American Planning Association
Making Great Communities Happen

September/October 2012

PAS MEMO

Historic Preservation: Expanding the Planner's Toolbox

By Patrice Frey and Rachel Bowdon

The connections among historic preservation, economic development, and environmental performance are well documented and increasingly persuasive to policy makers. These benefits for planet, people, and prosperity — the three-legged stool of sustainability — support a range of time-tested planning tools that are available to help communities conserve and leverage their historic places. Yet there is an important class of valuable buildings that is often overlooked by such tools: character-rich older buildings that may not meet conventional historic preservation designation guidelines but contribute substantially to vibrant and livable communities. To preserve these buildings, along with the wealth of benefits they provide, other tools are needed.

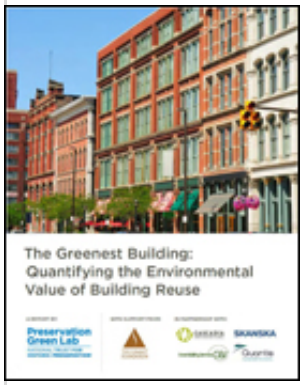
This *PAS Memo* explores a number of existing tools and strategies under development that enable communities to not only protect historic resources but also to harness and leverage the value of older buildings more generally.

Planet: The Environmental Value of Historic Preservation

Buildings are resource-intensive goods, both in their construction and in their operation. The green building community has made much progress in the last decade drawing attention to the significant amount of energy buildings use in their operations — buildings are responsible for fully 72 percent of electricity use and produce nearly 40 percent of carbon dioxide emissions in the United States (Department of Energy 2009). While these operational impacts are well documented, the environmental effects associated with the building construction process itself have not been well understood.

In recent years, a handful of studies — largely from international sources—have sought to quantify the environmental impacts associated with new construction. For example, one study, from the U.K.'s Empty Homes Agency, ***New Tricks with Old Bricks***, found that it would take approximately 35 to 50 years for a new, green home to compensate through efficient operations for the carbon impacts that occurred as a result of its construction (Empty Homes Agency 2008). Researchers at the University of British Columbia undertook a comparable analysis on a university building and determined that a replacement building would require approximately 37 years to make up for its initial environmental impact (Busby, Perkins + Will 2006).

Building on this early research, in 2012 the Preservation Green Lab, a project of the National Trust for Historic Preservation, released a comprehensive study examining the environmental impacts of new construction and building reuse. Assessing seven different building types in four climate zones, ***The Greenest Building: Quantifying the Environmental Value of Building Reuse*** found that in almost every case, the reuse of existing buildings results in fewer environmental impacts over their life spans compared with demolition and new construction (Preservation Green Lab 2011). Even when comparing building rehabilitation with new, more energy-efficient construction, the value of building reuse still provides near-term opportunities to reduce negative impacts, such as those that contribute to climate change. The study finds that it can take between 10 and 80 years for a new, energy-efficient building to compensate for the environmental impacts that occur during construction. *The Greenest Building* concludes that most buildings in most climate zones will take 20 to 30 years to make up for their initial carbon impacts.



Quantifying the environmental value of building reuse. Photo courtesy National Trust for Historic Preservation.

NTHP's Green Lab

The Seattle-based **Preservation Green Lab** is a project of the National Trust for Historic Preservation. Launched in 2009, the Green Lab advances research that explores the value that older buildings bring to their communities and pioneers policy solutions that make it easier to reuse and green older and historic buildings. The Green Lab seeks to minimize carbon impacts from the built environment through direct emissions reductions from building retrofits and reuse, and to conserve character-rich and human-scale communities that attract people to more sustainable, urban living patterns.

The environmental advantages of older buildings are not limited to reuse. Contrary to the widespread perception that historic buildings are poor energy performers, national survey data from the Department of Energy finds that commercial buildings constructed before 1920 actually use less energy per square foot than those built in any decade after, except for those constructed after 2000 (U.S. Energy Information Administration 2003). Performance advantages in these older buildings often can be attributed to difference in construction methods. For example, many historic buildings have thick walls with high degrees of thermal massing that reduces the amount of energy needed to heat and cool buildings, as well as operable windows and other passive sources for air flow that reduce the need for mechanical ventilation.

Of course not all older buildings perform better than their newer counterparts, and even in instances when they do, there are important reasons to integrate retrofit strategies to ensure that these buildings maximize potential energy savings. From retrofits of the **Empire State Building** and the **U.S. Treasury Building** to more humble examples, there are more and more older buildings that serve as valuable case studies demonstrating myriad energy improvement strategies that can be employed in these structures. The **New Buildings Institute**, for example, offers a range of case studies that explore deep energy savings in existing buildings, many of which are designated as historically significant.

The Joseph Vance Building

In 2009, the **Joseph Vance Building**, located in Seattle, earned LEED for Existing Buildings (EB) Gold Certification for groundbreaking retrofit strategies that went beyond the building envelope and systems to include operations and maintenance. Strategic investments included roof replacement with a LEED-approved, light-colored membrane; lighting retrofit; water fixture replacement; the installation of bike storage and shower facilities; and a green tenant improvement and operations manual to guide tenant behavior. This resulted in a 24 percent drop in energy usage over the baseline and an Energy rating of 98, placing it in the top two percent of office buildings nationally. The owner, the Rose Smart Investment Fund, believes the success of the retrofit is self-evident: since completion of the renovation, occupancy increased from 68 percent to 96 percent.

DOE data suggest, however, that unlike older commercial buildings, older homes typically perform more poorly than those of more recent vintage, likely owing to the lack of insulation used in older residences and the integration of other energy-saving features in houses of more recent vintage (U.S. Energy Information Administration 2009). Fortunately, there are ample examples of historic home retrofits demonstrating that significant energy improvements can be attained — and in ways that preserve historically significant features. The Grocoff rehabilitation of a Michigan Victorian home and the Ross House retrofit in Glencoe, Illinois, offer two outstanding examples of sensitive historic rehabilitation projects that have achieved substantial energy performance improvements.

Sensitive Rehabilitation Projects

The Grocoff Rehabilitation: Five years after purchasing their 1901 Victorian home in Ann Arbor, Michigan, Matt and Kelly Grocoff proved that it is possible to transform a historic home into a cutting-edge net-zero home. From less-expensive improvements, such as the installation of low-flow shower heads, to bigger-ticket items, including the installation of photovoltaic panels, the Grocoffs have dramatically lowered their energy usage while still maintaining the historic integrity of their home. They will also save money — they estimate that their initial investments will save them approximately $190,000 on energy bills over the next 25 years.

The Ross House: Built by Frank Lloyd Wright in 1915 as a "spec" house for his attorney, the Ross House in Glencoe, Illinois, was sitting vacant and in bad condition when John Eifler, head of Eifler and Associates, bought it in 2009. Eifler's intent was not only to rehabilitate the house but to make it better by adding sustainable features that would make it less expensive to maintain. Updates included geothermal heating and cooling, extensive wall and roof insulation, graywater recycling in bathrooms, and solar photovoltaic panels on the garage roof. Eifler expects that

these changes will earn the home LEED Silver certification from the U.S. Green Building Council.

Beyond the inherent value of reuse and improvements in energy savings, reuse of existing buildings contributes to other environmental goals as well. Older buildings were constructed before the advent or widespread use of automobiles, and thus tend to have significant location advantages. Historic buildings are typically located in mixed use neighborhoods that are dense and walkable, and often offer access to mass transit — all features that are widely understood to reduce vehicle miles traveled by those who live, work, and play in a neighborhood. Revitalization of existing neighborhoods also serves to lower demand for suburban-style housing and commercial development on the urban fringe.

Given the value of reuse over new construction, the retrofit potential of older buildings, and the location advantage of many of these places, it's clear that reusing historic buildings, as well as older buildings without historic designation, can offer a number of environmental benefits. While historic buildings enjoy a number of protections, it is necessary to consider tools that foster the retention of all older buildings.

People and Prosperity: The Social, Cultural, and Economic Value of Older Buildings

The protection of historically significant resources offers significant cultural and social value to communities, and it's these benefits that traditionally have been the foundation of historic preservation efforts. Conservation of historic buildings helps to retain a tangible connection to generations that came before and serves to preserve buildings of particular architectural and artistic merit. Importantly, preservation of buildings also helps communities retain a distinct sense of identity, ultimately creating an authentic sense of "place" that is difficult, if not impossible, to replicate with new construction. As with the environmental benefits of preservation, the place-making benefits of building conservation are not limited to those that are designated as historically significant, and often extend to older character-rich buildings as well.

There is increasing evidence that such distinct places play an important role in the economic competitiveness of cities. Key demographics that are especially important to a city's economic success — including well-educated young workers and entrepreneurs — are increasingly drawn to distinctive, vibrant, and walkable neighborhoods, as has been discussed at length by Richard Florida and other urban thought leaders who stress the connection between a rich built environment and a city's ability to attract talented people. Older character and historic buildings are essential to this urban place making, offering unique spaces that serve as the ideal home for everything from small locally owned businesses to larger-scale creative enterprises.

Of late, a number of high-profile corporations are making the move to older neighborhoods and buildings. For example, Google and Zappos — which depend greatly on their ability to attract and retain creative talent — are choosing more urban and accessible places over traditional office park settings, and they are also locating in older and historic buildings rather than constructing new Class A office space. Google recently opened a new office in urban Pittsburgh in a 100-year-old Nabisco factory that creates a vibrant open work space and connects to Pittsburgh's gritty rust-belt past. Zappos is in the process of moving its operations from a suburban office park to a revitalizing downtown Las Vegas, which has suffered from significant disinvestment over time. The shoe giant is creatively reusing existing buildings to making sure that employees can be closer to restaurants, cafes, bars, and other amenities offered by urban environments.

Google's new office in a 100-year-old Nabisco factory in Pittsburgh. Photo by harry_nl/Flickr (CC 2.0 Generic).

And there are plenty of smaller-scale innovative firms that are drawn to older neighborhoods as well. As real estate developer and founding director of the Preservation Green Lab Liz Dunn has noted, in many cities, the "new economy" is happening in older neighborhoods, where tech startups, design firms, and co-working spaces are choosing to locate (Levitt 2011). Class A office towers, divorced from a rich and diverse urban environment, don't hold much appeal for many young workers, and employers are responding accordingly.

Preservation of existing buildings offers other more conventional economic advantages as well. According to Heidi Garrett-Peltier, an economist with the Political Economy Research Institute at the University of Massachusetts–Amherst, repairing existing residential buildings produces roughly 50 percent more jobs than constructing anew. This is due to the labor-intensive nature of rehabs — manual labor accounts for 41 percent of the cost of rehabbing a building but only about 28 percent of the cost of new construction (Garrett-Peltier 2011).

In addition, reusing and retrofitting older buildings stimulates the local economy, both because the labor tends to be hired locally and materials for historic rehabilitations are often purchased locally. As nationally known economist Donovan Rypkema explained in his speech at the Missouri Statewide Preservation Conference in 2008, hiring labor and purchasing materials locally results in a positive ripple effect through entire local economies: "This labor intensity affects a local economy on two levels. First, we buy an HVAC from Ohio and lumber from Georgia, but we buy the services of the plumber, the electrician, and the carpenter from across the street. Further, once we buy and hang the sheet rock, the sheet rock doesn't spend any more money. But the plumber gets a haircut on the way home, buys groceries, and joins the YMCA — each recirculating that paycheck within the community" (Rypkema 2008).

The Planner's Preservation Toolbox: Conventional Strategies

A variety of tools are available to help planners advance preservation goals, many of them decades-old strategies that have demonstrated significant success over time. This section highlights several traditional preservation tools, and offers examples of some of the strongest practices in the country.

Preservation Ordinances

Enacted in over 2,300 communities across the U.S., preservation ordinances are the most popular and powerful legislative tool used to protect individual buildings and districts. While no two preservation ordinances are alike, they all share the same basic objective of using legal authority to identify, evaluate, and protect historically significant resources from inappropriate alterations or demolition. Preservation ordinances not only protect the design features of landmarks or entire historic districts, but also typically regulate the design of new construction within historic areas.

A preservation ordinance must contain several components to be legally viable. First, it must clearly state a public purpose that goes beyond aesthetic regulation and includes other community goals such as economic development or neighborhood revitalization. Second, a historic preservation review board must clearly define the criteria in the ordinance by which a historic landmark or district can be identified, evaluated, and protected. Appropriate criteria may include such factors as a building's role in national, state, or local history; its association with prominent historical figures; or its cultural significance. The ordinance also must explain what types of changes are subject to review — for example, demolitions, building or landscape alterations, or new construction in historic districts.

Historic preservation review boards usually measure criteria against standards and guidelines. The most common set of applied guidelines for historic district review are ***The Secretary of the Interior's Standards for the Treatment of Historic Properties***'rehabilitation standards established by the National Park Service, which emphasize that a property's significant features should be retained. The standards also recognize the importance of encouraging efficient, contemporary uses of property. Often, local design guidelines for historic buildings and historic districts are either directly modeled after the Secretary of the Interior's standards for rehabilitation or borrow heavily from their foundation.

While most ordinances are derived from the Interior Secretary's standards, their level of success is based on criteria that emphasize a community's own unique needs. What works in Savannah, Georgia, will not work in Chicago, and vice versa. In addition, the robustness of an ordinance is determined by how well it works within the municipal regulatory structure it resides within. If an ordinance is not strong or dynamic enough to withstand ever-changing governmental bodies and historic review commissions, it will not protect the historic resources it was created to serve.

Historic Landmarks and Districts

Preservation ordinances enable communities to protect both districts and individual buildings through local landmark designation. Contrary to popular understanding, local designation of local landmarks or districts offers a higher level of protection than state or national designations, and thus is crucial for effectively protecting historic resources. Individually landmarked buildings often garner the most attention due to their often iconic quality — for example, being the birthplace of a president or designed by a famous architect — but the majority of historic resources are designated by way of historic district designation.

The first local historic district dates back to 1931 in Charleston, South Carolina. It predated the first federally designated district by more than 30 years and was an important step in ensuring that there were enforceable protections against inappropriate alterations or demolition of "contributing" properties within entire neighborhoods or areas considered historically significant. The Charleston historic district introduced the concept of the *tout ensemble* — the idea that the character of an area is derived from its entirety, or the sum of its parts, rather than from the character of individual buildings — a profound departure from the "house museum" model that had until up to that point dominated preservation.

The benefits of historic districts are numerous. They have been effective at reducing demolitions among the nation's oldest building stock and have been shown to improve property values by stabilizing and enhancing a neighborhood's character. However, historic districts are not without controversy. Some local property owners may not appreciate having to abide by historic review board rules and others complain about the high costs often associated with maintaining a historic home. Because of their controversial nature, districts' design and rehabilitation guidelines must be clearly written, effectively communicated, and uniformly administered to ultimately be successful.

City preservation efforts must also anticipate threats to *potential* historic districts before they arise. For example, **San Francisco** focuses its historic resource surveys on neighborhoods that are undergoing long-range planning efforts. This proactive, targeted method ensures that historic resources most at risk are identified and protected as the city evolves.

Alamo Square Historic District, San Francisco. Photo by wallyg/Flickr (CC 2.0 Generic).

Transfer of Development Rights

Transfer of development rights (TDR) allows landowners to sever development rights from properties in government-designated low-density areas, such as historic districts, and sell them to purchasers that are allowed to build a higher-density development elsewhere. By creating a monetary value for the unused capacity that would otherwise be lost when the owner maintains the historic building, TDR encourages the preservation of existing buildings instead of demolition or renovations that would diminish the integrity of the property's value.

However, TDR still requires appropriate zoning requirements. A city must be willing to set up a TDR bank at the same time that it creates market demand by upzoning (increasing the floor area ratio) specific receiving areas conditional on buying TDRs. Timing is also an issue — if a developer is looking to sell her development rights, but has no purchasers, the transfer will not take place.

Challenges aside, TDR programs can be effective policy levers and can provide valuable incentives for the reuse of existing buildings if developed properly. Further, they allow local governments to avoid the conflict that accompanies land-use regulation by compensating landowners for restrictions on the development potential of their properties. Many U.S. cities, including **San Francisco**, **Seattle**, **Denver**, and **New York** have successfully implemented urban TDR programs. While these cities use differing mechanisms and varying levels of transfer capacities (e.g., building-specific versus zone-specific transfers), they are each effective at encouraging retention of historic buildings and structures.

Preservation Incentives

Preservation-focused tax incentive programs exist at the federal and state levels and are essential to the success of building reuse. In general, they counter private and public land-use policies favoring demolition and new construction while providing financial benefits to building owners who might otherwise feel burdened by building reuse projects.

At the federal level, the historic rehabilitation tax credit is the nation's largest incentive, promoting urban and rural revitalization through private investment in reusing historic buildings. The credit allows the owner of a certified historic structure to receive a federal income-tax credit equal to 20 percent of the amount spent on qualified rehabilitation costs. The Creating American Prosperity through Preservation Act (introduced in the Senate in February 2012 by Sen. Benjamin Cardin of Maryland) would amend the historic tax credit to make use of the credit easier and provide an added financial incentive to rehabilitation projects that meet certain energy-efficiency requirements.

A 10 percent credit for older, nonhistoric, nonresidential buildings is also available, but is less frequently used than the 20 percent credit. Substantial technical barriers exist to using this credit, and more analysis is needed to understand how it can be made more user friendly; in some instances, this credit may well tip the balance in favor of building reuse over demolition and new construction. For example, this credit has made the rehabilitation of former factories a much more attractive and financially feasible option for developers who would have otherwise found the barriers to reuse too great because of the strict regulatory requirements and uncertain cleanup costs often associated with former industrial sites.

More than half the states in the country have also enacted laws that afford tax relief to owners of historic buildings, many of which are modeled after the federal rehabilitation tax credit. When state tax credits are used in addition to the federal tax credit, the credit of a project can add up to as much as 30 percent. Some additional state tax incentives include income tax deductions, a credit or abatement for rehabilitation, sales tax relief, and tax levies. At the local level, many municipalities will often discount the local property tax or enforce a freeze on the current taxable value of the building or property for a designated number of years.

Whether federal, state, and local tax incentives are used independently or jointly, they are an outstanding means of leveraging private investment for adaptive reuse and bridging the financial gap on rehabilitation projects.

Expanding the Planner's Toolbox: Strategies for Promoting Older Building Conservation

Conventional strategies for historic resource conservation are of enormous value in protecting historically significant buildings, and, in the case of districts, other structures that contribute to the character and quality of a neighborhood. Yet such strategies were not designed to encourage the retention of and reinvestment in other quality older buildings that are not designated "historic." In recent years, a handful of newer planning tools have been developed that expressly help to protect such places.

Neighborhood Conservation Districts

Neighborhood conservation districts (NCDs) are a comparatively newer tool used to promote compatible development in established neighborhoods that are worthy of some level of protection but are not appropriate for consideration as historic districts because they lack qualifying historic structures or public support. Conservation districts take the form of either overlays or special planning and zoning districts and are much less restrictive than historic districts. They tend to focus more on preserving overall community character rather than specific historic fabric. While types of conservation districts vary greatly across the country, they often provide for review of demolitions and other major changes to existing properties, such as large additions. Conservation district reviews, however, rarely include the "fine grain" design-review items addressed by traditional local historic district regulations, such as windows, doors, trim, and building materials.

NCDs are becoming an increasingly popular go-to tool for planners across the country. **Dallas** has had a very successful Conservation District (CD) program since 1988. Stable neighborhoods with distinctive neighborhood character are eligible to become conservation districts and can officially be adopted within 12 to 18 months. Since there is no neighborhood age requirement and the review process is much quicker than for a historic district, CDs have become extremely popular in Dallas. To date, there are 20 CDs in Dallas and several more are under review.

Form-Based Codes

Many cities are looking to form-based codes to foster building reuse and encourage more compatible new construction. Good form-based codes for existing communities are context-sensitive, based on analysis of existing building patterns. With this analysis as a guide, zoning districts and development standards can be recalibrated to more closely match patterns that are seen as desirable and worth continuing.

Historic Main Street and neighborhood commercial districts are examples of where form-based codes can be particularly effective in promoting the conservation of existing buildings. In many cities, development in these areas is guided by one-size-fits-all commercial zoning that was created for auto-oriented retail locations. These standards may include highway-style minimum setbacks and excessive parking requirements with little in the way of pedestrian-oriented design elements. Potential development allowed "by right" is often much more intensive than "as-built" conditions, creating a speculative environment that discourages investment in existing buildings.

Denver created new Main Street zoning districts that were first used along the city's main commercial thoroughfare, Colfax Avenue. These districts reduced heights for a better fit with existing buildings, required most new construction to meet the existing street wall, and moved parking to the side or rear of the site. The new regulations have led to investment in existing, often historic structures, as well as several new projects that are helping to fill gaps in the historic fabric.

The success of this new form-based zoning helped spur Denver's 2010 adoption of a new citywide form-based code.

Larimer Square in Denver. Photo by dnkbdotcom/Flickr (CC 2.0 Generic).

Demolition Deterrence

Many jurisdictions do not charge fees that adequately reflect the true cost of demolition and disposal of demolition debris, thereby making it easier for owners to choose demolition rather than repurposing of existing buildings. The **City of Tacoma, Washington,** provides an example of how this is changing. By increasing demolition and permitting fees to reflect true costs, the city is externalizing the cost of demolition into project costs, potentially discouraging demolition instead of subsidizing it. New York City has also implemented high demolition fees, in part because demolition and construction debris make up such a large percentage of that city's waste stream.

In **Telluride, Colorado**, if the demolition of a historic building occurs without a permit, that property will be precluded from redevelopment for 10 years. While this policy is limited to historic structures, there may be the potential to apply such a strategy to existing buildings more generally. Denver has also implemented a number of strategies to deter demolition, including the outright denial of building demolition requests unless "all economically viable use of the property" is precluded. Buildings with approved demolition cannot be demolished until the new building is approved by the city, thus preventing the creation of empty lots and surface parking lots (Collins, Waters, and Dotson 1991).

Perhaps one of the most thoughtful and progressive approaches to accounting for the costs of demolition can be found in **San Francisco**. Under that city's green building ordinance, if a building is demolished, stricter green-building code requirements apply to the new building that will be constructed in its place — in essence requiring the new building to achieve a higher level of environmental performance to offset the negative impacts associated with demolition and new construction. However, requirements for additional green features are reduced if the new building will provide additional density, thereby acknowledging the environmental benefits associated with added capacity to a site. San Francisco's requirements are unique in their acknowledgement of the environmental costs associated with demolition; they attempt to require developers to either rethink their decision to demolish or compensate for these impacts in some way.

Rightsizing Parking Requirements

Minimum parking requirements pose significant barriers to reusing older buildings built in urban locations before the advent of cars or parking mandates. These one-size-fits-all standards make it difficult or infeasible to restore older buildings due to lack of space or the high cost of adding parking structures. Further, minimum parking requirements do not recognize the walkable, transit-oriented nature of urban cores and can threaten the vibrant urban fabric that makes downtown locations so desirable.

Many cities are beginning to recognize the detrimental side effects of minimum parking requirements and have begun to enact ordinances that make exceptions for the reuse of older and historic buildings. For example, in 1999 **Los Angeles** adopted its Adaptive Reuse Ordinance, which allows economically distressed or historically significant office buildings to be converted into residential uses without requiring new parking spaces. After this ordinance was enacted, rehabilitations of older buildings skyrocketed: 7,300 new housing units were created from historic office buildings from 1999 to 2008, a dramatic increase from the 4,300 housing units that were added during the prior 30 years. Other cities, such as **Tacoma** and **San Francisco**, make parking-requirement exceptions for smaller, older buildings that were built before current-day code requirements. This not only encourages reuse of individual building stock but ensures that the walkable, historic urban character of entire neighborhoods is maintained.

Next-Generation Tools for Protecting Older Buildings

In addition to the strategies to encourage older and historic building conservation described above, new tools currently under development offer promise for the future. For example, there is increasing focus in places such as Seattle on improving building performance outcomes, but doing so in a way that also makes it easier to reuse and retrofit existing buildings. National efforts, led by organizations such as the Portland Sustainability Institute, that encourage the implementation of eco-districts — or neighborhood scale approaches to sustainability — may also produce useful community strategies for encouraging building reuse.

Outcome-Based Energy Codes

Energy codes can discourage both the reuse and retrofit of existing buildings. Prescriptive code provisions do not recognize the inherent passive strengths of historic or older buildings and at the same time can mandate changes that compromise inherent architectural character. As energy codes become increasingly stringent over time, the associated increases in construction costs to meet current codes can reduce the financial viability of repurposing older buildings, leading to further disinvestment and ultimately to demolition.

The Preservation Green Lab, the New Buildings Institute, and the City of Seattle have developed a regulatory framework for enhancing the energy performance of existing buildings through an alternative, **outcome-based energy code** path. Three historic building pilot projects now under way in Seattle are informing the development of a national model for how jurisdictions can simplify regulations to achieve verified energy performance and carbon reduction outcomes over time. This code framework enables a flexible, whole-building approach for realizing the energy saving opportunities that are unique to each existing building. Central to the new code's market acceptance is the emphasis given to the interactions between energy management software and technology, building operations, and occupant behavior in dramatically reducing energy use over time.

The Supply Laundry Building will be taken through a draft outcome-based compliance path. Reproduced courtesy of Vulcan Real Estate.

Eco-District Approaches to Building Conservation

As carbon reduction targets for buildings become increasingly more ambitious — encouraging buildings to achieve net-zero energy performance — older and smaller urban buildings may be particularly disadvantaged in meeting these goals. Because of their size and structure, it may be technically infeasible or too financially costly to install the advanced heating, cooling, and renewable energy systems needed to meet substantial emissions-reduction targets on a building-by-building basis.

In recent years, interest has emerged in the concept of eco-districts, which are neighborhood-scale efforts to achieve sustainable development objectives. **District energy systems** are often identified as one such neighborhood scale sustainable development option that may be particularly usefully for communities of older, smaller buildings. These neighborhood-scale utilities deliver heating, cooling, and hot water to a defined service area, and may ultimately make it more affordable and feasible to transition older buildings to cleaner sources of energy. There are hundreds of district energy systems already in use throughout the United States, the majority of which are located in hospitals, universities, and other institutional complexes, and a number of cities in the U.S. and abroad, including Stockholm, Sweden; Vancouver, Canada; and St. Paul, Minnesota, have long-standing systems. Other U.S. cities are beginning to embrace such systems.

West Union, Iowa, for example, is in the midst of an ambitious plan to redefine its downtown core that includes the creation of a new district-energy system based on renewable ground-source thermal energy (Preservation Green Lab 2010). The system will make West Union one of the first communities in the nation to choose district energy as an energy performance strategy in an existing neighborhood of historic buildings. While financing and other challenges make district-energy solutions challenging to scale to a large number of cities at this juncture, the **Portland Sustainability Institute**, **Living City Block**, the **International District Energy Association**, and others are working to make neighborhood-scale energy systems a more viable alternative to conventional emissions reduction strategies.

These district-based strategies may well offer planners yet another tool or group of tools with which to promote the conservation of existing buildings in the future.

Conclusion

Myriad tools are available to help communities retain valuable historically significant buildings, as well as nondesignated older buildings that add tremendous character and other benefits to communities. These strategies notwithstanding, there can be multiple forces at work that make it difficult for communities to promote the conservation of existing buildings. For example, new

construction may be less expensive (or seem that way), largely because the environmental and health impacts associated with new construction are externalized — that is, they are not included in developer costs, but are instead transferred to the community.

Yet encouraging efforts are underway to address this challenge. An ambitious new project by Earth Economics called the **Economics of Change** seeks to create a new investment model for real estate that includes social and environmental benefits, and would potentially serve to help communities promote reinvestment in existing buildings (Twill et al. 2011). In combination with the development of other tools that address other fundamental obstacles to reuse, such new thinking could lead to yet other generation of creative strategies that builds on the success of existing policy tools, while helping communities to achieve even more significant rates of building reuse.

About the Authors

Patrice Frey is the director of sustainability and Rachel Bowdon is the sustainability program assistant at the National Trust for Historic Preservation. To receive weekly roundups of preservation and sustainability news, e-mail **RBowdon@savingplaces.org**.

References

Busby, Perkins + Will. 2006. "Life Cycle Assessment, Buchanan Building-D," University of British Columbia.

Collins, Richard C., Elizabeth B. Waters, and A. Bruce Dotson. 1991. *America's Downtowns: Growth, Politics and Preservation.* New York: The Preservation Press.

Empty Homes Agency. 2008. *New Tricks with Old Bricks: How Reusing Old Buildings Can Cut Carbon Energy Emissions.* London: Empty Homes Agency. **www.emptyhomes.com/what-you-can-do-2/resources/environment-and-energy/**

Garrett-Peltier, Heidi. 2011. "Employment Estimates for Energy Efficiency Retrofits of Commercial Buildings." University of Massachusetts, Amherst: Political Economy Research Institute. **www.peri.umass.edu/fileadmin/pdf/research_brief/PERI_USGBC_Research_Brief.pdf**

Levitt, Julia. 2011. "Preservation Green Lab's Liz Dunn on the Economics of Urban Grain." *The Atlantic*, December 1. **www.theatlantic.com/national/archive/2011/12/preservation-green-labs-liz-dunn-on-the-economics-of-urban-grain/248190/**

Preservation Green Lab and Center for Sustainable Practices, University of Oregon. 2010. *District Energy in West Union, IA.* National Trust for Historic Preservation. **www.preservationnation.org/information-center/sustainable-communities/sustainability/green-lab/additional-resources/West-Union_FINAL.pdf**

Preservation Green Lab. 2011. *The Greenest Building: Quantifying the Environmental Value of Building Reuse.* National Trust for Historic Preservation. **www.preservationnation.org/information-center/sustainable-communities/sustainability/green-lab/lca/The_Greenest_Building_lowres.pdf**

Rypkema, Donovan. 2008. *The Economics of Historic Preservation*. Presented at the Missouri Statewide Preservation Conference.

Twill, J., D. Batker, S. Cowan, and T. Wright Chappell. 2011. *The Economics of Change: Catalyzing the Investment Shift Toward a Restorative Built Environment.* Tacoma, Wash.: Earth Economics. **www.eartheconomics.org/FileLibrary/file/Green%20Building/The%20Economics%20of%20Change_1.3_web_version.pdf**

U.S. Energy Information Administration. 2003. *Consumption of Gross Energy Intensity for Sum of Major Fuels for Non Mall Buildings*. Department of Energy. **http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set9/2003pdf/c3.pdf**

U.S. Energy Information Administration. 2009. *Green Building Facts.* Department of Energy.

U.S. Energy Information Administration. 2009*. Household Consumption and Expenditures in the U.S. –Totals and Intensities*. Department of Energy. **http://205.254.135.7/consumption/residential/data/2009/index.cfm#fuel-consumption**

Resources

Dallas (Texas), City of, Department of Sustainable Development and Construction. "Current Planning—Conservation Districts." **www.dallascityhall.com/development_services/conservation_districts.html**

Denver (Colorado), City of. 2011. *Zoning Code*. Division 13, Main Street Zone Districts—MS-1, MS-2, and MS-3. **www.denvergov.org/Portals/646/documents/DZC/Former%20Chapter%2059/**

d13%20MS%20from%20Article%20IV%20Zone%20Districts%20of%20Former%20Chapter%2059_62510-3.pdf

Denver (Colorado), City of, Department of Community Planning and Development. "Other Zoning Services: Transfer of Development Rights."
www.denvergov.org/OtherZoningServices/tabid/434418/Default.aspx

Eifler and Associates. "The Ross House." **www.eiflerassociates.com/Ross.htm**

Empire State Building. "Sustainability and Energy Efficiency."
www.esbnyc.com/sustainability_energy_efficiency.asp

Grocoff, Matt, and Kelly Grocoff. "About Our Mission Zero House."
www.greenovationtv.com/missionzerohouse/About.html

International District Energy Association. **www.districtenergy.org/**

Living City Block. **www.livingcityblock.org/**

Los Angeles (California), City of, Mayor's Office of Economic Development. n.d. *Los Angeles Adaptive Reuse Program Handbook*. **www.ci.la.ca.us/LAHD/AROHandbook.pdf**

National Trust for Historic Preservation. "**District Energy** and Eco-Districts."
www.preservationnation.org/information-center/sustainable-communities/sustainability/green-lab/district-energy.html

National Trust for Historic Preservation. "Outcome Based Energy Codes."
www.preservationnation.org/information-center/sustainable-communities/sustainability/green-lab/outcome-based-energy-codes.html

National Trust for Historic Preservation. "Preservation Green Lab."
www.preservationnation.org/issues/sustainability/

National Park Service. *The Secretary of the Interior's Standards for the Treatment of Historic Properties*. **www.nps.gov/hps/tps/standguide/**

New Buildings Institute. "Case Studies and Research." **http://newbuildings.org/case-studies-research**

New York (New York), City of. 2012. *Zoning Ordinance*. Article 7, Administration; Chapter 4, Special Permits by the City Planning Commission; Section 74-79,Transfer of Development Rights from Landmark Sites. **www.nyc.gov/html/dcp/pdf/zone/art07c04.pdf**

New York State, Department of State. 2010. *Transfer of Development Rights*. James A. Coon Local Government Technical Series.
www.dos.ny.gov/LG/publications/Transfer_of_Development_Rights.pdf

Portland Sustainability Institute. **www.pdxinstitute.org/**

San Francisco (California), City of. *Preservation Bulletin No. 6: Preservation Incentives.***www.sf-planning.org/Modules/ShowDocument.aspx?documentid=5075**

San Francisco (California), City of, Department of Building Inspection. 2011. "Interim Administrative Bulletin
NO. AB-093: Implementation of Green Building Regulations."
http://sfdbi.org/Modules/ShowDocument.aspx?documentid=308

San Francisco (California), City of, Planning Department. "Historic Resources Survey." **www.sf-planning.org/index.aspx?page=1826**

San Francisco (California), City of. 2012. *Planning Code*. Article 1.5, Off-Street Parking and Loading; Section 161, Exemptions From Off-Street Parking, Freight Loading and Service Vehicle Requirements; part k, Historic Buildings.
www.amlegal.com/nxt/gateway.dll/California/planning/planningcode?f=templates$fn=default.htm$3.0$vid=amlegal:sanfrancisco_ca$sync=1

Seattle (Washington), City of, Department of Neighborhoods. "Incentives for Historic Neighborhoods in Seattle."
www.seattle.gov/neighborhoods/preservation/documents/brochure_incentives.pdf

Tacoma (Washington), City of. 2010. "General Government Fee Schedule: Special and Miscellaneous Services."
http://cms.cityoftacoma.org/cityclerk/Files/ClerkForms/FEESCHED.pdf

Tacoma (Washington), City of. 2012. Municipal Code. Title 13, Land Use Regulatory Code; Chapter

13.06, Zoning; Section 13.06.510, Off-Street Parking and Storage Areas; parts A(1)(d) & (e). **http://cms.cityoftacoma.org/cityclerk/Files/MunicipalCode/Title13-LandUseRegulatoryCode.PDF**

Telluride (Colorado), Town of. *Land Use Code*, Article 7, Division 3: Relocation and Demolition. **www.telluride-co.gov/landuse/art7div3.html**

U.S. Department of the Treasury. 2011. "At Treasury, Green is Our Favorite Color—But We'll Take (LEED) Gold!" *Treasury Notes*, December 21. **www.treasury.gov/connect/blog/Pages/At-Treasury-Green-is-Our-Favorite-Color-But-Well-Take-LEED-Gold.aspx**

Vance Building. "Green Features." **www.vancebuilding.com/green_features**