You could say that the history of American architectural culture is also a history of an organized assault on the

natural world. And now that our population has grown and the assault has largely been successful, there are very few places left that you might call the natural world. Like Ahab, we're in some trouble.

Leo Marx: Except that architects have been conscious of this and have made an effort to cope with it. I would say that the organicism of Sullivan and Wright was an effort to meet this problem long before now. They understood that there is a relationship between the built and the natural that is inherent in architecture. The whole notion of organic architecture was an effort to resolve this tension. And for a time it worked. With his decorative interests, Sullivan thought he could even adapt a skyscraper to the natural world. We can talk about whether he was misguided or not. Of course, you can't generalize about all architects, but you can find many examples of architects and builders at least trying to address the issue. My friend Tom Hubka wrote a book called *Big House, Little House, Back House, Barn* as an effort to examine the ways that people adapted the New England farmhouse to the conditions of New England.

Jeff Stein: Is there an aspect of the pastoral in that sort of architecture?

Leo Marx: It's a bit of a stretch, but yes, I think so.

Jeff Stein: Of course, one way that the farmhouses adapted to their surroundings and to the natural world was that there weren't too many of them. There was great space between them. At the time when most of those buildings were built, say, the 1800s, there were fewer than two billion people on the planet; now there are seven billion. And now, a little more than half of all the energy used in America is used to heat and light and cool buildings. Every one of these buildings has a little power plant in it, a machine that's burning oil or coal or natural gas, and every one is connected by wires to other machines that are running our electric lights. Those machines are transforming our landscape. Sullivan and Wright may have given a few people a wake-up call and an interesting alternative that allowed them to value the pastoral and our relationship with the Earth in a different way. But it hasn't been sustained. And it does seem that the pendulum architecturally has been swinging toward the machine.

Leo Marx: So, what do you want me to say? Buildings change the world? Of course they do, not only in America but on the face of the globe.

Jeff Stein: You first introduced these ideas about technology and nature, or more specifically, the pastoral, with the publication of *The Machine in the Garden* in 1964—which turned out to be the eve of the "greening of America" revolution, propelled by Charles Reich's 1970 book of that name. What was it that students were revolting against?

Leo Marx: The best way to put that period in context is to go back to that tripartite mental map. Remember, a mental map is not



literal; it's the way people locate themselves in space. They attach particular values to places on that map. The values attached to the easternmost places are values that we can associate with efficiency, wealth, power — or, using shorthand, things we identify with technology. And the values of the far West are the values associated with the freedom to do what you want, even freedom interpreted as license. And in the middle, represented by the pastoral, is the effort to have the best of both worlds. Jefferson wanted good French wines and he hated cities. He wanted to live in the middle landscape. In its dreamiest incarnations — Marie Antoinette dressing her maids up as rustic milkmaids — pastoral becomes fantasy.

The “greening of America” was one of hundreds of moments in American history marked by a yearning to recapture that fantasy, to achieve harmony between the world we’re building and the world we imagine was there in the beginning: nature. Student protesters said, “Make love, not war.” That’s a pastoral motto. It was a reaction that had many political ingredients — civil rights, Vietnam — all wrapped up in the image of greening. And of course, it coincided with much of the early history of the environmental movement — the first Earth Day was in 1970. But the stage had already been set by Hiroshima and Rachel Carson’s *Silent Spring*, which was published in 1962.

Your comments about buildings and their energy consumption allude to a similar historical moment, when many people fear we’ve gone too far — that we’re going to destroy ourselves. It is another version of the melodrama of human self-extinction, which has been with us, certainly, since Hiroshima. So I would turn that prospect back on you and say you’re reflecting the mood of today very well.

Jeff Stein: The irony of the greening of America movement in

the late '60s was that even though it was an idea that many Americans found meaningful, they didn't yet have the technology to do anything about it.

Leo Marx: Well, we didn't have the technologies we have now, perhaps, but we had lots of technologies that could get you out of the city, like the automobile.

Jeff Stein: Yes, but the automobile at that time didn't lead to greening anything.

Leo Marx: I agree. I meant it ironically — it transported you to a greener setting. But of course, suburbia couldn't have existed without the automobile. Suburbia was a partial greening; as we discussed earlier, it is a version of pastoral, even if it's a debased version, and it offered the opportunity to move out of the complex environment into a simpler and more satisfying one.

Jeff Stein: But now it seems that we have the technology to make that work a little better.

Leo Marx: In fact, this happens all the time. At every stage of history, a new technology comes along to facilitate the next step. The problem is that, as we go on, the stakes get higher and higher, and the technologies become more promising — and problematic. The utopian pastoral vision, if you will, is reinforced at the same time that the destructive capacity of the technology is enhanced.

Jeff Stein: You quote Daniel Webster, speaking at the opening of a railroad, “Truly, this is almost a miraculous era. What is before us, no one can say. What is upon us, no one can hardly realize. The progress of the age has almost outstripped human belief. The future is known only to omniscients.”

Leo Marx: I use that to illuminate the doctrine of progress. The progressive world view was probably the dominant secular world view in America at that period, and to some extent still is. The idea was that you looked at history as if it were a record of the improvement that comes from the application of mind to nature. We can make a list of all the ways in which the railroad represented an improvement on earlier modes of transport — it gets you there faster, carries more, and so on. And that’s also a pretty good metaphor for the history of technology. Human beings achieve increasing control over nature to create an ideal way of life, a better way of life. At the entrance to the 1933 Chicago World’s Fair celebrating “A Century of Progress” there was a statue featuring a larger-than-life figure, an embodiment of technological progress, with his arms around a man and a woman, and a motto announcing “Science Discovers, Industry Applies, Man Obeys.”

Jeff Stein: You’ve also quoted D.H. Lawrence, who wrote in 1923, just ten years before the Fair, “The most idealist nations invent the most machines. America teems with mechanical inventions because nobody in America ever wants to do anything. They’re idealists. Let a machine do the thing.” We certainly still have the same fascination with the machine, which seems to coexist with a growing obsession with the natural world, redefined now as you point out, as the environment. There’s a whole genre of work — by novelists, filmmakers, artists, journalists — that focuses on



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that juxtaposition. One example is Rob Perkins, a filmmaker in Cambridge, Massachusetts, who, among other films, has recreated John Muir's walking tour of the southeast.

Leo Marx: Another example is Jonathan Schell's book *The Fate of the Earth*, a vision of the post-nuclear-war world — a subgenre perhaps — that describes what's left when non-human nature constitutes all the life that remains: weeds and insects and bacteria. Of course, in the strict sense of the word, there's hardly any unmodified nature left on this planet. Bill McKibben, in *The End of Nature*, argues persuasively that that's the case, since once the Earth's atmospheric envelope has been saturated with man-made chemicals, the entire planet has been enveloped by human artifacts. In effect, then, there is nothing on this planet that is "natural," which is to say, untouched by the works of man. Nothing.

Jeff Stein: So we are really a transformative species.

Leo Marx: Oh yes. Evolutionary biologists remind us that every organism modifies its environment in some degree. But humans modify it by orders of magnitude greater than that accomplished by any other organism.

Jeff Stein: Are these tensions somehow very American?

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Leo Marx: The discovery of America presented a new, particularly dramatic instance of the opposition between technology and landscape. Of course, the conflict between nature and civilization is not peculiar to America. It was first defined in Biblical times. The most vivid example, in my experience, was the recurrent account — by 19th-century American writers — of the sudden appearance of industrial power, typically represented by a steam locomotive, in the American landscape. As I studied instances of this motif, it became apparent that it was an almost exact reiteration of the symbolic setting of Virgil's *First Eclogue*, with its tripartite division into: a built, or urban, sector, identified with Rome; its opposite, an unruly, inhospitable or wild sector; and third, a harmonious, or pastoral, middle ground, which was a compromise between too much and too little raw nature, too much and too little cultivation. But this has been a recurrent conflict throughout history. And history will continue to provide new, and probably more portentous, instances that will become fodder for future generations of writers. ■



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