

# Q&A with William Browning



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*William Browning, head of Browning Partners and a senior fellow at the Rocky Mountain Institute, has been active in the environmental movement for more than two decades as a leading researcher and writer, and as a consultant on projects ranging from the 2000 Summer Olympics in Sydney, Australia, to LucasFilm’s new Letterman Digital Arts Center at the Presidio in San Francisco, which has received Gold certification under the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED) program. Browning shares his thoughts about where the environmental movement is headed.*

**What are some of the newest green trends that will affect the real estate industry, the country, and the planet?**

I’m particularly excited about and active in the field of biophilia—studying and using the deep-seated human need to be connected to nature. Human genetic memory is conditioned to a specific landscape, the savannah [a grassy plain with scattered trees adjacent to a woodland]—a finding that fits with all the archeological and anthropological research as well.

A savannah is the preferred human ecosystem. Prior to the European colonization of North America, for example, Native Americans managed big chunks of the continent as savannah ecosystems through the use of annual fires. Closed-canopy forests were considered unsafe, as places of fear.

Human beings still react to their landscape, to their habitat, and evaluate it according to its survival value. Shade, shelter, clean water, flowers, and fruits—indicating things to eat—all of these things have survival value. Think about how much money we spend today on buying flowers or maintaining lawns. Look at how real estate prices play out. What’s more expensive—an apartment with a view into Central Park or a view of Lexington Avenue? What do you pay more for in hotels—a city view or a water view?

When people are in an environment that has the savannah elements, they are healthier and happier, and they have a greater sense of well-being. Why not apply these elements to building design to maximize people’s well-being? Research has been done on how green buildings generate better sales, better test scores, and better productivity. While all of that has huge financial implications, it has really just served as a placeholder for the well-being of humans in buildings.

We have gotten very good at techno-fixes for indoor air quality and energy use, but now we really need to focus on the building environment and how it affects the people within it. So, those of us who are working with biophilia are now identifying how we can connect people in a building with nature. We are literally taking the genetic tendency for preferred landscapes and elements from the preferred landscapes and incorporating them into buildings. Biophilia may dramatically change the nature of what we put into a building and how we put it together. That’s the next step in green buildings.

**What does biophilia look like in a workplace?**

Genzyme’s headquarters building [the 12-story, 350,000-square-foot (32,500-sq-m) LEED Platinum-certified Genzyme Center in Cambridge, Massachusetts] has elements of biophilic design as part of its overall green design.

First, daylight is used extensively in the core of the building. (See “Genzyme Raises Bar,” July 2005, page 44.) Second is the use of a water feature in the atrium. People are strongly attracted to clean, clear, running water and the sound of the water. Third is the extensive use of gardens throughout the building, which gives people a direct connection to nature within the building.

Fourth, the building has powerful spatial configurations—known as “prospects”—that give people great views into the central atrium. Fifth, you don’t see everything at once, but you are drawn into it. That is excitement and mystery. Sixth, the building creates a sense of refuge through the use of overhangs. People feel protected and sheltered by the building. Seventh, you can get up on the balcony railing and look down—that’s called peril. The building has a layer of thrill.

Put those elements together and you have a building that keeps people’s interest and elevates their well-being while also providing the company with all the other benefits of green design and technologies.

**Those actually sound like very familiar elements.**

Of course they are. Long before all the biophilia studies started coming out, developers intuitively incorporated many of those elements into their projects. The designers of shopping center malls, for example, created spaces that generate excitement, they put in plants and water features, and they added natural light.

**Green buildings are noted for their reduced energy consumption, but are current green design and technologies doing enough?**

The combination of Energy Star and LEED is creating projects that are averaging 30 percent less energy use than comparable standard buildings. That has a significant financial impact, and it helps with environmental impacts, but ultimately it’s not enough. We have to do dramatically better.

The new trend is buildings as net energy producers. You may have heard of the zero energy movement, but it's really the net energy producers movement.

Bill Sisson, who was director of the Carrier Program Office and is now director, sustainability, of the World Business Council for Sustainable Development's buildings program at United Technologies' Research Center, is looking at what we need to do to impact the global warming trend. To stabilize the carbon dioxide output of U.S. buildings by the year 2050, all new buildings must be 94 percent energy efficient or better. Actually their take is this: we must step over the line and go to zero energy buildings—i.e., buildings that have a no net energy draw [from grids]. First, we make the buildings very efficient, then add renewable energy sources.

**Green infrastructure is a field that has been growing in recent years. What direction should this field take?**

We need to go beyond individual buildings, the neighborhood, even the metropolitan area to include the systems beneath the built environment, like energy. And we need to dramatically rethink how we deal with water.

We treat rainwater as an engineering problem. We try to get rid of it as quickly as possible. We treat it like a waste product. Many cities in the United States, for example, have combined sewer systems that serve both building waste and rainwater. During large storms, the treatment plant gets overloaded and dumps the mixture of sewage and rainwater into natural water systems—rivers, lakes, and oceans.

The solution is to treat rainwater as a precious commodity—as life. Rather than spend billions of dollars to dig up a city and install a second sewer system designated solely for handling rainwater—a stunning misallocation of money—we should be planting street trees, using water-capturing landscape features like

bioswales and even tree wells along sidewalks, insisting on green roofs, and capturing the water for use in mechanical systems like air conditioning and plumbing systems like toilet fixtures.

Buildings should be designed to capture all the rainwater that falls on them throughout the year and to deal with that water like the healthy ecosystem that was on those sites before they were developed. The Bank of America Tower in Manhattan, for example, will capture, store, and use all the rainwater that falls on it to run mechanical systems, flush toilets, and irrigate its one-acre green roof during dry periods.

But, of course, dealing with water goes far beyond individual buildings. Mithun Architects+Designers+Planners [of Seattle, Washington] has done great work with the city of Portland, Oregon, in planning an area called Lloyd Crossing [a 35-block inner-city commercial district] near the Portland Convention Center. One of the things they've done is look at the urban fabric—the public realm, the air, the alleyways, the spaces between the buildings—and identify strategies to redevelop the district so that it has no more rainwater runoff than occurred before European settlement, when the site was primary forest.

**Wetlands have been a popular stormwater management strategy for many green projects.**

That's because we've bought into the big lie about natural wetlands. They are not sponges. Yes, they may help serve as a stormwater and storm surge buffer mechanism, but how much help they really are is uncertain. More important, natural wetlands get their water from underground water recharge. If you dump water and pollutants from the built environment on top of them, you affect the pH and the chemistry. You end up degrading that land, and you negatively affect the native plant and animal species. [Instead,] capture the rainwater in the uplands and recharge the groundwater to restore the capacity of natural wetlands.

Manmade wetlands, on the other hand, can be useful if they are carefully constructed to handle both stormwater retention and the cleansing of pollutants from the water.

**The U.K. got into the green building movement long before the U.S. Is it still cutting-edge?**

The U.K. is doing innovative work on natural ventilation and advanced energy engineering. But there's a lot going on all around the world. Germany is a leader in stormwater management, green roofs, and biological systems. Australia is working with natural and passive ventilation, and it is doing some interesting residential projects. The first was the 2000 Olympic Village. Half the houses had integral photovoltaic systems. The U.S. is making strong advances in integrated design, which addresses several green issues in a single building plan.

**Where are we going from here?**

Net-energy-producer buildings and districts; buildings and districts that generate no more rainwater runoff than the original undeveloped sites; buildings that go beyond air quality and thermal comfort to maximize people's physical and psychological well-being. The questions become: How do spatial considerations influence how we think about and experience life? What makes us feel comforted and nurtured and excited in a place?

Has green come in time? Are we making enough advances and institutionalizing green fast enough to have a real, beneficial, and lasting impact on the environment and on the global climate?

We don't know. We are already seeing the impacts of global warming. What happens on that front really depends on how well we succeed now. We must always have hope, you know, but this is a race and we won't know the outcome for a while. **UL**

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