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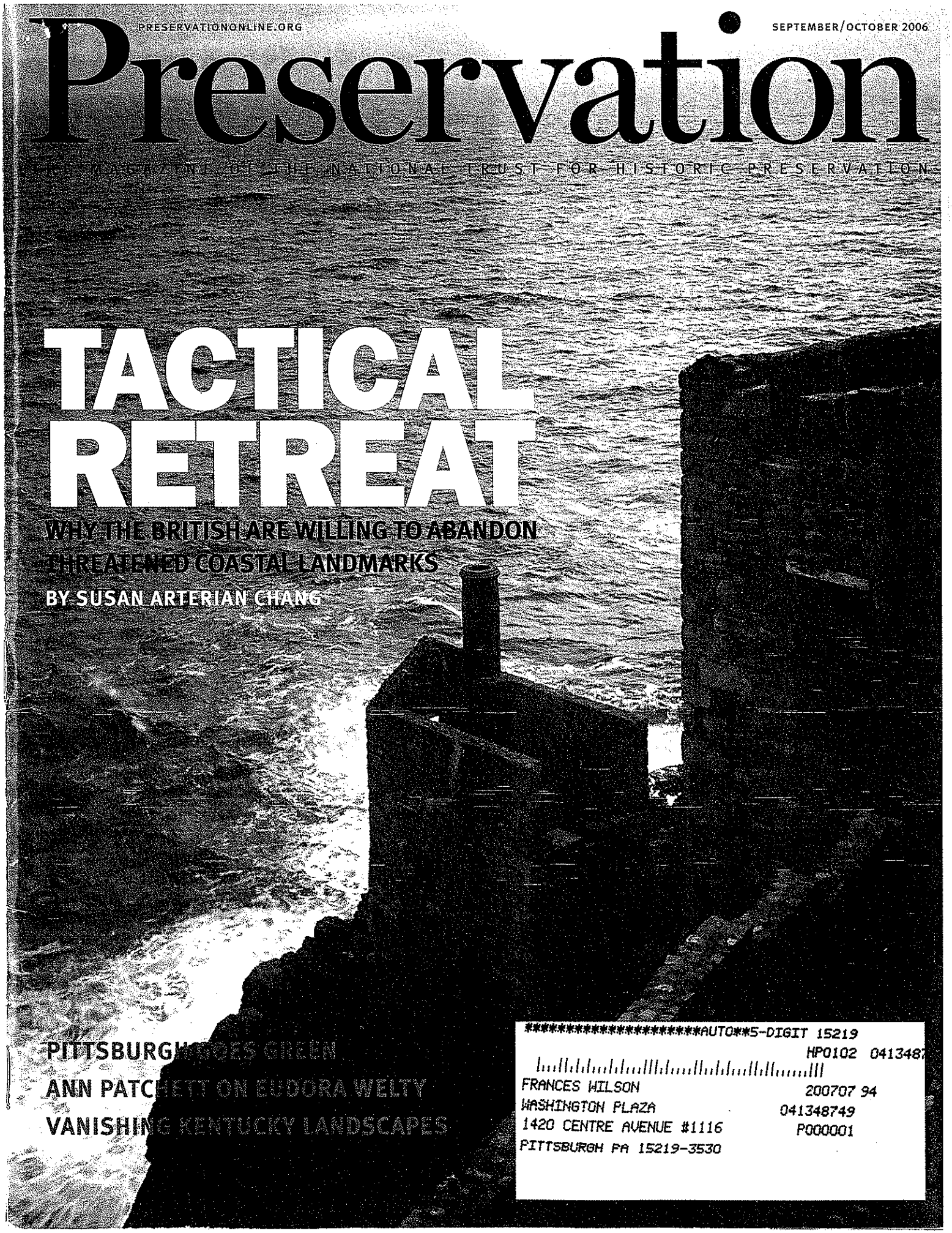


TACTICAL RETREAT

WHY THE BRITISH ARE WILLING TO ABANDON THREATENED COASTAL LANDMARKS

BY SUSAN ARTERIAN CHANG

PITTSBURGH GOES GREEN

ANN PATCHETT ON EUDORA WELTY

VANISHING KENTUCKY LANDSCAPES

going green

By Charles L. Rosenblum *Photography by Carol Highsmith*

Saving old buildings in Pittsburgh the environmentally correct way

In the middle of downtown Pittsburgh—not far from the Point, where the Monongahela and Allegheny rivers meet to form the Ohio—an elegant Greek revival office building rises three stories among much more imposing neighbors. The icy glass crenellations of PPG Industries' corporate headquarters and the exuberant Beaux-Arts high-rises of the Fourth Avenue historic district dwarf the Burke Building of 1836, a rare survivor of Pittsburgh's devastating 1845 fire. Originally housing a law practice and in more recent times a restaurant, the Burke has since 1997 been the headquarters of the Western Pennsylvania Conservancy, owner of Frank Lloyd Wright's famous Fallingwater and conservator of more than 200,000 acres of Pennsylvania green space.

That organization renovated the building in 1996 with an emphasis on both the environment and history. Wool carpets, nontoxic paints, low-energy light fixtures, and recycled office partitions blend harmoniously with such original features as interior shutters, hardwood floors, tin ceilings, and a central open staircase. Ecological and historical aims together "showcase our commitment to resource conservation," said Larry Schweiger, the conservancy's former president, at the building's reopening.

The conservancy is not alone in emphasizing such "green" restoration. In Pittsburgh and the surrounding region, recent projects show how buildings of the past, despite the occasional tension, can play an effective role in the growing interest in green architecture. It is also known as "sustainable" architecture, which was popularized as a concept in response to a 1987 United Nations commission on environmental degradation. Often loosely defined, "sustainability" refers to the desire to maintain resources in perpetuity, and "green" is an equally loose term meaning environmentally conscientious. Although emphasis on harmony with nature can be found in construction throughout the centuries, the current green architecture movement is rooted in the environmentalism of the 1960s and '70s. Now experiencing a resurgence that began in the late 1990s, green architecture seeks to lower energy consumption, conserve natural resources, and reduce pollution.

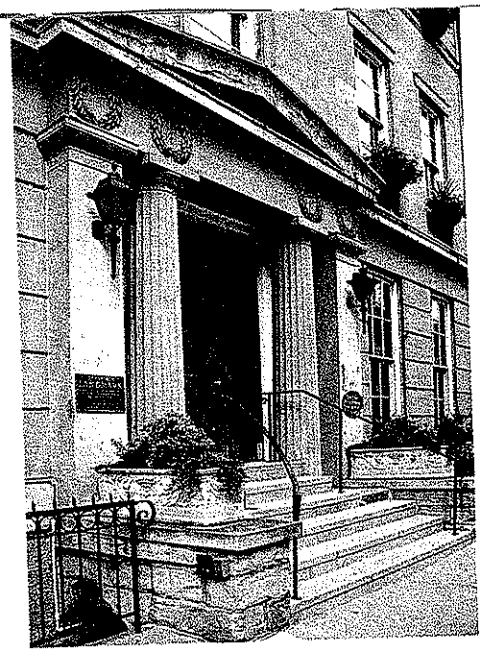
"The very act of reusing a building is green," says Ellis Schmidlapp, principal of Landmarks Design Associates of Pittsburgh and architect for the Burke Building renovation. Demolishing a building in one location only means dumping it in a landfill somewhere else, which in America amounts to an astonishing 140 million tons of waste each year. Historic buildings contain materials intended for very long life—heavy masonry, solid wood, brass hardware and fixtures—and typically unavailable or unaffordable now. So trash-

Expansion of the Children's Museum of Pittsburgh linked two historic structures—one is the former North Side post office shown at left— via the new and contrasting building shown at right. The project employed a long list of "green" architectural methods.

ing them is especially profligate.

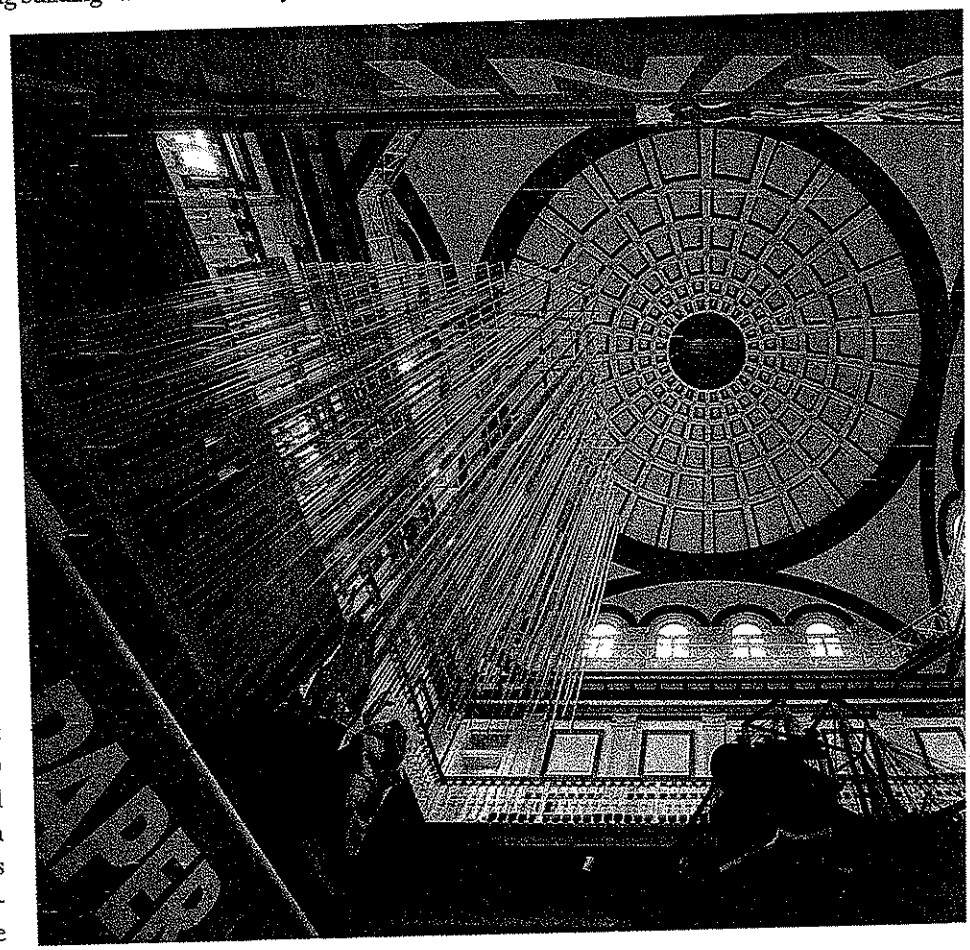
The concept of "embodied energy"—the energy required to produce and use materials—further underscores preservation's ecological advantages. Laura Nettleton explored this phenomenon as a project architect with the firm Perkins Eastman on the Felician Sisters Convent in Coraopolis, 10 miles down the Ohio from Pittsburgh's Point. She worked with green-minded contractor Ernie Sota to renovate this red-brick Gothic revival structure from 1932, which includes a motherhouse, a chapel, and a small coed high school. The sisters wanted a renovation that suited their aging nuns and their Franciscan values. "One of those is called 'care for creation,'" Sister Mary Christopher Moore told the *Pittsburgh Post-Gazette*. So in a project that uses photovoltaic panels, improved wall insulation, and a stormwater collection system that irrigates outdoor plants, concerns about embodied energy also played a prominent role. Nettleton calculated that the embodied energy of the existing building "was the equivalent of five gallons of gasoline per square foot. Or 15 years' worth of energy use." Another design-and-construction team might have sent this considerable resource to the landfill at an additional cost of $800,000 in labor and transportation. With each existing building representing savings of this magnitude, more and more architects point to embodied energy as a selling point for green building.

Organizations drawn to preservation by such ecological and financial savings invariably learn additional lessons about the benefits of historic buildings and open space. The Pittsburgh Parks Conservancy is working with the city on an ambitious 20-year, $100 million plan to restore Pittsburgh's four major historic parks—Schenley, Frick, Highland, and Riverview. Six years ago the organization started to design the Schenley Park Visitor Center in a decaying building that had been closed for about 10 years. The compact, one-story 1910 pavilion by architects Rutan and Russell had served as a picnic building, a garden center, and a nature museum. It has banks of windows, a pitched roof, eyebrow dormers, and deep overhangs. Schmidlapp, the architect in this renovation as well, emphasizes these elements' functionality. Extensive windows help light the space, for example, but overhangs block the sun in summer while admitting it in winter. As a result, the space is always well lit but not overheated. Also, dormer windows in a steep roof abet natural ventilation. "People have forgotten these were effective," he says. Traits of many historic buildings—natural ventilation, solar orientation, or simple durability—though long ignored by modern architects, are now promoted as essential to green design.



The city's oldest structure, the Burke Building, was restored to historical and environmental standards. Below: beneath the dome of the Children's Museum

The inherent environmental advantages of old buildings become a rediscovered benefit. For the sustainability-inclined architect, though, historic preservation offers a potential head start down the green road. In a city like Pittsburgh, with its profusion of underused warehouses and abandoned churches, opportunities for additional green preservation abound. They reinforce a national trend toward renovating increasing

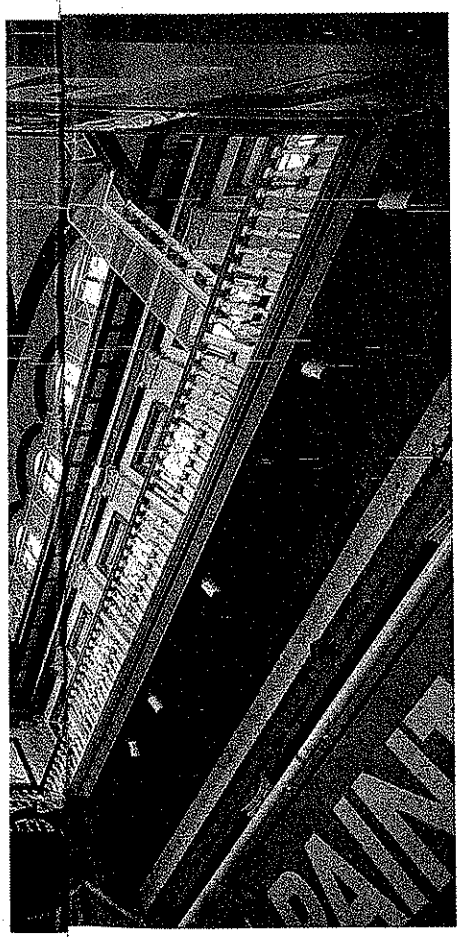


numbers of landmark structures—such as Frank Lloyd Wright's Unity Temple in Oak Park, Ill., and H.H. Richardson's Trinity Church in Boston—to high standards of both historical accuracy and sustainability.

Original features, such as deep overhangs and extensive windows, aided the green transformation of a decaying landmark into the Schenley Park Visitor Center.

HISTORIC PRESERVATION AND GREEN DESIGN MAY have a largely symbiotic relationship, but the two can conflict. Writer Nancy Solomon summarized the difficulty in the July 2003 *Architectural Record:* "For decades, there has been an underlying tension between historic preservation and environmental design: the former seeking to protect our history and culture, typically by applying traditional methods of construction and conservation to familiar buildings from the past; the latter trying to ... promote alternative sources of energy, often through the application of innovative technologies and construction methods to novel forms."

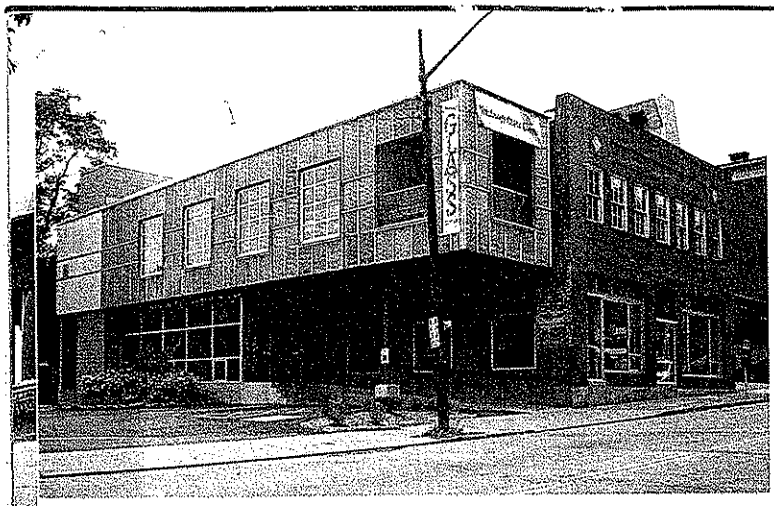
Windows provide the perfect example. In renovating Pittsburgh's Homewood branch of the Carnegie Library, a striking two-story Tudor-Gothic revival structure completed by architects Alden and Harlow in 1910, architect Rob Pfaffmann grappled with choices for window restoration. Removing an intrusive mezzanine added in the 1970s gave renewed prominence to the windows in the library's reading room but also revealed their need for renovation. Many were leaky, and some were crumbling. Aluminum replacements, touted by manufacturers as able to reduce monthly energy bills, were proposed.

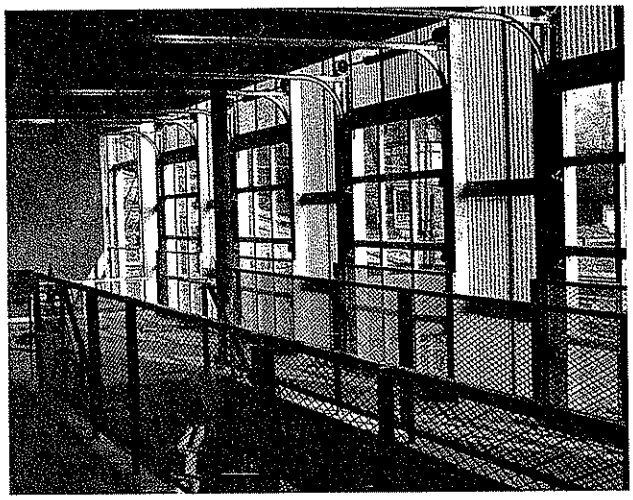


Architect Jean Carroon cautions against such anachronisms. Carroon says she has been disturbed by the lack of harmony between preservation and green architecture. A member of Goody Clancy architects in Boston and a national expert on green preservation, she has led the firm's preservation practice on such projects as the Richardson Trinity Church. She warns that "20-year insulated windows are not the greenest thing to do. We need to think more broadly than that." Hewing as close as possible to the original materials maintains visual and cultural continuity, but the environmental benefits are also considerable. "The infiltration around the edges of your window," Pfaffmann says, "is 90 percent of your heat loss. Our biggest bang for the buck was just to weatherstrip them." This approach, plus as-needed repairs to the wood, saved money and eliminated the need for high-tech replacement parts.

Other restoration techniques raise points of contention. For example, some green designs have adopted the practice of insulating the interior of thick masonry walls. Recent research, though, demonstrates that such overinsulation can inhibit the walls' ability to dry properly when wet, hastening their deterioration. Such debates remind Angelique Bamberg, historic preservation planner for the city of Pittsburgh, of energy-saving practices of the 1970s. During the first energy crisis, dropped ceilings and bricked-in windows—inauthentic and of questionable efficiency—were the order of the day. "Let's not again brutalize these buildings in the name of energy savings. We're in a very different moment now."

One of the most prominent debates in sustainable design's relationship to historic preservation is the LEED program. An acronym for Leadership in Energy and Environmental Design, LEED is a rating system for projects that was developed by the U.S. Green Building Council (USGBC), a nonprofit consortium of manufacturers, researchers, and civic groups. The program was launched in March 2000 to elevate standards in sustainable building design and provide assessment criteria in numerous categories—recyclable materials, energy use, waste disposal during and after construction, stormwater management, mechanical systems, and many others. Building owners apply for LEED certification, through which their architects earn points for various features, culminating in ratings of "certified," "silver," "gold," or "platinum." Under LEED, buildings can gain recognition for precisely the sorts of achievements in





Clockwise from top left: A boxlike addition clad in recycled corrugated glass marks the Pittsburgh Glass Center, which reuses a 1920s car dealership. The building is heated in part by recovering waste heat from glass processing. Lights for the gallery space adjust to its occupancy level. Windows that operate like garage doors air the space in warm weather.

which preserved historic buildings excel.

"I appreciate the LEED people," says Kevin Gannon, a principal with DGGP Architecture. "They need to have a fair standard. But standardized testing won't work for every condition." In designing the Pittsburgh Glass Center, Gannon began with a sympathetic client who embraced the values of the rating system and was able to score a preliminary rating of gold, thanks in part to rehabilitating an older building. The Glass Center occupies a former car dealership from the 1920s that presses up to the sidewalk line amid a mixture of storefronts, houses, and parking lots on busy Penn Avenue, the border of Pittsburgh's Bloomfield and Garfield neighborhoods. The project is adaptive use, not pure preservation. One of its most distinctive features is a long box sheathed in salvaged corrugated glass that projects from one side of the second floor. Operable garage-door-type windows give the upstairs space an almost outdoor feel in good weather, especially welcome amid the heat from glass-making.

Gannon hoped to get more LEED credits for that and other innovative features, including a mechanical system that captures waste heat from the furnaces. "It would be nice if LEED could recognize the uniqueness of certain things," he says, and others agree. Architect Rob Pfaffmann points out that the program was originally developed for new commercial office buildings. "The Building Council was going for the low-hanging fruit, for big buildings and consumers of energy," he says. Old buildings, with numerous unknown existing conditions, tend to be much more complex.

As executive director of the Green Building Alliance of Pittsburgh, Rebecca Flora has helped gain LEED certification for many buildings here. One of the nation's first such certified professionals, she is on the board of USGBC, in which position she advocates updating the LEED code and making it more preservation-friendly. "Some of these [criticisms] are based on, for the first couple of years, using a system that was still in development," she says. Improvements are occurring—updates like

PITTSBURGH GLASS CENTER (EXCEPT FOR TOP LEFT)

LEED-EB for existing buildings, one of a growing number of specialized program divisions. "People just aren't necessarily aware of them yet." Topics such as life-cycle cost analysis and more elaborate evaluations for existing buildings are part of a new rating system being developed.

PITTSBURGH HAS MORE LEED-RATED BUILDINGS THAN ANY other city in the country, says the Green Building Alliance, which tries to maintain the distinction. Underlying that feat is support from the Heinz Foundation, where Teresa Heinz Kerry has insisted that all of the projects it aids follow green principles. Meanwhile, groups like Sustainable Pittsburgh promote green values in local and regional planning, and several neighborhood organizations embrace similar values in community redevelopment. Pittsburgh also boasts Carnegie Mellon University's Center for Building Performance and Diagnostics, recognized worldwide for its studies of mechanical systems and related areas of air flow, energy usage, and daylighting, all crucial components of sustainable design.

On the preservation side, the Pittsburgh History and Landmarks Foundation (PHLF) is by far the leading local force, and has been for decades. It earned an international reputation for its commonsense activism against the aggressive urban renewal projects of the 1960s. Its successful renovation of the moribund Pittsburgh and Lake Erie Railroad buildings into Station Square in the 1970s was a case study in creative preservation and the highly effective use of development funds. Although the complex was sold in the 1990s, the organization is as active as ever, promoting sensitive development along with its extensive programs of education, architectural surveys, grants, loans, and publications. Other local organizations, including Preservation Pittsburgh and the Young Preservationists Association, work in support of PHLF and sometimes in counterpoint to it.

Jane Werner, executive director of the Children's Museum of Pittsburgh, oversaw a remarkable expansion of her organization's facilities, synthesizing adaptive use, modern design, and green building. To further an institution that was outgrowing its home in a gemlike Renaissance revival dome—the former post office on Pittsburgh's North Side—Werner drew in people and even an extra building from next door. The Buhl Planetarium, a quirky and endearing Machine Age temple of astronomy, had sat unused and decaying for some 10 years. "We recognized that we lived next to this extraordinary building," she commented, "but it was just going to fall apart if nobody used it."

She organized a national design competition informed by a series of local charrettes, then directed participants to embrace green principles and reuse the old planetarium. As a result, the Buhl is now revived, with both museum exhibits and office space for affiliated organizations. A new three-story wing by Koning Eizenberg Architecture joins the old post office to the Buhl with refreshingly humane modernism. The new-old complex has won an American Institute of Architects Honor Award and a LEED silver rating, the largest museum to do so. A long roster of features—including recycled structural steel, low-energy mechanical systems, organic flooring materials, and nonvolatile paints, as well as recycling in its ongoing operations—contributed to the rating.

Werner sees sustainable architecture and adaptive use as morally necessary. "Both are about the kind of world we will leave to our children," she says. Instilling these priorities as values, not viewing them as just bargains or fads, will be crucial if the future is to be as ecologically sound as much of the past is turning out to be.

Preservation and green architecture will play an important role at the National Trust's annual conference that starts in late October, particularly at a forum called the National Summit on Greening of Historic Properties, which will focus on the future of this complex but rich marriage of ambitions. Led by PHLF and the Green Building Alliance, the summit is intended to reinforce areas of mutual interest and to resolve "issues that are somewhat frustrating," according to Ellis Schmidlapp, one of the organizers. Rebecca Flora anticipates "a daylong summit roundtable with solutions-oriented discussion ... followed by a town meeting" to present guidelines and case studies. The forum should inspire dialogue between preservationists and greens, two camps that have a few members who have been "fanatical, but not willing to debate," says Jean Carroon. "I'd love to see the Trust put both sides together."

Charles L. Rosenblum is a Pittsburgh writer who specializes in architecture and planning.