

---

# THE IMPACT OF EVOLVING LEED STANDARDS ON HISTORIC PRESERVATION PROJECTS

Barbara A. Campagna, AIA, LEED AP,<sup>1</sup> and Patrice Frey<sup>2</sup>

## INTRODUCTION

At a 2008 forum on climate change, green building, and historic preservation held by the Getty Conservation Institute, one architect ventured the view that there is as much relationship between historic preservation and green building as there is between *cheese* and *street width*. That is to say, the issue of heritage conservation and protecting our environment are not typically thought of as interrelated. Indeed, the term “high performance green building” calls to mind sophisticated contemporary designs that employ cutting-edge new technologies to reduce environmental impacts of buildings; at first blush, historic buildings may not seem to offer much in the way of similarities with such tech-savvy, environmentally friendly buildings.

Yet there is much to be learned from historic buildings, and historic preservationists have more in common with green building advocates and environmentalists than might be expected. In their role as stewards for the historic built environment, preservationists are particularly adept at thinking long-term about the way buildings deteriorate over time, are maintained and restored, and adapt to new uses. Preservationists, after all, are in the business of making sure buildings endure for the next generation to use, enjoy, and benefit from—and planning for the next generation is the very essence of sustainability.

This focus on the long-term survivability of buildings is an essential element of any green building standard. However, many have expressed concern that the most popular of the green building rating systems in the United States, the U.S. Green

Building Council’s (USGBC) Leadership in Energy and Environmental Design (LEED) program, fails to adequately take into account the value of the continued use and greening of existing buildings. There is considerable criticism that LEED is far too focused on *new* construction, despite the fact that nearly half of our carbon emissions come from *existing* buildings.

Other charges are levied by preservationists, specifically that even when LEED is applied to historic buildings, it is often done in a way that is not sensitive to historic fabric. And persistent beliefs remain about fundamental incompatibilities between LEED and the U.S. Secretary of the Interior’s Standards for the Treatment of Historic Properties, the most widely-accepted and commonly used standards for historic preservation in the United States.

In 2007, the National Trust for Historic Preservation launched its Sustainability Program, in large part to address concerns by preservationists about the rapidly expanding and increasingly influential LEED program. The National Trust’s Sustainability Program emphasizes not only the social and economic value of preservation, but the environmental benefits of conserving our built resources. The Program is guided by the four core principles of sustainable stewardship: **reuse** of older and historic buildings, **reinvestment** in our existing communities, green **retrofits** of older and historic buildings to conserve energy, and **respect** for our heritage buildings.

During the past two years, the National Trust has worked closely with the U.S. Green Building

---

<sup>1</sup>Barbara A. Campagna (barbara\_campagna@nthp.org), AIA, LEED AP, Graham Gund Architect of the National Trust, is the Chief Architect for the 29 Historic Sites operated by the National Trust and architectural leader of the National Trust’s Sustainability Initiative. She received the National AIA Young Architect of the Year Award 2002 and was the president of the Association for Preservation Technology International 2005–2007.

<sup>2</sup>Patrice Frey (patrice\_frey@nthp.org) is the Director for Sustainability Research at the National Trust for Historic Preservation. Her graduate work included a thesis on LEED and historic buildings, *Measuring Up: The Performance of Historic Preservation Projects Under the LEED-NC Green Building Rating System*. She has also authored other research pieces on sustainability and preservation, available at [www.preservationnation.org/green](http://www.preservationnation.org/green).

Council to encourage the improvement of LEED Green Building standards to better reflect the benefits of building reuse and the reinvestment in existing neighborhoods. Recent changes in LEED 2009 address some—though not all—of these concerns. Most significantly, however, LEED’s transition from a system based on loose ideas about what makes buildings sustainable to a program that is based on the science behind green building signals the USGBC’s commitment to reforming the system in a meaningful and substantial way. Such changes are expected to favor historic preservation projects and existing buildings in general.

In recent years, we have seen the greening of a number of historic buildings under the previous version of LEED-NC, version 2.2, including the Portland Armory (LEED-Platinum), Pasadena City Hall (LEED-Gold), the Cobb Building in Seattle (LEED-Silver), and the National Trust’s green rehabilitation of the President Lincoln’s Cottage Visitors Education Center in northwestern Washington, D.C. (LEED-Gold). However limited LEED-NC v. 2.2 is in recognizing the value of historic buildings, it is clear that achieving certification for such projects is feasible. This is only expected to improve under LEED 2009.

This article profiles the LEED certification of the President Lincoln’s Cottage Visitors Education Center under LEED-NC v. 2.2 and looks in detail at changes in LEED 2009 and LEED Neighborhood Development, and the projected impact on future historic projects.

## **INTEGRATING HISTORIC PRESERVATION VALUES AND GREEN BUILDING PRACTICES AT THE ROBERT H. SMITH VISITOR EDUCATION CENTER AT PRESIDENT LINCOLN’S COTTAGE**

It is well established that buildings are the largest contributor to the greenhouse gas emissions in the United States that cause global warming—and making buildings more energy efficient is one of the most immediate and measurable ways to address this growing concern. The advantages of “green buildings” are well documented: 30 percent energy savings, 35 percent carbon savings, 30–50 percent water savings, and 50–90 percent waste cost savings.

In the past two decades, a variety of third-party building rating systems have been developed to measure the impact of building construction and building operations on the environment. As these systems have been further finessed, and as the science has improved, their primary purpose has become to encourage and develop best practices in the construction field. In just eight years, one rating system in particular has truly transformed the market and the ways in which architects practice—the USGBC’s LEED program. As of May 1, 2008, more than 3.5 billion square feet of building projects (10,000+ individual projects) have registered intent to seek LEED certification, with dozens more signing up every day.

LEED certification is increasingly respected in the building industry as a recognition of social responsibility and leadership in an emerging field. Many state and local governments, and some federal agencies such as the General Services Administration, now recommend or require that construction projects earn a LEED rating. In addition to reaping the economic benefits of sustainable design—from improved worker productivity and health to lower operating costs—LEED-certified buildings in a few states and cities can now qualify for financial incentives. In Maryland for example, their state rehabilitation tax credit will be 20% for regular projects or 25% if LEED Gold can be achieved.

---

The Armory building in Portland, Oregon was recently certified LEED Platinum. Originally constructed in 1891 for Oregon’s National Guard, the structure is now an arts performance hall for Portland Center Stage.



Though there are now around a dozen LEED products, LEED for New Construction & Major Renovation (NC) is most commonly used for historic preservation projects. LEED for Core and Shell (CS) is used occasionally as well. The greening of the Lincoln Cottage Visitors Education Center in Washington DC offers one study of the use of LEED-NC with a historically significant property.

The President Lincoln Cottage and Soldiers' Home National Monument in Washington D.C. is managed by the National Trust for Historic Preservation in cooperation with the Armed Forces Retirement Home. In 2000, the Trust initiated efforts to preserve President Lincoln's Cottage, where the Lincoln family resided seasonally between 1862 and 1864. The Cottage was constructed in 1842 for George Washington Riggs, one of Washington's earliest and most successful bankers, and is located three miles north of the Capital on a rise overlooking the City.

As part of opening the President Lincoln's Cottage to the public, the National Trust also undertook the adaptive use of a nearby building. The Administration Building, an Italianate Renaissance Revival style building that was constructed in 1905 as part of the Soldiers' Home complex, has been adapted for use as the Visitor Education Center (VEC) for President Lincoln's Cottage, and incorporates administration space for the Trust. The Cottage and the VEC were opened to the public in February 2008, and the VEC project was registered for LEED NC 2.2 certification and is awaiting final certification at the gold level.

---

President Lincoln's Cottage in Washington, D.C.



---

High LEED ratings *can* be achieved with historic buildings. With its rehabilitation of the President Lincoln's Cottage Visitor Education Center in Washington, D.C., the National Trust initially aimed for a silver rating but is now on track to earn gold. This project will also be used as a pilot to test the Alternate Compliance Path. Photo courtesy of the National Trust.



The National Trust is committed to integrating sustainable planning policies and sustainable conservation treatments in both the Lincoln Cottage and the VEC. This effort was undertaken as part of the National Trust's larger Sustainability Program, which is designed to promote the understanding of historic buildings as significant environmental, economic, social, and cultural resources. The VEC project was made possible through the support of United Technologies Corporation, which is facilitating the LEED-NC certification.

The Lincoln Cottage VEC case study suggests that there are few points of tension between green building and historic preservation standards. With relatively few exceptions, LEED-NC and historic projects can be mutually reinforcing, and even help demonstrate the degree to which there is a natural link between historic preservation and sustainability.

A brief summary of some of the credits achieved in the project provides an overview of how the intrinsic values of an existing building can be used within the LEED construct. Out of a potential 69 points, the project received 44 points: in the Sustainable Sites Category 9 points out of 14 were achieved; in the Water Efficiency Category 4 points out of 5 were achieved; in the Energy & Atmosphere

category, 5 points out of 17 were achieved; in the Materials & Resources category, 9 points out of 13 were achieved; in the Indoor Environmental Quality category 12 points out of 15 were achieved, and in the Innovation & Design Process category, all 5 points were achieved. Highlights from each of the 6 categories follow:

### **Sustainable Sites**

Since the building is located in a densely developed urban area, the project was able to take advantage of the credits provided to urban sites under the Sustainable Sites category such as providing access to community services and transportation alternatives such as the metropolitan Washington, DC bus lines. Bike racks and a shower encourage employees to walk, run, or bike to work and no parking spaces were added to the site.

### **Water Efficiency**

The use of indigenous landscape vegetation requires no potable water for irrigation. Using water-efficient plumbing fixtures reduces the building's use of potable water by 44%. Some of the strategies included use of dual-flush, low-flow toilets, 0.5 gallon per minute automatic lavatory faucets and aerators, and installing showerheads using less than 2.2 gallons per minute. Stormwater was managed by disconnecting roof leaders and storm drains from conventional infrastructure and the use of subsurface infiltration basins.

### **Energy & Atmosphere**

The building is expected to exceed minimum energy-efficiency requirements by 10% largely by reducing the use of electric lighting. Daylighting of up to 75% of all the occupied spaces and outside views to 92% of occupants is provided by the restored large perimeter windows. Further control is provided by occupancy sensors, dimming switches, and individually controlled multi-level task lighting. It is significant to note that the meticulously restored windows contributed to the energy efficiency of the building, specifically with the use of brass weatherstripping. Like all LEED projects, this project was commissioned, one of the most important benefits that the prerequisites in LEED have provided to the building community.

### **Materials & Resources**

The reuse of an existing building avoided the impacts of producing and shipping many new materials. The project reused 98% of the existing walls, roof, and floors. Recycling 15% of the building components was achieved through refurbishment and reuse. New materials used products with high levels of recycled content. And approximately 20% of all the new materials in the project were sourced from within 500 miles of the site.

### **Indoor Environment Quality**

In order to provide a comfortable and healthy indoor environment, an indoor air quality plan during construction was implemented, and all carpeting, paints, coatings, adhesives, and sealants were chosen for their low levels of volatile organic compounds.

### **Innovation & Design Process**

Three of the five potential points in this category were achieved by using a LEED Accredited Professional on the project, developing an education plan about the sustainable practices at use on the site, and instituting a green housekeeping program. The final two points were achieved by instituting exemplary performance in both water reduction and in non-roof heat island effect.

The greening of the President Lincoln's Cottage VEC demonstrates the remarkable degree to which historic buildings are compatible with LEED-NC standards—indeed, many other preservation projects have also earned LEED certification with relative ease. Out of the 69 points offered under LEED-NC v. 2.2, about 20 are building-type neutral, meaning any building or project type—renovation or new construction—can get these points. Another 10 points directly support preservation activities. Recent projects suggest that *any* existing building should be able to achieve a “certified” rating with very little effort. Earning “silver” requires a bit more effort, and even “gold” is readily achievable, as the Lincoln Cottage VEC demonstrates.

President Lincoln's Cottage VEC Construction Manager and LEED Coordinator Gavin Gardi notes that while no sustainability criteria would fit every project, and LEED-NC “is not a perfect fit” for historic projects, it generally works well. Nonetheless, there were a number of ways in which LEED-NC

v 2.2 could be modified to better respond to the realities of historic buildings—or any existing building. An ad hoc coalition of organizations called the Sustainable Preservation Coalition has been advising the USGBC on ways to incorporate preservation, social, and cultural values into LEED, and the updated versions of LEED reflect this.

## **INTEGRATING PRESERVATION VALUES INTO LEED: THE SUSTAINABLE PRESERVATION COALITION**

The National Trust for Historic Preservation created the Sustainable Preservation Coalition in 2006 to influence further development of the LEED Building Rating Systems to better recognize the value of historic and existing buildings. The National Trust partnered with several national organizations that were developing separate sustainability agendas, including the American Institute of Architects, Association for Preservation Technology International, National Park Service, General Services Administration, and National Conference of State Historic Preservation Officers. The coalition's first goal was to meet with the USGBC to start a conversation on how to improve its rating systems to better reflect the importance of existing buildings to sustainable stewardship of our planet and its limited resources.

While historic buildings have achieved a number of gold and platinum LEED ratings, the Sustainable Preservation Coalition believed the rating system could be improved because version 2.2 of LEED-NC overlooks the impact of projects on cultural value, does not effectively consider the performance, longer service lives, and embodied energy of historic materials and assemblies, and is overly focused on current or future technologies, neglecting the advantages of many traditional building practices.

The coalition's engagement resulted in an invitation from the USGBC to help the USGBC prepare preservation metrics (standards of measurement) for new versions of LEED. The coalition developed a white paper that identified eight basic metrics that appeared to be lacking in LEED. The eight metrics presented to USGBC were split into two categories, including four Life Cycle Assessment metrics that can be more readily measured scientifically, and four metrics for social and cultural values that are more difficult to quantify.

## **A. LCA BASED METRICS**

1. **Reduced Carbon Footprint—Construction Process**—Recognize impacts that are avoided by the reuse of existing and/or historic buildings, such as the preservation of embodied energy, avoidance of waste generation, and reduction in the production, transportation, and use of new materials. Embodied energy can be considered the more “actionable” assessment of the environmental, economic, and social impacts that are avoided by extending the useful service life of existing buildings. If we can identify the energy consumption of new building construction and creation of new products versus energy not consumed by using an existing building, we can better understand what does *not* happen by using an existing building.

In order to assess these impacts, the energy consumption of new building construction and existing building rehabilitation must be quantified. The lower energy consumption of existing buildings must be adequately recognized. This might be best captured in a Life Cycle Analysis that produces a point score, with those projects with lighter carbon footprints earning higher scores than those that consume more resources.

2. **Reduced Carbon Footprint—Operations and Livability**—Recognize the value of passive climate control. Historic buildings were traditionally designed with many sustainable and passive features that responded to climate and site. When effectively restored and reused, these features can bring about substantial energy savings. Preference should be given to projects that maximize passive climate control.

Where necessary, today's energy efficiency technology can supplement inherent sustainable features without compromising unique historic character. Understanding and recognizing the climate a building is in and how the original design may have responded to its microclimate, allows, and continues to allow, a more holistic approach to building and site design.

3. **Durability**—Identify the relative durability of various materials, systems, and assemblies and reward buildings whose components are more durable. Recognize the relatively long service life of traditional materials, which optimize the

length of time a building can effectively remain in service. A material or assembly may be considered durable when its useful service life and performance is fairly comparable to the time required for related impacts on the environment to be absorbed by the ecosystem. Improving durability reduces the need for resources and expenditures associated with maintenance, repair, and replacement.

4. **Life Cycle Flexibility**—Recognize the multiple reuses and adaptability of historic building types that extends the life cycle of buildings, the building stock, and our communities. Life cycle assessment **MUST** extend to building renewal protocols, moving from a cradle-to-grave to a cradle-to-cradle approach.

## B. NON-LCA BASED METRICS

5. **Social sustainability**—Celebrate existing buildings and provide more reward for the recognized sites of architectural, cultural, and social significance using the nationally recognized standards and criteria already established by the National Register of Historic Places criteria and the Secretary of the Interior's Standards for the Treatment of Historic Properties. Nationally recognized standards for historic buildings exist as a result of the National Historic Preservation Act of 1966, and these standards should be acknowledged as a way to measure the intangibility of social and cultural sustainability. For example:

- Local Landmark
- Listed in the State Register of Historic Places
- Listed in the National Register of Historic Places
- National Historic Landmark

The LEED-ND standards do a commendable job of beginning to reward the reuse of historic buildings. Like other “LEED Referenced Standards”, we believe that the National Register designation offers an excellent proxy for social sustainability and could be adopted as such.

6. **Health and Comfort**—Recognize the high degree of individual controllability in historic and existing buildings. Traditional and vernacular buildings, constructed before fossil fuels were in widespread use, required active participation of

building occupants to manage and control their comfort, health, and productivity. The ability to control one's environment is enhanced by traditional design elements such as operable windows and shutters, awnings, daylighting, and natural ventilation. While these metrics are already implied in the Daylighting and Ventilation Metrics of LEED-NC, we believe they should be integrated throughout the credits and products.

7. **Social capital**—Recognize the importance or “social capital” associated with historic buildings and neighborhoods. LEED should recognize the success of historic buildings in relating and connecting to their context—other buildings and infrastructure—and recognize that “historic districts” have comparable values that give them a unique sense of place or “neighborhood.” Such metrics should help to discourage trends such as teardowns and sprawl.
8. **Density**—Optimize the location of a building to community infrastructure. Density through “smart growth” invests time, attention, and resources to restoring community and vitality to center cities and older suburbs. Density that is more town-centered, is transit and pedestrian oriented, has a greater mix of housing, commercial, and retail uses, and preserves open space presents a long-term thinking about our communities.

A number of these preservation metrics are better represented in LEED 2009.

---

Downtown Manitou Springs, Colorado. Such spaces not only provide a sense of context and history, they are also sustainability designed—with walkable streets, mixed uses, and higher densities. Such neighborhoods are also frequently transit-accessible.



## LEED 2009

LEED's rapid success presents its stewards, the USGBC membership, with opportunities to continue to improve the rating systems to ensure that future buildings certified under its criteria are even greener than the stock in the pipeline to date. With its unveiling of LEED 2009, also referred to as Version 3 (v3), the USGBC released its most comprehensive amendments to LEED since 2000. The final version of LEED-2009 was approved by USGBC members in November 2008. These latest and comprehensive edits to LEED look familiar, but the way they will be used is different. They also have significant implications for historic buildings.

The many changes to LEED 2009 include some that will directly favor the preservation and continued use of existing buildings. Changes to NC: New Construction & Major Renovation are discussed here, since this will have the largest impact on historic projects.

The LEED Accreditation and project certification processes have changed substantially under LEED 2009. In 2008, USGBC spun off a new organization, called the Green Building Certification Institute (GBCI), to manage its accreditation and Accredited Professional testing process. Beginning in 2009, GBCI will take over the certification process as well. Peter Templeton, the founding Director of LEED, was recently announced as the new President of GBCI. USGBC will now handle all the development of LEED and green building practices, and GBCI will handle all credentialing and certification, ensuring an independent third-party verification of the testing and certifying processes.

The biggest complaint about the current LEED rating systems (such as LEED NC 2.2) is that every credit is worth one point—and that there is no weighting by impact or priority. But with LEED 2009 this has changed. Points are now distributed based on consideration of the relative environmental or human benefit provided by that item.

The credits in the new version are weighted according to Life Cycle Assessment (LCA) criteria. Life Cycle Assessment is a scientific methodology to calculate the environmental performance of a product over its full life cycle. By applying LCA to the existing credits, the total possible score for a project has been increased from 69 to 100 points, or actu-

ally 110 since there are various bonus points. LEED 2009 uses US EPA's TRACI environmental impact categories. TRACI is a computer software tool developed by the U.S. EPA to assist with impact assessment for Life Cycle Assessment, Industrial Ecology, Process Design, and Pollution Prevention.

Layered on top of the TRACI environmental impact categories are weightings devised under the auspices of NIST (National Institute of Standards and Technology) that compare the impact categories to each other and assign a relative importance to each. Together, the TRACI impact categories and the weightings assigned by the NIST process provide a foundation for discussion of the environmental impacts related to the design, construction, operations, and maintenance of the built environment.

The six measurement categories (sustainable sites, water efficiency, materials and resources, energy and atmosphere, indoor environmental quality, and innovation and design process) remain the same, but the points have been reallocated according to the results of the LCA weighting. *Sustainable Sites* has gone from 14 possible points to 26. *Water Efficiency* has increased from 5 possible points to 10. *Energy & Atmosphere* has increased from 17 possible points to 35. *Materials & Resources* has increased from 13 possible points to 14. *Indoor Environmental Quality* has remained at 15 possible points. *Innovation & Design* has increased from 5 possible points to 6. And a new section of *Regional Bonus Credits* with 3 possible points has been added.

There are a number of ways that the weighted system will better support smart growth and preservation goals: First, there are many concerns that past versions of LEED are not sensitive enough to the context of buildings—witness the new “green” buildings that have been constructed in the suburban fringe and seek LEED platinum. The increase of weighting and points in *Credit 2—Development Density & Community Connectivity*, under the category *Sustainable Sites*, encourages the construction or renovation of buildings within a dense community to help dissuade that kind of activity. This credit has increased from 1 point to 5 points. *Sustainable Sites, Credit 4.1—Alternative Transportation—Public Transportation Access* has been increased from 1 point to 6 points, thereby encouraging the placement of buildings in dense communities with access to various forms of public transportation. Such

changes clearly support Smart Growth principles for sustainable sites.

Many older and historic buildings are located in smart locations, communities that were designed before widespread use of the automobile. These neighborhoods were built more compactly out of necessity, and tend to be dense, walkable, feature mixed uses, and are very often accessible to public transit. In short, most historic building rehabilitations seeking LEED certification should benefit from the increased number of points awarded under the *Sustainable Sites* category.

The *Water Efficiency* category is now more effectively addressing the topic of water use in our buildings. While the statistics about carbon footprints and energy efficiency top most reports discussing climate change impacts, many scientists believe that the overuse of water may have an even more significant impact on our way of life and our planet in the very near future. There is now a prerequisite in this division for a 20% reduction of water use of the baseline for the building type. Every other credit has been doubled from 1 point to 2. Such changes are expected to have little impact on historic projects.

With an increase from 17 to 35 possible points in the *Energy & Atmosphere* category, and an addition of 9 possible points to *Credit 1 – Optimize energy performance*, this is where one of the biggest impacts can be made. This change does not necessarily require the installation of complicated systems and technology; projects are also encouraged to use low-tech and passive systems that acknowledge regional climatic impacts, which can result in positive impacts to the rating of traditionally built buildings that often better recognize the climate in their design features than later buildings.

The revision to the *Materials & Resources* category has caused a lot of consternation in the preservation community because at first glance, Credits 1.1 and 1.2 don't appear to have changed significantly. *Credit 1.1 (Building Reuse, Maintain 75% of Existing Walls, Floors and Roofs)* and *Credit 1.2 (Building Reuse, Maintain 95% of Existing Walls, Floors and Roofs)* have been combined into Credit 1.1 and have a total of 3 possible points (one more point than both credits together provided in NC 2.2). In addition, *Credit 1.3, Building Reuse: Maintain 50% of Interior Non-Structural Elements*, has become Credit 1.2 but

remains unchanged from LEED v. 2.2 just providing one point. Many preservationists have expressed concerns that these changes are far too insignificant. However, an entirely separate Alternative Compliance Path is under development using the durability of the building materials as the metric. See the following section for more details.

The category *Innovation & Design Process* will now offer the opportunity to earn *Innovation & Regional Bonus Credits*. The USGBC Chapters are being given the responsibility to develop three additional points to reward projects that address environmental areas of concern in a project's region—for example, having operable windows and shutters in areas with high humidity, or courtyards that allow cross ventilation in tropical regions. This change will benefit many traditional buildings, whose siting and design often demonstrate low-energy solutions to meeting the requirements of their specific climate.

Yet even more changes are expected—and soon. It was a daunting task for USGBC to revise LEED even this much in less than a year, and the result is that it is now on the road to becoming a much more scientific approach to assessing green buildings. More comprehensive changes to the LEED standards remain a challenge, given that LCA remains in its infancy. Furthermore, the USGBC has expressed caution about changing their products so drastically over a short period of time that it upsets

---

Old San Juan, Puerto Rico. Building features designed to suit local climate conditions—such as operable windows, shutters, high ceilings, and cross-ventilation—may soon earn points toward LEED certification under a system of *Regional Bonus Credits* that is now being developed. Photo courtesy of the National Trust.



the marketplace. Nonetheless, it is expected that the next revision, targeted for 2011, will result in the removal of some credits and the addition of others.

Most significantly, the weighting system has been constructed in a way that if environmental and societal priorities shift, the focus of LEED can also shift by adjusting weightings across the key impact categories—without requiring a complete reconfiguration of LEED.

### **ALTERNATE COMPLIANCE PATH FOR EXISTING BUILDINGS**

A completely new Alternate Compliance Path is being developed that will benefit existing buildings, entitled “Life Cycle Assessment of Building Assemblies.” This will be an optional path to use the *Materials & Resources Credits* based on the durability and embodied energy of existing materials as determined through LCA criteria.

The science behind LCA is young and there are many different approaches to it. The USGBC has an LCA working group, made up of the most experienced LCA scientists on the continent, who are developing a special LCA Credit Calculator that quantifies the life cycle impact of the durability of various materials and building assemblies. Acknowledging the durability of materials and building assemblies is one of the most significant benefits that traditional historic buildings can present.

The Alternate Compliance Path was not ready for public review when the rest of the drafts for LEED 2009 were put out for public comment, but it will be available for use with LEED v3 in 2009. Currently the intent is that any building already registered for LEED will be able to use the Alternate Compliance Path—even if the project is registered under one of the past versions such as NC 2.2. The National Trust has offered our first LEED project, the President Lincoln’s Cottage Visitor Education Center, as a case study and a way to further formalize our partnership with USGBC.

The Sustainable Preservation Coalition is very supportive of this approach. While new construction can also use this path, we anticipate that existing buildings will rank the highest and achieve the most points. LEED for Neighborhood Development (LEED-ND) also offers some exciting changes for preservation projects and existing buildings.

### **LEED Neighborhood Development**

LEED ND – Neighborhood Development is among the USGBC’s newest rating systems, and was in pilot phase during 2007 and 2008. With the LEED-ND the USGBC has expanded the meaning of green building to more fully embrace the concept of sustainable development, offering points not only for ecologically sound building practices, but also for facilitating social, economic, and cultural sustainability. Points are offered for providing affordable housing, mixed-uses, access to park and recreational facilities, universal accessibility, and community outreach and involvement—to name only some of the many credits available. “The development of LEED for Neighborhood Development speaks to the breadth of what ‘green building’ means,” says Sophie Lambert, the Director of LEED ND, on the USGBC web site. “What was once a rating system solely designed for commercial construction is now evolving beyond single buildings to address development at the neighborhood scale.”

LEED Neighborhood Development (ND) is in some respects as different from LEED 2009 as it is similar. It has a very different construct including four sections instead of six (Smart Locations & Linkages (SLL); Neighborhood Pattern & Design (NPD); Green Infrastructure & Buildings (GIB); and Innovation & Design Process). The system was

---

The Bottling Building (Building 29 – Block 3) of the Brewery Project in Downtown Milwaukee, Wisconsin, was built in 1910 and is eligible for federal and state historic rehabilitation tax credits. The Brewery Project is registered by the USGBC as a LEED-ND Pilot Project. Photo courtesy of The Brewery Project LLC.



developed by a working group of three organizations—USGBC, Natural Resources Defense Council (representing the Smart Growth community), and Congress for New Urbanism—and focuses on infrastructure and the public realm, with buildings as just one component. But like LEED 2009, LEED-ND has the standard four recognition levels—certified, silver, gold, and platinum

LEED ND can be used on a single building, a Main Street, a community, or even as a tool to retrofit suburbia. During the pilot stage, 239 projects were registered in 39 states and 6 countries, which has allowed for the identification of many conflicts and issues, some of which highlighted points of tension between preservation goals and LEED-ND. The National Trust for Historic Preservation advised the staff at USGBC on the final edits to LEED ND, and some of the biggest changes to the final version of LEED ND involve historic preservation and existing buildings.

There have been a number of major structural changes to LEED ND since the pilot version came out. Historic preservation values are particularly addressed in NPD Credit 1 – Walkable Streets and GIB Credits 4 – Existing Building Reuse & 5 – Historic Building Preservation & Reuse. The strongest part of the revisions is the better alignment of terminology, made in order to best utilize the agreed-upon and legal terminology and concepts as established in the National Historic Preservation Act, and adopted and implemented by states and local jurisdictions across the country. The Secretary of the Interior’s Standards for the Treatment of Historic Properties and Section 106, for example, are all referenced.

### ***NPD Prerequisite 1 – Walkable Streets***

The concept behind walkable streets is a sound neighborhood design element. The major goal of this section is to promote walking, bicycling and transportation efficiency. This prerequisite, as well as the related Credit 1, provide guidelines for this section. The prerequisite credit does provide for an exemption for historic districts if their historic design does not follow these guidelines.

Projects located in a designated historic district subject to review by a local historic preservation entity are exempt . . . if approval is

not granted for compliance. Projects located in historic districts listed in or eligible for listing in a State Register or the National Register or designated as National Historic Landmarks, that are subject to review by a State Historic Preservation Office (SHPO) or the National Park Service, are [also] exempt . . . if approval is not granted for compliance.

This credit now acknowledges that sometimes a key feature of a historic district could potentially be in conflict with current urban planning concepts of what is “good and walkable” but that for a historic district the sense of place can outweigh the urban planning precept.

### ***Green Infrastructure & Building Credits 4 & 5: Existing Building Reuse & Historic Building Preservation & Reuse***

The language in the current draft has cut the points for these credits to a total of two from an original draft version of four; nevertheless, these credits represent a much stronger recognition of historic preservation laws and concepts than has heretofore existed in the pilot. The pilot version gave one point for keeping or reusing a historic building, and little of the recognized preservation terminology was used. Most significantly, there is a prerequisite that invalidates using either of these points if a historic building is demolished.

To achieve this credit, no historic building or portion of a historic building may be demolished as part of the project. An exception is granted only in instances where approval for such action is provided by the appropriate review body.

It is worth noting, however, that it would still be possible with this current construction, to demolish a historic building and simply not opt for either of these two credits, as it is only a prerequisite for these two credits, and not for LEED ND on the whole.

The next revision of LEED, both 2009 and ND, is targeted for 2011, and will change some of the credits, removing some and adding others. The Sustainable Preservation Coalition will be working with USGBC to further incorporate more social and cultural metrics into the next LEED revision.

## CONCLUSION

In his 2008 speech at Greenbuild, National Trust President Richard Moe noted that the changes to LEED in recent months are “great steps forward,” but he cautioned that there is more work to be done. “The science that informs the USGBC’s standards and, indeed, all ratings systems is still evolving. We must ensure that this science is accurate, especially when it comes to understanding the embodied energy and embodied carbon in buildings, and the life cycles of buildings and materials.”

Indeed, the ability of the USGBC to make continual improvements to LEED will hinge on the genera-

tion of better data, the development of more accurate life cycle modeling, and a willingness to incorporate social and cultural values into the system. While these are significant challenges, Moe notes that, “the preservation and green building communities share a common goal: securing a viable, sustainable, meaningful future for our children and the generations that will follow them.” This common ground provides a foundation for further cooperation between the preservation and green building fields that will undoubtedly produce better standards that reflect the important building lessons we have learned over the millennia, and the value of our heritage resources.