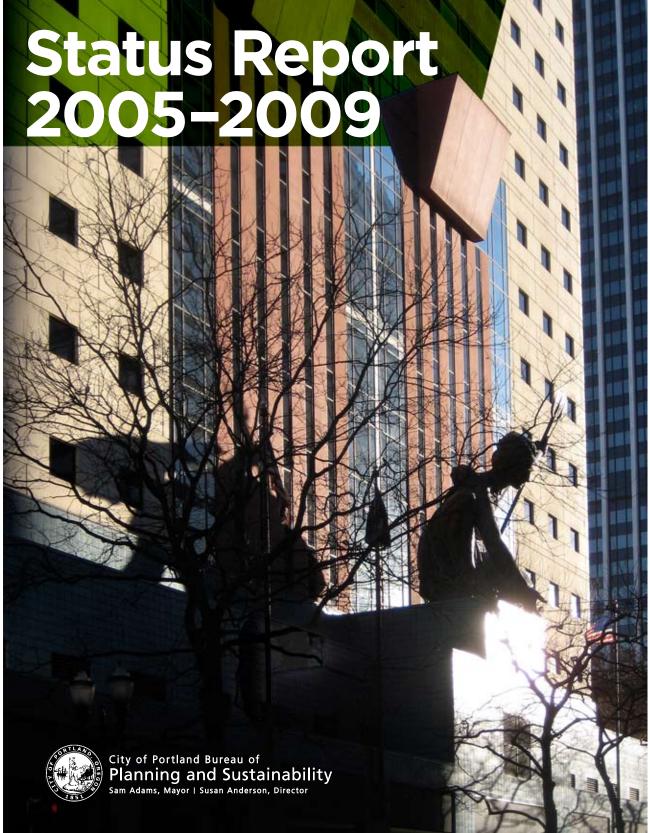
# CITY OF PORTLAND GREEN BUILDING POLICY







#### INTRODUCTION

his status report examines the City of Portland's Green Building Policy from 2005 to April 2009, capturing activities since the last Council report in 2005. This report features an overview of policy developments and updates on key Policy components. To avoid duplication, this report does not cover other important sustainability initiatives, such as solar installations, green streets or purchasing.

# **GREEN BUILDING POLICY BACKGROUND**

n January 2001, the City of Portland adopted the Green Building Policy (Policy) to require resource efficient design, construction and operational practices for City-owned facilities and publicly funded development. The Policy references the US Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system, a design and evaluation tool that is widely used in the marketplace. The Policy was updated in 2005, increasing performance thresholds and adding expectations around energy use, stormwater management, water conservation and construction waste recycling. The 2005 Policy also outlined bureau responsibilities and created requirements for interior alterations, operations and maintenance practices, ecoroof coverage and infrastructure projects. Figure 1 below illustrates how key policy components have evolved over the past eight years.

Policy application	2001	2005	2009 recommendation
NEW CONSTRUCTION	LEED NC Certified	LEED NC Gold + additional requirements	LEED NC Gold + additional requirements
EXISTING BUILDINGS	No specific requirements	LEED EB Silver	LEED EBOM Silver + additional requirements
TENANT IMPROVEMENTS	Use BPS' Tenant Improvement Guide	Use BPS' <i>Tenant Improvement Guide</i> and/or LEED CI Silver	Use BPS' Tenant Improvement Guide and/or LEED CI Silver
ROOFS	No requirements	Ecoroof coverage and/ or Energy Star-rated roofing on new and replacement roofs	Ecoroof coverage and/or Energy Star-rated roofing on new and replacement roofs
OPERATIONS AND MAINTENANCE	Apply Portland Green Building Operations and Maintenance Guide (not developed)	OMF to create Operations and Maintenance guide	All bureaus to use LEED EBOM principles to guide asset management and operation and maintenance
PORTLAND DEVELOPMENT COMMISSION-FUNDED PROJECTS	Projects receiving grants and loans to follow Portland LEED	Projects receiving grants and loans to achieve LEED Silver	Projects receiving grants and loans to meet proposed High Performance Green Building Policy waiver
AFFORDABLE HOUSING PROJECTS	Use Greening Portland's Affordable Housing Guidelines	Use Greening Portland's Affordable Housing Guidelines	Separate PDC-led committee established to create new guidelines
PURCHASING	Use evaluation guidelines for architecture and engineering selection	Use green architecture and engineer template	Use green architecture and engineer template and incorporate green building language in all related contracts

Figure 1: City of Portland Green Building Policy

Web links to 2001 and 2005 policy documents can be found in Attachment A.

# POLICY PERFORMANCE TO DATE

taff awareness of the Green Building Policy and its directives has improved over the last three years. The Bureau of Planning and Sustainability (BPS) continues to offer technical assistance to City capital improvement projects ranging from answering technical questions to long-term involvement on advisory committees. Although understanding of and commitment to the Policy has increased, there are still opportunities to improve awareness and adoption of the Policy directives.





Two of the City's LEED buildings include Portland Parks and Recreation's East Portland Community Center (left) and University Park Community Center. Photo credit: Gary Wilson Photo/Graphic

# **New Construction Projects**

Since 2005, three significant City building projects have been constructed, and all three buildings have been designed and constructed to meet the US Green Building Council's (USGBC) Leadership in Energy Environmental Design (LEED) certification program. The first project is Portland Parks and Recreation's (PPR) swimming pool addition to East Portland Community Center (EPCC). EPCC features advanced energy and water efficiency measures, an approximately 90 kW solar electric array and enhanced jobsite waste prevention and recycling. EPCC is scheduled to achieve LEED NC Platinum certification by fall 2009.

The second project slated for LEED NC Silver or Gold certification is the Water Bureau's Meter Shop. This project features solar electric and thermal systems, highly efficient lighting and heating equipment and a recirculation system that reduce water usage for testing meters by 50%. LEED certification is expected by fall 2009.

The third construction project on track to earn LEED NC certification is the University Park remodel and expansion, built by PPR. Although this project will not reach LEED Gold, its achievement is notable because its timeframe and financing preceded adoption of the Policy. Its green highlights include the use of low VOC finishes, a high rate of jobsite recycling and the use of water and energy conservation measures. University Park is still completing its LEED documentation and expects certification by fall 2009.

As the three projects illustrate, the new construction provision of the Policy has successfully improved the environmental performance of City-owned buildings. Bureaus have demonstrated that they can budget, design and build new LEED buildings in a manner that complies and in some cases, surpasses the intent of the policy.



#### **Tenant Improvements**

Numerous office and building renovation projects have used BPS' Tenant Improvement (TI) Guide, a handbook of best practices for improving the environmental performance of smaller commercial spaces. Project examples include extensive upgrades to Fire Station 1, the CityShape Fitness Center remodel in the Portland Building and Fire Stations 15, 24 and 30. No projects have pursued certification under the LEED for Commercial Interiors rating system, mainly because of scope of work or budget constraints.





The City has over 27,315 square feet of ecoroofs on its buildings, including this one on The Portland Building.

#### **Ecoroofs**

The 2005 Policy update included the addition of ecoroof requirements for new and replacement roof projects. Since then, there have been 13 ecoroofs installed on City facilities, totaling 27,315 square feet. There are designs for six more ecoroofs on City structures that would double that square footage, including one for City Hall. Although this is an impressive accomplishment, BES has found that opportunities are missed to integrate ecoroofs on all new and existing City-owned structures. BES submitted a letter to OMF in 2008 explaining the ecoroof component of the Green Building Policy and resources available to bureaus. As a result, progress has been made in the broader scale adoption of the Policy's ecoroof provision. Barriers to further adoption include the need for more education about the benefits of ecoroofs, resolving structural and historic compatibility issues and the availability of additional funding for incremental costs associated with installation. BES will continue to work on providing training and technical assistance to bureaus considering ecoroof installations.

# Other Projects

Many capital improvement projects, including site and infrastructure projects, also employed sustainable strategies that reflect the City's leadership and innovation in green building. One notable example is the use of sustainable site and construction practices at PPR's Gabriel Skatepark, one of the first green skateparks in the country. There are also several projects currently in development, such as Water's Powell Butte Reservoir and PPR's South Waterfront Park that intend to incorporate sustainable site and infrastructure development strategies.



# Green RFP Language

The Bureau of Purchases "Green PTE" contract for LEED-obligated new construction and major retrofit projects has been used continually and was updated in 2008 to reflect minor changes in process and resources. Purchases also recently hosted BPS for a training to learn more about how contracts can include language to improve jobsite recycling rates and reflect other green building requirements. BPS and Purchases will continue to work together to incorporate contract language and training that reflects the Policy.



BPS and Purchases offer training to City staff on topics that include green building, LEED and the City's Green Building Policy.

# **Staff Training**

Over the past three years, BPS conducted several trainings for City Project Managers that explained the requirements of the Green Building Policy, the tools and resources available to City staff, project examples and an overview of the LEED rating system. BPS recognizes the need to provide ongoing training to staff working on capital improvement projects and is working with Purchases to provide six classes in 2009. BPS has also made an effort to increase staff awareness of outside training opportunities including classes on energy efficiency, solar installations and LEED.

Since 2005 there has also been an increase in the number of City staff that have studied for and passed the LEED Accredited Professional (AP) exam. In 2005, there were three LEED APs on City staff. As of December 2008, there are at least ten. See Attachment C for a link to the list.

#### Other Initiatives

Several of the initiatives outlined in the 2005 policy are no longer active or have had only modest impact.

The inter-bureau Green Building Advisory Team (GBAT) that was designed to serve as a technical committee to assist City project teams with Policy implementation lost its relevance and was disbanded. In the 2009 Policy update (see section VI.), the role of GBAT will be revised to serve as an optional advisory team made up of staff from relevant bureaus. The goal is for GBAT to serve as a resource to City projects seeking advice, rather than as a gatekeeper of Policy compliance.



# LEED Existing Building (EB, now EBOM) Certification

The intent of the LEED EB requirement for City-owned facilities was to identify opportunities to improve energy, water and operational efficiencies that resulted in real savings and improved worker health. In addition to requirements for water and energy efficiency, LEED EBOM includes credits that focus on occupant behavior, such as commute options, garbage generation habits and cleaning practices. LEED EBOM requires that operation and maintenance practices are tracked over a period of time and that improvements are demonstrated in underperforming areas.

To date, no City facilities have been LEED EB certified. OMF and BPS met in February 2009 to identify opportunities to pursue LEED EBOM for the Portland Building. The two bureaus agreed to work together to hire an intern to perform a gap assessment that illustrates which LEED EBOM points the Portland Building already achieves and those that can be achieved through future capital investments and policy changes. This assessment is expected to be completed by the end of 2009.

# **Operation and Maintenance Guidelines**

The 2005 Policy directed OMF to create operation and maintenance guidelines that reflected LEED EBOM for the City and its contractors to use. OMF created draft guidelines, some of which remain in use today. Based on Council's decision not to fund an initial LEED EBOM project in 2006, OMF did not pursue further refinements or adoption of the guidelines. The proposed Policy calls for all City bureaus use LEED EBOM to guide operation and maintenance practices to support future LEED EBOM certification. To be successful, this effort requires ongoing staff education and coordination by a designated bureau.

#### **BDS and BPS Coordination**

As part of an effort to improve development conditions for green building projects in Portland, the 2005 Policy directed BPS and BDS to optimize the review and inspection process for high performance buildings. Several resulting actions include the extension of Process Management for all public and private LEED Silver projects, and the evaluation of building and zoning codes that may restrict green building in Portland. In addition, BDS created the Alternative Technology Advisory Committee to review sustainable technologies against building code requirements to help applicants utilize innovative products and construction methods. BDS and BPS continue to coordinate efforts related to green building activities, including partnering on training, marketing and code amendment initiatives.

# Portland Development Commission's (PDC) Affordable Housing

As explained in the report, "Green Building and Sustainability Accomplishments 2003-2007," PDC has complied with the relevant criteria that appear in the Green Building Policy. Since 2001, PDC has provided funding, land and/or technical assistance for 19 green building projects that achieved LEED certification. This represents 100% of the buildings required to achieve certification and includes two PDC-supported affordable housing projects, The Watershed at Hillsdale and The Jeffrey.

In Resolution No. 36310 (2005), City Council tasked PDC with updating the *City's Greening Affordable Housing Guidelines*. In 2007, PDC convened a coalition of nine affordable housing developers and City staff to assess Portland's affordable housing needs, examine trends and develop new policy recommendations.

After 14 months of deliberations, the Clean and Healthy Affordable Housing Coalition reached a general consensus on the standards and basic requirements of the policy. There are three primary recommendations: 1) require projects to achieve one of three third-party green building certifications, depending on the size of the project, 2) require projects to achieve a minimum energy efficiency of 25 percent above the

Oregon Code (or 15 percent in the case of the smallest projects), and 3) to achieve a minimum standard for indoor air quality, either ASHRAE 62.1 or 62.2, depending on the size of the project. Additionally, the use of composite wood that contains man-made formaldehyde would be prohibited.

PDC will continue steering the process for the time being and plans to hold a public meeting on the policy in April. The resulting affordable housing policy will now exist independently of the City's green building policy.



Recent affordable housing projects are achieving LEED, including The Watershed at Hillsdale.

#### Sustainable Infrastructure

In 2001, BES, Water, Transportation and BPS formed a Sustainable Infrastructure Team (SIT) to evaluate opportunities to reduce the environmental impact of infrastructure and site development. The SIT concluded that a sustainability rating system like LEED is not well suited as a decision making tool for infrastructure projects. The SIT decided that the next step would be to establish guiding principles to serve as the basis for any system for sustainable infrastructure adopted by the City. Staff changes resulted in the disbanding of the SIT before the guidelines could be established. Since 2005, there has been no formalized activity to continue the work of the SIT. However, BES, Water and Transportation continue to pursue "sustainable infrastructure" activities including the Green Street Initiative, LED traffic signal replacements and low-impact site development. Regrouping of the SIT would require budget allocations and higher-level staff involvement to ensure its success. The current Policy proposal does not extend the SIT provision, but instead suggests that bureaus use best management practices to guide site and infrastructure improvements.



# INTEGRATION WITH HIGH PERFORMANCE GREEN BUILDING POLICY

nder the proposed community-wide High Performance Green Building Policy, new city-owned buildings that meet the City's Green Building Policy requirements would most likely qualify for a reward payment. If adopted, the policy would also require existing city-owned buildings greater than 20,000 square feet to establish Energy Performance Scores using EPA's Portfolio Manager software. These performance scores will be a valuable tool for the City to prioritize energy efficiency upgrades and identify which buildings are likely to be eligible for LEED EBOM certification.

# FINANCIAL IMPACT

ased on numerous case studies that included both public and private sector projects, the average incremental cost of achieving certified green buildings is minimal. A 2007 report completed by Davis Langdon, an international construction consulting firm, found that "there is no significant difference in average costs for green buildings as compared to non-green buildings." Based on qualitative feedback from project managers, the City incurred additional costs for designing, registering and certifying its three new LEED buildings. This reflects that the City is relatively new at developing LEED projects, the unique programming of these buildings and additional design work needed to meet the City's performance requirements. However, when compared to the long-term energy, water and stormwater management savings, the investment for a municipal agency that owns and operates its buildings for many years is prudent and responsible.

For existing buildings, the costs associated with LEED EBOM vary significantly depending on the condition of systems, occupant patterns and the status of operation and maintenance policies. A 2005 study by the USGBC details three LEED EBOM projects and found that an initial investment of \$1.01 per square foot yielded an annual net savings of \$0.52 per square foot, a two year payback.<sup>2</sup> Assuming an additional investment of approximately \$50,000 to complete the analysis, certification and documentation process, LEED EBOM still shows promising return on investment.

In 2008, a multi-bureau workgroup identified that the lack of financial and staff resources are the main barriers to the widespread adoption of the Policy. Ideas for providing additional resources include creating a revolving fund to cover upfront investments in more efficient equipment, bonding green improvements to City facilities and/or the broader use of grants and tax incentives. Additionally, the group suggested that bureaus work with BPS to identify potential efficiency upgrades and include the cost of improvements in CIP projections.

<sup>1</sup> Cost of Green Revisited, Davis Langdon, 2007

<sup>2</sup> LEED EB How to Guide, U.S. Green Building Council, 2005



#### POLICY REVISION PROCESS

n August 2008, Mayor Potter and Commissioner Saltzman asked BPS to convene bureau representatives to review the City's Green Building Policy and make recommendations that reflect industry advancements. A workgroup comprised of staff from the bureaus of Planning and Sustainability, Water, Management and Finance, Environmental Services, Parks, Transportation, Purchases, Development Services and Fire met seven times over several months.

The workgroup reviewed the 2005 version of the policy and discussed opportunities to clarify language and enhance performance thresholds. The effort also served to educate bureau staff about the Policy and resulted in an improved understanding and commitment to its requirements.

The workgroup proposes the following major Policy changes:

- Increase jobsite recycling requirements from 75% to 85% to reflect adopted Portland Recycles! Plan;
- Add language to minimize waste generation;
- Add language to avoid use of potable water for building-related landscaping, except for the first two years of plant establishment;
- Clarify Policy application to occupied facilities where appropriate;
- Direct projects involving historic structures to consult with the Landmarks Commission before making any alterations;
- Direct City Council and bureaus to fund and staff projects at a level that allows for policy implementation;
- Further outline bureau responsibilities and roles; and
- Create an implementation guide to accompany the Policy that summarizes intent, resources and definitions.

#### CONCLUSION

ortland continues to be recognized as a world leader in green building. Jurisdictions from all over the country use Portland's green building, climate change and sustainability policies as models. Incorporating green building practices in the City's capital projects requires strong commitment from Council, bureau directors and City staff. However, this commitment will result in higher performing buildings that preserve financial and natural resources, improve worker health and advance Portland's leadership status in sustainability.

# CITY OF PORTLAND GREEN BUILDING POLICY STATUS REPORT 2005-2009



# **ATTACHMENTS**

# A. Link to 2004 Status Report

http://www.portlandonline.com/shared/cfm/image.cfm?id=112689

# B. Link to 2001 and 2005 resolutions

http://www.portlandonline.com/auditor/index.cfm?&a=54355&c=34835

# C. Link to list of LEED AP staff

http://www.portlandonline.com/osd/index.cfm?c=41701&a=228242