

BEFORE THE BOARD OF COUNTY COMMISSIONERS  
FOR MULTNOMAH COUNTY, OREGON

**RESOLUTION NO. 04-178**

**Adopting High Performance Green Building Policy Recommendations for Multnomah County**

**The Multnomah County Board of Commissioners Finds:**

- a. Recently completed new construction projects by Multnomah County, including the North Portland Health Clinic, Hillsdale Library and Wapato Jail, have all successfully incorporated high performance green building features – reducing future energy and water costs; creating healthier indoor environments; and optimizing resource use.
- b. High performance green building practices were utilized for these projects due to reports showing that buildings:
  - Are energy intensive – 65% of total U.S. electricity consumption is by residential and commercial buildings;
  - Are resource intensive – buildings account for 40% of all raw materials used globally;
  - Contribute to climate change – 55% of greenhouse gas emissions in Multnomah County is from buildings;
  - Produce waste – 26% of this region's waste is from construction and demolition of buildings;
  - Have human health impacts – the U.S. Environmental Protection Agency ranks indoor air quality as one of the top five environmental risks to public health, with indoor contamination levels as much as 25 times higher than outdoors;
  - Cause employee productivity losses – indoor environmental conditions can have a measurable impact in worker performance; and
  - Are costly – traditional construction methods are more expensive in the long term when energy, maintenance, and employee costs are factored in.
- c. Previous action by Multnomah County with the adoption of the Local Action Plan on Global Warming (Resolution 01-052), established a goal for Multnomah County to "Develop and adopt energy- and resource-efficient building standards for all County new construction and major renovation projects."
- d. In order to meet this goal, a cross-departmental County team was established including representatives from the Health Department, Library Department, Sheriff's Office, Commission District One, the Sustainability Initiative and Facilities and Property Management. With the assistance of a team of business students from Portland State University, both the cost and benefit of adopting a formal high performance green building policy was explored.

- e. Research results, based on both empirical and actual County performance data, found that the benefit of implementing high performance green building practices outweighed the cost by a factor of 10 to 1.
- f. Multnomah County is not alone in adopting high performance green building standards. Several regional government partners have successfully standardized on green building including: the City of Portland, the State of Oregon, King County, and the City of Seattle. Many other local governments and private developers are also embracing green building, with green building fast becoming the industry standard.
- g. High performance green building is a cost effective fiscal policy. With minimal up-front costs, the investment in green buildings for Multnomah County will yield far greater economic returns over the life cycle of our buildings.

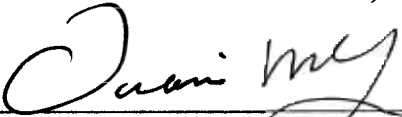
**The Multnomah County Board of Commissioners Resolves:**

- 1. The Board adopts the policy recommendations contained in Section VI of the High Performance Green Building Policy document dated November 3, 2004, to utilize the U.S. Green Building Council's "Leadership in Energy and Environmental Design" criteria in future County building construction projects.
- 2. Facilities and Property Management is directed to develop administrative procedures to implement this policy.

ADOPTED this 2nd day of December 2004.



BOARD OF COUNTY COMMISSIONERS  
FOR MULTNOMAH COUNTY, OREGON

  
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Diane M. Linn, Chair

REVIEWED:

AGNES SOWLE, COUNTY ATTORNEY  
FOR MULTNOMAH COUNTY, OREGON

By   
\_\_\_\_\_  
Matthew O. Ryan, Assistant County Attorney

# Multnomah County High Performance Green Building Policy

November 3, 2004

*Prepared by: Amy Joslin, Sustainability Manager, with the guidance and input of the policy workgroup members.*

## **Policy Workgroup Members:**

Rob Bennett, G-Rated Program Manager for the City of Portland  
Carol Ford, Deputy Director Health Department  
Mike Harrington, Library Facilities Manager  
Greg Herlean, Contracts Procurement Manager, Facilities  
Gail Hochhalter, Mechanical Project Manager, Facilities  
Clark Jurgemeyer, Project Manager, Facilities  
John Lindenthal, Manager Capital Improvement Program, Facilities  
Mike Meinecke, Energy Conservation Specialist, Facilities  
Bob Nilsen, Project Manager, Sheriff Office  
Matthew Lashua, Office of Commissioner Maria Rojo de Steffey  
Jon Schrotzberger, Maintenance & Engineering Manager, Facilities  
Steve Wright, Administrative Analyst, Sheriff Office  
Wanda Yantis, Deputy Director, Facilities

## **.. Executive Summary**

Building construction practices deplete natural resources and are a major cause of air and water pollution, solid waste, deforestation, toxic wastes, health hazards, global warming, and other negative consequences. In 2001 the Board of Commissioners for Multnomah County adopted a Local Action Plan on Global Warming, including a specific action to “develop and adopt energy- and resource-efficient building standards for all County new construction and major renovation.” Development of a policy to adopt high performance green building (HPGB) practices is a way for Multnomah County to address the negative impacts of building construction practices as well as to meet specific actions called for in the Local Action Plan on Global Warming. HPGB refers to practices that increase the efficiency with which buildings and their sites use energy, water, and materials, and reduce building impacts on human health and the environment. A cross-departmental Policy Workgroup was convened to develop a HPGB policy. Its mission was to develop high performance, energy and resource-efficient building standards for all Multnomah County building construction projects. After considering life cycle costs and benefits, operational integrity, flexibility, standardization, simplicity and practicality, the Policy Workgroup reached consensus on five recommendations:

1. High performance green building practices shall be utilized for all Multnomah County building construction projects.
2. U.S. Green Building Council Leadership in Energy and Environmental Design (LEED™) criteria shall be utilized as the metric to measure successful incorporation of high performance green building features into building construction projects.
3. The highest practical level of LEED™ criteria shall be achieved once life cycle costs are considered on a project-by-project basis.
4. The High Performance Green Building Policy shall be used as a guideline rather than a requirement for leased facilities.
5. Periodic reporting on progress in implementing the High Performance Green Building Policy shall be performed by Facilities and Property Management (FPM) and the Sustainability Initiative together.

A key assumption of these recommendations is that HPGB measures will not negatively impact the operations or services provided by Multnomah County departments or offices, and that program delivery requirements (for example public safety, security, public health, and accreditations) are the first priority. Policy implementation

anticipates FPM will need to train staff on LEED™ criteria as well as develop appropriate administrative procedures while operating within existing resources.

What is LEED™ and why is the Policy Workgroup recommending it? LEED™ is a voluntary, market-driven third party certification system based on existing, proven technology and designed for rating new and existing commercial, institutional, and multi-family residential buildings. LEED™ criteria are currently available for new construction with additional criteria in development for other building project types such as tenant improvements, operations and maintenance etc. Analysis performed by Portland State University students as part of their Masters in Business Administration found that the average up-front incremental cost for implementing LEED™ criteria is currently two percent. This level of expenditure typically yields life cycle savings of over ten times the initial investment. The reference section of this report includes links to their complete report, as well as a summary of other regional agencies that are using LEED™ criteria.

Many benefits can result to Multnomah County from adopting HPGB practices including:

- Lower Energy Bills
- Lower Water Bills
- Reduced Maintenance Costs
- Increased Employee Productivity
- Healthier Workspaces for Employees
- Minimized Waste
- Community Benefits
- Lower Environmental Impacts
- Reduced Dependence on Fossil Fuels

It is the conclusion of this Policy Workgroup that adopting a high performance green building policy for Multnomah County is a cost effective and sound business decision.

## **II. Mission**

To develop high performance, energy and resource-efficient building standards for all Multnomah County building construction projects.

## **III. Goals**

1. Yield cost savings to County taxpayers through reduced maintenance and operating costs.
2. Contribute to achieving goals included in the County's Local Action Plan on Global Warming.
3. Protect, conserve and enhance environmental resources while minimizing waste.
4. Provide a healthy work environment for employees, customers and the public.

## **IV. Introduction**

In April of 2001 the Board of Commissioners for Multnomah County adopted a "Local Action Plan on Global Warming" to reduce total Multnomah County emission of greenhouse gases by 10 percent from 1990 levels by the year 2010. In that plan, several goals were identified for energy efficiency in buildings, renewable energy resources, waste reduction and recycling. Government actions were identified both for the short term (2003) and long term (2010). This High Performance Green Building (HPGB) Policy intends to meet the specific action included in the Local Action Plan on Global Warming to "Develop and adopt energy- and resource-efficient building standards for all City and County new construction and major renovation projects."

The High Performance Green Building Policy recommends energy and resource efficient building practices as well as practices that contribute to employee health and productivity. The Office of the Federal Environmental Executive defines green building as "the practice of 1) increasing the efficiency with which buildings and their sites use energy, water, and materials, and 2) reducing building impacts on human health and the environment, through better siting, design, construction, operation, maintenance, and removal – the complete building life



cycle.”

High performance green building practices consider the impact of building construction on the environment. For example, the City of Portland has identified:

“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 the entire 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 thirty-five percent of U.S. CO<sub>2</sub> emissions.” *City of Portland Green Building Policy*

As a trustee of public money, Multnomah County makes investment decisions for County buildings that reflect both short term budgetary realities and long term asset values. With that in mind, the Policy Workgroup carefully analyzed and discussed the impact of alternate high performance green building policies. In addition, the policy workgroup solicited the assistance of several Masters in Business Administration (MBA) students from Portland State University. This team performed an analysis on “Building the Business Case for High Performance Green Building at Multnomah County.” As a result, this policy document provides information on the cost of high performance green building, as well as the long term benefits and justification to the County for investing in HPGB practices.

#### **V. The Business Case for High Performance Green Building**

The Policy Workgroup solicited the assistance of several Masters in Business Administration (MBA) students with Portland State University. As part of their project, these students conducted an analytical study titled “How LEED Certification Can Pay Off for Multnomah County.” The MBA study found:

“Comprehensive analysis of the financial costs and benefits of green building conducted to date find that a minimal up-front investment of about two percent of construction costs ... typically yields life cycle savings of over ten times the initial investments.” Additionally, “many green buildings with integrated design cost no more to build – or are even less costly than alternatives because resource efficient strategies often allow downsizing of more costly mechanical, electrical or structural systems. Owners of green buildings can also benefit from specialized financial and regulatory incentive programs, e.g. State of Oregon’s Business Energy Tax Credit.”

For the purpose of their study, the life of the building was assumed conservatively to be 25 years. The numerous cost benefits of HPGB described in the report include: energy, waste disposal, water, environmental, emissions, operations and maintenance. As part of the report, the MBA team also evaluated the recently completed Hillsdale Library, which aims to achieve LEED™ gold certification. Their study found:

- “The experience from the Hillsdale Library demonstrates that while there are additional costs for LEED™ certification, these costs are offset to a large degree by the Sustainable Building Business Energy Tax Credits from the Oregon Department of Energy and other financial incentive programs available in the region. When future energy savings, worker productivity and additional cost savings are factored in, the benefits of LEED™ certification far outweigh the costs.”
- Based on a net present value calculation performed by the team, the energy savings alone for the new Hillsdale Library will save over \$195,000 over a 25 year life, and will pay for approximately 71% of the incremental costs for including green building features.

The executive summary from this study is attached as Appendix 1

## **VI. High Performance Green Building Policy Recommendations**

The Policy Workgroup recommends the following:

1. *High performance green building practices shall be utilized for all Multnomah County building construction projects.*

HPGB is a cost effective and sound business decision for Multnomah County. Numerous benefits to the environment, building occupant, long term facility operation and maintenance, and the County's bottom-line can be achieved through HPGB practices.

2. *U.S. Green Building Council LEED™ criteria shall be utilized as the metric to measure successful incorporation of high performance green building features into building construction projects.*

A variety of HPGB certification systems have been developed and adopted by governmental agencies. In the Northwest region however, the two primary certification systems are PGE Earth Advantage and U.S. Green Building Council Leadership in Energy and Environmental Design (LEED™). LEED™ is the most comprehensive and widely recognized performance standard. LEED™ rating system has industry consensus and is research-based; whereas PGE's Earth Advantage program for commercial buildings has some level of future uncertainty (based upon discussions between the Policy Workgroup and PGE representatives.) Adoption of a common method of building performance evaluation ensures all levels of government and private sector are using the same set of criteria – demonstrating coordinated leadership. Around the globe, government and private organizations use high performance green building practices (see References section.) These organizations adopt standards, including certification requirements to:

- Evaluate the performance of a building against an explicit set of criteria, and
- Provide objective measurements of progress toward high performance green building goals, i.e., reduction in greenhouse gas emissions, provision of a healthy work environment, reduced operating costs, and environmental protection.

3. *The highest practical level of LEED™ criteria shall be achieved once life cycle costs are considered on a project-by-project basis.*

Flexibility is critical to the successful achievement of LEED™ criteria. In recommending LEED criteria for all building construction projects, the Policy Workgroup recognizes that certification is not possible for all projects. Therefore, no one level for LEED™ certification is recommended for County construction projects. Instead, project specific calculations for LEED™ criteria and potential certification costs and benefits should be made during the budgeting period. Based on the analysis from the MBA team, the average up-front incremental cost anticipated for incorporating LEED™ criteria, including certification, is currently two percent.

4. *The High Performance Green Building Policy shall be used as a guideline rather than a requirement for leased facilities.*

Leased facilities are occupied by Multnomah County for varying time periods, with varying landlord stipulations. Investments in HPGB practices for existing leased spaces should be evaluated based on their feasibility and return on investments for remaining lease periods. In addition, when considering new spaces for lease, including condominium agreements with other agencies, an advantage should be given to high performance green buildings over conventional buildings. This would result in lower utility bills for Multnomah County as well as healthier building spaces for our employees. By leasing HPGB spaces, Multnomah County also sends a market signal to the building community that HPGB practices are important.

5. Periodic reporting on progress in implementing the High Performance Green Building Policy shall be performed by Facilities and Property Management (FPM) and the Sustainability Initiative together. It is important that FPM prepares for incorporation of high performance green building practices in upcoming projects by conducting staff training, developing applicable procedures, and monitoring performance of green building practices. A process of continuous improvement requires on-going progress measures and feedback to update and refine implementation strategies. As experience in HPGB practices is gained, different tools and strategies will emerge to facilitate the success of meeting HPGB goals. Periodic reporting should provide quantifiable measures (i.e., energy and water savings, reduction in greenhouse gases and percentage of LEED™ credits incorporated).

## **VII. Policy Implementation**

FPM will train staff and utilize existing resources as required to successfully implement this policy. In addition to LEED™ guidelines, additional tools are available to County staff including: a “Green Guidebook for Facility Managers” developed exclusively for Multnomah County as well as “Creating a High Performance Workspace,” a City of Portland Tenant Improvement Guide.

1. All County departments and offices responsible for financing, planning, designing, developing, constructing, and managing County owned facilities and buildings are affected by this policy. County departments and offices should refer to FPM for appropriate administrative procedures to implement this high performance green building policy.
2. Project-by-project implementation of this policy is the responsibility of County Department/Office (D/O), FPM, Architect/Engineer team and the Sustainability Initiative in conjunction. The project team is responsible for evaluating the costs and benefits for implementing LEED™ criteria. Implementation of this HPGB policy shall be required to be documented in project files.
3. Project-specific justification and documentation shall be required. The criteria identified in the following section is recommended for use in development of project-specific justification for the use or non-use of specific LEED™ criteria.
4. The High Performance Green Building Policy shall not be applied retroactively to projects that have already been budgeted or are in design or construction prior to the date this policy is adopted, except where cost effective. Adding HPGB features late in the process can add costs that if not already budgeted may require cuts in other program components. However, HPGB criteria should still be evaluated and incorporated for these projects where possible and cost effective from a life cycle perspective.
5. FPM will develop the appropriate administrative procedures to implement this policy for the range of capital improvement projects impacted after this policy is approved. These recommendations do not include the detailed implementation steps required to administer this policy. Upon adoption of this policy, FPM will develop the administrative procedures and staff training needed to successfully implement high performance green building practices.

## **VIII. Criteria Used to Develop Policy Recommendations**

In developing these policy recommendations, the Policy Workgroup considered and evaluated the following criteria:

1. **Life Cycle Cost:** Long term costs are important criteria used to recommend high performance green building practices for Multnomah County. The up-front design and construction costs required for

LEED™ as well as the life cycle savings for building operations and maintenance (such as energy, water, waste, and employee productivity) were considered to provide an overall cost benefit to Multnomah County.

2. *Operational Integrity / Program delivery:* Green building measures should not negatively impact the operations or services provided by Multnomah County departments or offices occupying the facility. The primary purpose of a building is to house the operations and services of its occupants. A successful HPGB policy would enhance the primary functions of the building, rather than act as a detriment. Program delivery requirements (for example public safety, security, public health, and accreditations) may override HPGB practices.
3. *Flexibility:* Flexibility is critical for different types of operations, asset management and program requirements. Multnomah County facilities have diverse uses, ranging from jails, clinics, libraries, and offices. In addition, FPM uses different guidelines for its facility portfolio depending on current occupancy, building conditions and long-range goals for the building.
4. *Simplicity and Practicality:* Required for any policy to be effective, the HPGB Policy must be simple to understand, and practical to implement. In particular, recognizing staff shortages within FPM and elsewhere in the County, this policy had to be one that would be reasonable to achieve with existing resources.
5. *Standardization:* Standardization promotes shared opportunities and information among government agencies. Using established and recognized criteria should decrease development and implementation cost. Aligning recommendations with established policies and practices used by other government agencies may provide opportunities to share training and experience with other regional governments.
6. *Benefits:* Both cost benefits and benefits that are not as easily quantified were considered by the Policy Workgroup and are discussed below.

## **IX. Benefit of High Performance Green Building to Multnomah County**

There are many benefits to Multnomah County to adopt high performance green building practices. Just a few of these benefits are:

- **Lower Energy Bills** – Criteria for energy efficiency are a cornerstone of LEED™ certification. Included are prerequisites for minimum energy performance as well as additional credits for optimizing energy performance. The lower the energy used, the more credits a project can earn. Multnomah County's first experience applying LEED™ guidelines at the Hillsdale Library resulted in a building designed to be 20 percent more energy efficient than a building built to meet local energy codes. Actual energy bills that are beginning to come in support these savings estimates and are even exceeding design expectations at this point.
- **Lower Water Bills** – LEED™ criteria also emphasize water efficiency. Credits for water efficient landscaping, innovative wastewater technologies and water use reduction challenge project teams to design for lower water bills. For example, LEED™ credits for water conservation were achieved at Hillsdale Library by selecting native and drought-resistant plants and trees that eliminate the need for an irrigation system and have reduced need for pest control and maintenance. Stormwater from the roof was also re-routed into planted areas to hold and filter stormwater runoff. In addition, "low-flow" restroom faucets and toilets that conserve water were installed.
- **Reduced Maintenance Costs** – Application of high performance green building practices may also reduce maintenance costs in many instances. For example: improving air quality reduces the number of occupant complaints and time spent identifying and correcting air quality problems; installing low maintenance



landscaped areas reduces the dependence on water and chemical applications; and optimizing controls for building systems allows for more effective trouble-shooting and monitoring of systems by personnel.

- **Increased Employee Productivity** – Sustainable building practices can improve the productivity of workers, by making the work site a healthier and better place to work. Efficient lighting for example, can help people see better, which reduces mistakes, increases work quality, and boosts production. Optimal heating and cooling system can increase worker comfort and output. And, in a study of office worker performance and the indoor environment conducted by the California Energy Commission, better access to views consistently predicted better performance.
- **Healthier Workspaces for Employees** – High performance green buildings typically offer healthier and more satisfying work environments for tenants. Careful selection of building materials and chemicals used in a facility is particularly important. Use of less toxic materials can reduce exposure risks for employees and associated absenteeism.
- **Minimized Waste** – As construction and demolition (C&D) waste comprises a significant portion of the solid waste stream in the Portland Metro area, sustainable building design can boost recycling and recovery rates from a building project to over 90%. Currently, recycling C&D waste can offer a cost savings over tipping fees for landfill disposal of heavy, bulky waste typical of building projects. Waste minimization through high performance green building also helps to meet Portland Metro area C&D waste recycling requirements.
- **Community Benefits** – An additional benefit of high performance green building is job creation. “Public policies that encourage the local development of firms in [sustainable] industry could yield long-run benefits for workers, communities, and the entire regional economy. In particular, policies promoting the application of sustainable practices to the design, construction, and operation of public buildings could be an important part of a regional economic-development strategy.” (*Portland State University Center for Watershed and Community Health Report, Sustainable Practices, Public Buildings, and Jobs, 2001.*)
- **Lower Environmental Impacts** – Buildings leave a large environmental footprint. By incorporating high performance green building practices such as resource reuse, use of products with increased recycled content, or rapidly renewable materials, these impacts can be reduced.
- **Reduced Dependence on Fossil Fuels** – By including credits for alternative transportation, green power, and energy efficiency, LEED™ can aid in a transition to a renewable energy economy.

## **X. Definitions**

- **High Performance Green Building** – Refers to building practices that are environmentally responsible and offer superior performance in a variety of areas, including functionality, energy and water efficiency, quality of the indoor environment, waste management and air emissions, site disturbance and storm water management, transportation options for occupants, and longevity (durability, adaptability to changing building user needs).
- **LEED™ Rating System** – LEED™ stands for Leadership in Energy and Environmental Design, and is a voluntary, consensus-based, market-driven green building rating system. It is based on existing proven technology and evaluates environmental performance from a “whole building” perspective. LEED™ is a third party certification system designed for rating new and existing commercial, institutional, and multi-family residential buildings. It contains prerequisites and credits in five categories: Sustainable Sites, Water Efficiency, Energy & Atmosphere, Materials & Resources, and Indoor Environmental Quality. There are four rating levels: Certified, Silver, Gold, and Platinum. (*City of Seattle, Sustainable Building Policy, February 2000.*)
- **Life cycle cost** – Means the amortized annual cost of a product, including capital costs, installation costs, operating costs, maintenance costs and disposal costs discounted over the lifetime of the product.

However, this definition does not include external costs (i.e., those not borne directly by the entity that owns and operates a product/service, such as environmental costs to society at large). Agencies are encouraged to consider all internal and external costs associated with a product, process, or activity throughout its entire life cycle—from raw materials acquisition to manufacture, recycling and final disposal. (*U.S. Environmental Protection Agency, [www.epa.gov/opptintr/epp/about/epptterms.htm](http://www.epa.gov/opptintr/epp/about/epptterms.htm)* )

- **Sustainable Building** – Integrates building materials and methods that promote environmental quality, economic vitality, and social benefit through the design, construction and operation of the built environment. (*City of Seattle, Sustainable Building Policy, February 2000*)

## **XI. References**

Several documents and agencies were referenced in compiling these recommendations, including:

- City of Portland and Multnomah County Local Action Plan on Global Warming, April 2002. <http://mint/dbcs/sustainability/warming/Global%20Warming%20Action%20Plan.pdf>
- Multnomah County Green Guidebook for Facility Managers [http://mint/dbcs/sustainability/green\\_bld/](http://mint/dbcs/sustainability/green_bld/)
- USGBC LEED™ Reference Manual <http://www.usgbc.org/>
- *City of Portland* – Green Building Policy [http://www.green-rated.org/resctr\\_research.asp?id=3](http://www.green-rated.org/resctr_research.asp?id=3)  
“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.”
- *State of Oregon* – Sustainability Plan for the Department of Administrative Services [http://www.sustainableoregon.net/agency/DAS\\_report.cfm](http://www.sustainableoregon.net/agency/DAS_report.cfm)  
“All state building construction and remodeling meet the equivalent of the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED™) SILVER rating.”
- *Washington State Correction* – <http://www.ga.wa.gov/eas/bcx/DOCMonroe-SOC-cx.pdf>  
adopted LEED™ standards for WA jails and corrections facilities.
- *City of Seattle* – Seattle’s Sustainable Building Policy <http://www.cityofseattle.net/sustainablebuilding/SBpolicy.htm>  
Uses the US Green Building Council LEED™ Rating System to evaluate City projects and sets a policy goal of Silver Level performance for City funded projects with over 5000 square feet of occupied space.
- *British Columbia, Canada* – <http://www.buildsmart.ca/pdfs/ASSESSMENT%20REPORT.PDF>  
selected LEED™ as a building environmental assessment method for BC because:
  - 1) LEED™ was anticipated to find more widespread adoption in North America,
  - 2) Stakeholder agencies could actively participate in its future development and evolution, and
  - 3) LEED™ enjoyed greater awareness, recognition and use by the private sector and design professionals.
- *U.S. General Services Administration*– [http://www.gsa.gov/Portal/gsa/ep/contentView.do?P=PL&contentId=8154&contentType=GSA\\_OVERVIEW](http://www.gsa.gov/Portal/gsa/ep/contentView.do?P=PL&contentId=8154&contentType=GSA_OVERVIEW)  
“Utilizes LEED™ as a goal in design criteria to help apply principles of sustainable design and development to their facilities projects. LEED™ is a consensus based market-driven rating system that can serve both as criteria and as measurement for GSA building projects. Beginning in FY 2003 all new GSA building projects must meet criteria for basic LEED™ certification.”

# How LEED Certification Can Pay Off for Multnomah County

Written by: *Josh Arnold, Eva Buder, Marci Shuman, and James Washburn*

Portland State University (School of Business Administration) prepared for Multnomah County High Performance Green Building Workgroup

Dr. Janet Hamilton - PSU Advisor

August 2004

## Executive Summary

The High Performance Green Building Policy Workgroup of Multnomah County, Oregon is determining whether or not to propose a Green Building policy as a standard for new construction in Multnomah County. The intention of this report is to provide guidance and research support on green building policy certification and standards to help the Workgroup determine what level of green building and certification standard to propose for Multnomah County. This report includes a detailed analysis of green building costs and benefits, addresses issues relevant to Multnomah County, and includes a life-cycle cost-benefit analysis of the Hillsdale county library. The report concludes with a list of three potential options for the Workgroup: Keep the baseline or Earth Advantage standard, promote LEED design and planning without LEED certification and promote LEED design and planning with LEED certification. Our recommendation is to adopt a standard based on the usage and occupancy of the building. Buildings with high levels of usage and occupancy should achieve LEED Silver or Gold Certification because the greatest cost benefit is found in these levels of LEED certification.

Multnomah County is fortunate to have the opportunity to take advantage of local and regional resources that make LEED certification as inexpensive as possible. At the time of the writing of this report, the City of Portland and the State of Oregon had the most LEED certified projects per capita in the entire country. The Multnomah County area is home to a wealth of resources that can provide technical and financial assistance to the county. A brief explanation of some of the key resources available to the county follows:

The Oregon Department of Energy issues business energy tax credits for energy efficiency measures in green buildings. The County can generate cash payments by utilizing the pass-through option. See section 3.5.3 for specific details about how this program can benefit Multnomah County.

The Energy Trust of Oregon, the Earth Advantage Program, the Oregon Department of Energy and other local and regional experts may have technical and financial assistance available to the county, including opportunities for streamlined LEED certification, grants and other assistance.

Even without these resources available, the decision to invest in LEED certified high performance green buildings is one that pays dividends over the long-term. Our research shows that the premiums for green buildings are repaid ten-fold over the life of the building through energy savings, increased worker productivity, reduced water and sewage costs, improved indoor air quality and improved operational efficiencies. Our research culled information from several recently completed professional studies addressing the same issues for other jurisdictions, such as the City of Portland, the City of Seattle, the State of Oregon and the State of California.

In addition to conducting a thorough literature review on the topics of green buildings cost benefits analyses, we also looked at the energy performance of three Multnomah County libraries. We performed a life cycle analysis

for the Hillsdale library that has applied for LEED Gold certification. The results of our analysis shows that green buildings in Multnomah County have similar costs and benefits as those in other parts of the country.

Our report identifies three options for Multnomah County's High Performance Green Building Policy: Baseline, LEED planning but no certification requirement, and LEED certification.

We conclude that LEED certification is the best investment for the county, with a focus on high occupancy and high usage buildings to take advantage of the largest benefits from LEED certification, namely the energy efficiencies and increased worker productivity. We recommend that Multnomah County adopt a baseline LEED Silver certification policy for buildings with high usage and occupancy, with a goal of LEED Gold certification (or LEED Platinum, if warranted) where the higher occupancy and usage levels are present.

We provide a series of suggestions for Multnomah County on how best to approach their decision regarding the adoption and implementation of their High Performance Green Building Policy.

Among the highlights:

- Adopt a high performance building standard using LEED Silver as a baseline certification for projects of appropriate usage and occupancy.
- Encourage project managers to plan for Gold LEED certification (or LEED Platinum) where projects of high usage and occupancy are available.
- Develop a set of metrics that are important to Multnomah County and track the performance of the Hillsdale library, as well as other LEED projects, over time.
- Utilize local and statewide technical and financial resources, such as The Energy Trust of Oregon, Portland LEED Certification and the Oregon Department of Energy, among others, to help build the market for high performance green buildings.
- Continue to assess the benefits and costs of high performance buildings as part of the high performance policy.