

## ENB-9.01 - Green Building Policy

### GREEN BUILDING POLICY

*Binding City Policy*

BCP-ENB-9.01

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#### I. Policy Statement

The City of Portland shall incorporate green building principles and practices into the design, construction, and operations of all City facilities, City-funded projects, and infrastructure projects to the fullest extent possible. Furthermore, the City will provide leadership and guidance to encourage the application of green building practices in private sector development. This policy is expected to yield long-term cost savings to the City's taxpayers due to substantial improvements in life-cycle performance and reduced life-cycle costs.

In addition, the City shall evaluate all land purchases for future development on the basis of reducing environmental impacts that include but are not limited to transit and bicycle accessibility, urban and brownfields redevelopment, solar access, on-site stormwater mitigation capacity, and vegetation and habitat restoration.

#### Background

Development and construction practices are main contributors to the depletion of natural resources and a major cause of air and water pollution, solid waste, deforestation, toxic wastes, health hazards, global warming, and other negative consequences. Buildings use one-quarter of all the world's wood harvest. Buildings consume two-fifths of all material and energy flows. Fifty-four percent of U.S. energy consumption is directly or indirectly related to buildings and their construction. Building construction and operations account for 35 percent of U.S. CO2 emissions.

As Portland grows, so does the need to create additional strategies to counter the negative impacts of rapid growth – degradation to air and water quality, natural resource depletion, and inefficient land use practices. The built environment represents a major opportunity for the City, along with local designers, engineers, developers, builders, lenders, appraisers, and other sectors of the building trades, to address local and global environmental degradation. Promoting energy and resource efficient building practices is one such strategy.

Green building practices provide the framework and tools to build in an efficient, healthy, and ecologically responsible manner. Encouraging green building practices is in the public's interest because these techniques:

- Promote Portland's energy, land use, environmental and growth-management policies.
- Conserve energy, water and other natural resources.
- Strengthen established goals related to increased density, mixed use and transit-oriented development, stormwater and erosion control; brownfield redevelopment, and increased bicycle and pedestrian access.
- Save building owners and tenants money through increased operation and maintenance efficiencies.
- Improve indoor air quality and the health, well being, and productivity of occupants.
- Help reduce public infrastructure costs related to development.

â€¢ Minimize local ecological degradation (habitat, air, soil, and water) through efficient site and building design, sustainable construction practices, and low impact building materials and operational practices.

â€¢ Keeps money in the local economy and creates new local industries and jobs.

### **Integrated Design and Life Cycle Analysis**

Successful green buildings depend on applying whole-systems strategies to rigorous life cycle analysis. Effective integrated design strategies consider and solve a variety of relevant issues simultaneously. Life cycle analysis helps assess the net present value of the design, construction, operation, maintenance, and disassembly of a facility as well as the health and productivity of its occupants. When integrated design and life cycle analysis are combined, better and more affordable building strategies emerge. Currently, design and construction budgets for City-owned facilities are established using square-foot formulas based on industry standards (facility type, land value, and other factors affecting cost prior to design). In addition, construction and operations budgeting occurs separately â€” making it difficult to invest in green building practices that may have higher upfront costs. In order to develop green building strategies that have the most beneficial economic and environmental benefits, the City needs to apply 20 to 30 year life cycle costing that integrates construction and operations and maintenance budgets into all building related capital improvements.

The Office of Management and Finance will lead a workgroup to include the Bureau of General Services, Office of Sustainable Development, Fire Bureau, Bureau of Environmental Services, Bureau of Parks and Recreation, Portland Department of Transportation, and Water Bureau to develop a life cycle analysis tool for estimating the design, construction, and operations and maintenance budgets for all City Capital Improvement Projects (CIP).

### **Why The LEED™ Rating System?**

The City of Portland Green Building Policy is tied, in part, to the Leadership in Energy and Environmental Design™ (LEED™) rating system developed by the US Green Building Council (USGBC). The USGBC was formed in 1993 to accelerate the adoption of green building practices, technologies, policies, and standards. The USGBC developed LEED™ to help stimulate green building market transformation. USGBC membership consists of more than 400 organizations including product manufacturers, environmental non profit organizations, building and design professionals, building owners, and local and state governments. The City of Portland joined the USGBC in 1999.

LEED™ is a third party certification system designed for rating new and existing commercial, institutional, and highrise residential buildings. The use of LEED™ helps to establish minimum performance levels, create a common design and construction practices framework, and allows Portland to measure its sustainable building performance relative to other jurisdictions using LEED™. In addition, USGBC provides technical rulings, training, networking and marketing to members.

### **Public Infrastructure Improvements**

City-provided public infrastructure that supports development (such as streets, sewers, and water facilities) needs to be constructed, operated and maintained in such a way that is consistent with the goals and objectives defined in this policy for City buildings. Over the years, the City's primary infrastructure bureaus have made significant changes in their construction, operation and maintenance practices in order to conserve natural resources, reduce pollution, and minimize health hazards. Where the *Portland LEED™ Green Building Rating System*

provides an established rating and certification system for new and major retrofit construction projects, there is currently no known comparable rating system for sustainability with respect to infrastructure improvements. The development of such a rating system shall be considered.

## Definitions

Green building: an integrated framework of design, construction, and operations practices that encompasses the environmental, economic, and social impacts of buildings. Green building practices recognize the interdependence of the natural and built environments and seek to minimize the use of energy, water, and other natural resources and provide a healthy, productive indoor environment.

Portland LEED™ Green Building Rating System: City performance-oriented green building certification system designed for rating new and existing commercial, institutional, and high-rise residential buildings based on the US Green Building Council's LEED™ Rating System. Guidelines will reflect existing local standards, evolving national and international guidelines, and the priorities of the City of Portland and its residents.

Integrated design: A holistic process that considers the many disparate parts of a building project, and examines the interaction between design, construction, and operations to optimize the energy and environmental performance of the project.

LEED™: Leadership in Energy and Environmental Design™ rating system is a third party certification system designed for rating new and existing commercial, institutional, and high-rise residential buildings developed by the US Green Building Council.

LEED™ Certification: Different levels of green building certification – certified, silver, gold, and platinum - are awarded based on the total credits earned in each of several categories: sustainable sites, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality.

Life-cycle: The consecutive, inter-linked stages of a product - beginning with raw materials acquisition and manufacture, the product's fabrication, construction, use, and ultimate waste management (recovery, recycle or disposal).

Life-cycle analysis: an evaluation tool that assesses the net present value of the design, construction, operation, maintenance, and disassembly of a facility as well as the health and productivity of its occupants, the costs of measurable external environmental impacts, and the cost of measurable and relevant social impacts.

Operations and maintenance: costs directly related to the operation, maintenance, repair, and management of a property and the utilities that service it. These include insurance, property taxes, utilities, maintenance, and management expenses.

Sustainable development: "Meeting the needs of the present without compromising the ability of future generations to meet their own needs" - *The World Commission on Environment and Development, The Brundland Commission, 1987*. Sustainable development seeks to balance human development, growth, and equity with ecological stewardship.

Whole-systems thinking: a process through which the interconnections of systems are actively considered, and solutions are sought to address multiple problems at the same time.

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## II. Policy Descriptions

### Policy Strategy #1

**The City of Portland shall incorporate green building practices into all facilities projects constructed, owned, managed or financed by the City.** <sup>1</sup>

### Building Types

#### 1. New Construction and Major Retrofits

New construction and major retrofit projects undertaken by the City or its contractors shall meet the "Certified" level of *Portland LEED™ Green Building Rating System*. In addition, projects are encouraged to obtain the highest Portland LEED rating (Silver, Gold, or Platinum) possible. All projects must be registered and certified by the USGBC in accordance to its rules and procedures. This applies to projects regardless of funding source or amount; applies to projects accomplished both in-house or through architect/engineer (AE) contracts (see Appendix A.); and applies to design associated with all procurement methods, including design-build. *Portland LEED™ Green Building Rating System* shall be adopted no later than February 2001.

#### Guidelines Development

**Lead:** Office of Sustainable Development - Green Building Division

**Partners:** Bureau of General Services, Bureau of Parks and Recreation, Bureau of Fire and Rescue, Bureau of Environmental Services, Water Bureau, Planning Bureau, Office of Planning and Development Review, Portland Development Commission

**Timeline:** February 2001

#### 2. Interior-Tenant Improvements (T/I)

Interior-tenant improvement projects undertaken by the City or its contractors shall apply the *Portland Interior - T/I Green Building Guidelines*. This applies to projects regardless of funding source or amount; applies to projects accomplished both in-house or through architect/engineer (A-E) contracts (see Appendix A.); and applies to design associated with all procurement methods, including design-build. *Portland Interior - T/I Green Building Guidelines* shall be adopted no later than March 2001.

#### Guidelines Development

**Lead:** Bureau of General Services

**Partners:** Office of Sustainable Development "Green Buildings Division, Bureau of Parks and Recreation, Bureau of Fire and Rescue, Bureau of Environmental Services, Water Bureau, Office of Planning and Development Review

**Timeline:** March 2001

### **3. Operations and Maintenance (O & M)**

All City operations and maintenance practices undertaken by the City or its contractors shall apply *Portland Green Building Operations and Maintenance Guidelines*. This applies to all facilities, regardless of size and contract type (e.g. either in-house or outsourcing contracts). *Portland Green Building Operations and Maintenance Guidelines* shall be adopted no later than September 2001.

#### **Guidelines Development**

**Lead:** Bureau of General Services

**Partners:** Bureau of Parks and Recreation, Bureau of Environmental Services, Bureau of Fire and Rescue, Office of Sustainable Development - Green Building Division

**Timeline:** September 2001

#### **Implementation**

The Office of Sustainable Development Green Building Division will coordinate the activities of all City agencies to develop, implement, and enforce the actions as described in the City of Portland Green Building Policy. An interbureau *Green Building Advisory Group* shall help develop and periodically update all City of Portland green building guidelines as described above. The Directors of all City bureaus shall be responsible for ensuring that the facilities they construct, manage or occupy meet these guidelines.

#### **Exemptions**

The City will develop an ***exemptions process*** to review any project where meeting the City's required green building guidelines is not appropriate. Such projects must submit documentation in accordance with exemption process to the Office of Sustainable Development for review during the project's schematic design and cost estimating.

City facility construction projects that are unoccupied or serve specialized functions (e.g. pump station, garage, storage building, etc.) are not subject to the City's green building guidelines and do not need to go through the exemption process.

All exempt projects must still incorporate and document appropriate green building measures to the maximum extent practicable. The exemption process shall be developed by the Office of Sustainable Development no later than March 2001.

Exemption criteria will address conflicts related to project size, siting, building and zoning regulations, city policies, USGBC certification, and project costs (based on life cycle analysis).

#### **Exception Criteria Development**

**Lead:** Office of Sustainable Development - Green Building Division

**Partners:** Bureau of General Services, Bureau of Parks and Recreation, Bureau of Fire and Rescue, Bureau of Environmental Services, Water Bureau, Planning Bureau, Office of Planning and Development Review

**Timeline:** March 2001

#### **Evaluation**

The Office of Management and Finance and the Portland Development Commission will work with the Office of Sustainable Development Green Building Division to collect buildings data and issue a report to City Council reviewing the City's progress in meeting the City of Portland Green Building Policy as part of the City budget review process.

## **Policy Strategy #2**

**The Portland Development Commission (PDC) shall adopt *Portland LEED Green Building Rating System*, City of Portland Green Building Policy goals and incorporate green building practices into each of its ongoing and future program areas.**

### **Description**

For all PDC program areas - including nine current urban renewal areas and development loan and grant fund programs - PDC shall work with stakeholders to promote green building practices and shall adopt the *Portland LEED™ Green Building Rating System* by September 30, 2001. Projects and program areas shall adhere to these standards unless identified as exceptions. The PDC Board shall approve exemption criteria for such projects or areas by September 30, 2001. Commission staff shall work with staff from the Office of Sustainable Development to develop strategies and tools for promoting green building techniques in Commission program areas. Standards adopted in each program area shall apply to projects accomplished both in-house and through architect/engineer (AE) contracts (see Appendix A.); and shall apply to design associated with all procurement methods, including design-build. Where life-cycle cost analysis indicates that energy and resource-efficient practices, materials, and equipment are cost effective, project managers will be encouraged to employ such practices.

### **Affordable Housing**

In consultation with the Office of Sustainable Development's Green Building Division, PDC shall issue mandatory *Affordable Housing Green Building Guidelines* to be considered in its evaluation of requests for proposals and developer negotiations for all affordable housing projects receiving PDC funding.

## **Policy Strategy #3**

**The construction, operation, and maintenance of public infrastructure that serves building development shall be examined in order to determine the opportunity and need for a sustainability rating system for infrastructure similar to *Portland LEED™ Green Building Rating System*.**

### **Description**

Initially, each of the City's primary infrastructure bureaus shall document its previous and ongoing efforts to improve practices that minimize the use of energy, water, and other natural resources and provide a healthy, productive environment. Opportunities for additional changes in construction, operation, and maintenance practices shall be reviewed. The primary infrastructure bureaus shall work with the Office of Sustainable Development to determine the need for a sustainability rating system and/or the development of a set of guidelines that would provide for green practices for infrastructure improvements. A report to Council shall be provided regarding these findings.

## **Report Development**

**Lead:** Office of Transportation

**Partners:** Bureau of Environmental Services, Water Bureau, Office of Sustainable Development

**Timeline:** December 2001

## **Policy Strategy #4**

**The City shall promote the voluntary application of the Green Building Guidelines in private sector building design, construction, and operations.**

### **Implementation**

The Office of Sustainable Development's Green Building Division will facilitate the adoption of green building practices in the private sector by:

- a) assembling and providing access to technical expertise and information about green building in the residential, commercial, and institutional building sectors;
- b) resolving code and other regulatory conflicts with green building practices;
- c) conducting workshops and training targeted at specific building-industry sectors;
- d) developing building type specific, green building resource guides; and
- e) expand market demand by educating Portland area residents and businesses.

## **Appendix A. Suggested Evaluation Factors for Determining A-E's Knowledge and Experience in Green Building Design**

• Preference should be given to A-E design teams with an in-house LEED Accredited Professional after the accreditation is available.

• A-Es should explain their expertise with environmentally responsible or sustainable facility design, and their specific expertise in applying "Integrated Design" concepts and methodologies.

• In their application, the A-E should discuss opportunities for integrated design within team disciplines and how to effectively execute within industry standards. For example, firms that specify daylighting or energy efficient lighting but don't incorporate energy efficient building "skins" (exteriors) or mechanical systems have not accomplished "Integrated Design."

• The A-E should demonstrate experience with completed projects that use less heating and cooling energy than Oregon Energy Code.

• A-Es should indicate any projects they designed that met Portland General Electric's Earth Smart Program, Energy Star, USGBC's LEED™ (Leadership in Energy and Environmental Design), BREEAM (Building Research Establishment Environmental Assessment Method) or another green building rating system requirements.

• The A-E should demonstrate knowledge of the EPA Comprehensive Procurement Guidelines for recycled-content building materials or other industry sources and have written specifications requiring the use of recycled-content materials. If the A-E has developed a database of suppliers, extra credit should be given in recognition of the resources required to research the possible materials, determine their technical feasibility, and compare their costs with virgin-material products.

• The A-E should demonstrate experience using environmental life-cycle cost analysis techniques to select building materials and equipment that minimize environmental impacts throughout their life cycle (especially maintenance and ultimate disposal).

• The A-E's submittal should provide a list of client references for green building.

• The A-E's submittal should include a résumé of the Architect/Engineer who will be

in charge of this project. Include the person's experience with green building projects, including whether or not they are a LEED Accredited Professional.

The A-E's green design experience should either reside within the firm or be accommodated by means of a consultant with whom the A-E has had extensive sustainable design experience on previous projects.

The A-E's submittal should detail a sample sustainable project previously designed by the A-E. This information may include size of project and measures taken for:

1. Site planning measures that are sensitive to the natural environment.
2. Maximize building orientation for energy efficiency.
3. Effective use of natural daylighting and ventilation.
4. Strategies used to minimize stormwater runoff.
5. Strategies used to enhance energy conservation and efficiency.
6. Effective use of renewable energy resources.
7. Reduction or elimination of toxic and harmful substances within buildings and their surrounding environments.
8. Improvements to interior and exterior environments leading to increased productivity and better health.
9. Efficiency in resource and materials utilization, especially water conservation techniques.
10. Selection of materials and products based on their life-cycle environmental impacts and use of materials and products with recycled content.
11. Extensive recycling of construction waste and building materials after demolition.
12. Reduction in harmful waste products produced during construction.
13. Facility maintenance and operational practices that reduce or eliminate harmful effects on people and the natural environment during building occupancy.
14. Specification documentation illustrating communication of environmental design goals and requirements to contractors, subcontractors, suppliers and on-site workers.

<sup>1</sup> This policy shall not apply to projects funded prior to the adoption of this policy. However, these projects shall still implement green building strategies to the maximum extent practicable.

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## HISTORY

Resolution No. 35956.

Adopted by City Council January 10, 2001.

Filed for inclusion in PPD May 13, 2004.