

Natural Allies: Preservation and Sustainable Development?

Is it feasible to balance historic preservation with sustainable design?

The Monarch Lofts project north of Boston, Massachusetts, converted a 1.3 million-square-foot (120,744-sq-m) mill into a mixed-use development with the largest geothermal system in New England, involving 60 wells in all. The entire geothermal system contributed roughly the same amount of LEED points as the project's bicycle rack.



MOST OF THE HIGH-PROFILE green projects that have received national press involve new construction, yet a growing number of developers, preservationists, and design professionals are demonstrating that historic preservation and sustainable development together are a natural alliance.

Since 2001, more than 40 historic buildings have been certified under the U.S. Green Building Council's Leadership in Energy and Environmental Design new construction (LEED-NC) category. These include the EcoTrust and Armory buildings in Portland, Oregon, and the Cobb Building in Seattle, Washington. "These pioneering projects are models for how developers can effectively combine the rehabilitation of historic buildings with LEED certification," notes Patrice Frey, director of sustainability research for the Washington, D.C.-based National Trust for Historic Preservation.

There is a growing demand for such projects, driven in part by rising energy costs and the increased attraction of city living among a broader consumer base. Consumers should not have to choose between living in a green or a historic building. Developers, however, are finding that complying with both LEED and the historic tax credit requirements can mean navigating two different—and sometimes contradictory—systems that have not yet been fully integrated.

"One of the biggest challenges is overcoming the misperception that you can't be both green and historic," says Frey. "They should not be separate goals. Preservation is not an obstacle to sustainability—in

fact, historic preservation inherently is sustainable development."

Historic tax credits were introduced in 1976 in order to make adaptive use of historic buildings an economically feasible alternative to demolition. Today, these tax credits have become a familiar tool for developers. In 2000, the U.S. Green Building Council created standardized performance criteria to evaluate green buildings. Today, its LEED system has raised awareness and encouraged broader adoption of green building practices. Many cities are even offering incentives such as expedited permitting for LEED-certified projects.

The two systems were developed independently and possess very different structures. LEED is a point-based system, while historic tax credits are guided by the U.S. Secretary of the Interior's Standards. "While they share similar goals, they weigh different methods and outcomes differently," explains Lisa Kersavage, director of advocacy and policy for the Manhattan-based Municipal Art Society. "As a result, they can occasionally come into conflict or produce results that are at odds with each other," she adds.

Awarding LEED points for the demolition of the historic Ward Bakery in Brooklyn, New York, illustrates this disconnect. The historic building, which was eligible for listing on the National Register of Historic Places, sat within the boundaries of the Atlantic Yards project, which is pursuing LEED certification. The demolition of the building contributed to the project's LEED points because "at least 75 percent of the demolition debris is expected to be recycled," noted a press release by the developer.

"When the demolition of a historic building adds LEED points to a project, it's a sign that we need to

work on better integrating historic preservation into sustainable development," points out Kersavage.

"There ought to be a LEED debit system that offsets credits and penalizes developers for decisions that don't contribute to the building or to neighborhood sustainability," says Anca Novacovici, founder of Washington, D.C.-based environmental consulting firm Eco-Coach.

"Green buildings in and of themselves are not sustainable development. They are just one aspect of overall sustainability, but they are being touted as the whole thing," notes Donovan Rypkema, principal of Place Economics based in Washington, D.C. "Historic preservation is an inherent—and overlooked—component of sustainable development."

A common misperception is that historic buildings are energy *inefficient*. Not so, says Keenan Hughes, preservationist with the Municipal Art Society. Hughes cites a recent U.S. Department of Energy study that compared the energy efficiency of commercial buildings built before 1900 with those built in the last decade: "They were pretty much the same," he notes.

Traditional building techniques often incorporated features that today would be considered energy efficient or sustainable. A well-designed historic building considered site, climate, daylighting, and natural ventilation. "When historic features such as awnings, operable shutters, cisterns, and reflective roofing are restored, these preserve historic integrity and contribute to energy savings," says Hughes.

By contrast, many buildings built after World War II were inherently inefficient. They were sited without consideration for natural lighting or ventilation, and lacked proper insulation or thermal mass. Electricity, gas, and oil were inexpensive at the

time, so these buildings relied on mechanical systems for climate control. Most new construction, including green buildings, is not designed to last. In a December 2007 speech in Washington, D.C., Richard Moe, president of the National Trust for Historic Preservation, noted: “It takes approximately 65 years for a green, energy-efficient new office building to recover the energy lost in demolishing an existing building. And let’s face it: most new buildings aren’t designed to last anywhere near 65 years.”

Historic buildings were designed to be durable, and therefore sustainable. A complete and accurate comparison—based on a life cycle analysis—of the energy savings between a historic building and new construction needs to include the embodied energy of the historic building, the direct savings of not having to rebuild periodically—as the new building will have a shorter life cycle—and the indirect savings to the environment of using landfill development

for each reconstruction. Above all, the multiplier effect of the historic building’s longer lifespan on its energy-efficient features needs to be taken into account. However, informed development or policy decisions are difficult to make without accurate energy modeling and assumptions. This is reflected in the tension between historic preservation and sustainability recommendations. For example, original windows are character-defining elements of historic buildings and districts. But there are incentives to replace original historic wood windows with vinyl windows. “Upgrading from single-paned wood windows to double-paned vinyl windows may create an energy savings on paper. But it doesn’t take into consideration the longer life cycle of wood windows over vinyl, or that the manufacturing process for vinyl is much more toxic and energy intensive,” explains Frey. “When all these elements are considered, wood windows win hands down,” she maintains.

Developers and preservationists hope that future versions of LEED will acknowledge the inherent sustainable qualities of historic buildings. “LEED should make a

clearer distinction between existing and historic buildings,” says Novacovici. “They should also take into account building scale when weighting certain credits. Reusing a shell and interior is worth three points—but there should be more points awarded for reusing 400,000 square feet (37,160 sq m) of space versus 40,000 square feet (3,716 sq m) of space,” she maintains.

“Green buildings in and of themselves are not sustainable development,” says Rypkema. Development will not become sustainable if it simply layers green features over the sort of disposable sprawl that is all too common today, he explains. Rypkema urges developers to look beyond the lot line: “Over the long term, what makes a site valuable is its context, its relationship to other buildings,” he emphasizes.

This is particularly critical for historic downtown neighborhoods in places like Providence, Rhode Island; Nantucket, Massachusetts; or San Francisco, California, according to Jack Gold, past president of the Providence Preservation Society. “The historic fabric of the city is part of the draw for residents, businesses, and tourists.” He cites adaptive use projects such as Streuver Brothers Eccles & Rouse’s Dynamo House, and Cornish Associates’ conversion of the Peerless Department Store, both in Providence, with the latter project designed by Providence architects Durkee, Brown, Vivieros & Werenfels—which used historic tax credit financing and also incorporated sustainable features, including a green roof. “These projects incorporated historic preservation and sustainability, and served as catalysts for their neighborhoods,” observes Rypkema.

“Development without historic preservation is not sustainable,” he adds. “I can’t identify a single example of successful downtown revitalization where preservation wasn’t a key component of that strategy.”

Gold, Kersavage, and Rypkema all echo a central theme: it is in the best interest of cities to recognize, preserve, and enhance that historic context in order to attract development that reinforces the qualities that make it attractive and desirable. “People are drawn to a specific neighborhood character,” says Kersavage. “If too much change happens, the neighborhood can lose what made it desirable in the first place.” She notes that it is possible to balance growth and preservation, but steps must be taken early in the development process. “After a rezoning, development pressure often increases. Buildings are increasingly threatened unless they are designated as landmarks,” she adds.

“For the past 60 years, we have ignored 3,000 years of collective wisdom about how to create efficient buildings and how to plan sustainable urban space,” emphasizes Rypkema. “We’re finally realizing that we’re not pleased with the built environment that we’ve developed since the 1940s.”

The National Trust is working with the U.S. Green Building Council to develop preservation metrics for the next version of LEED, to better integrate historic preservation into sustainable development, and to make the two processes less cumbersome and more complementary. Frey notes that sustainability was a central theme of historic preservation long before the current term came into vogue: “Many of the goals of smart growth, new urbanism, and sustainable development can be achieved through historic preservation,” she says. **U**

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The former Peerless Department Store in downtown Providence, Rhode Island, was converted into Peerless Lofts with 22,000 square feet of street-level retail. A seven-story sky-lit atrium provides access to 97 loft-style apartments and a green roof deck is at the top of the building.

