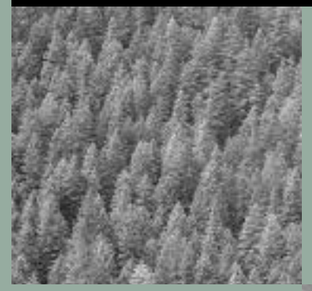
TOOL KIT

NOVEMBER 2002

State and Local Government



U.S. Green Building Council

1015 18th Street, NW, Suite 805
Washington, DC 20036

t. 202.828.7422
f. 202.828.7722

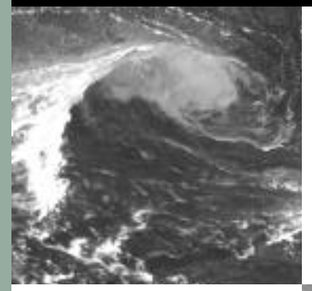
e. *info@usgbc.org*
w. *www.usgbc.org*

U.S. GREEN BUILDING COUNCIL

Cover and opposite, center:
Cambria Office Building (LEED 2.0 Gold), Pennsylvania Department of Environmental Protection,Ebensburg, PA

Cover, lower right:
625 Broadway (LEED 2.0 Silver), State of New York Office of General Services and Department of Environmental Conservation,Albany, NY

U.S. GREEN BUILDING COUNCIL



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Washington County, Oregon
Whistler Municipality, British Columbia

U.S. GREEN BUILDING COUNCIL

State and Local Government Tool Kit

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Vision for the U.S. Green Building Local Government Tool Kit

Across the country, state and local governments are developing exemplary green building programs. A range of demonstration projects and publications exist featuring voluntary or mandatory guidelines that are advancing green principles. Many of these government programs have developed tools such as legislation,revised building codes, tax incentives, and project proposal/ solicitation language. The tools created by these public sector programs are indispensable to other government entities beginning their own green building initiatives.

The purpose of the tool kit project was to gather information about existing publications and programs and make it accessible through publications and an interactive Web site. This would allow those interested in starting a green building program to access information quickly about existing programs and to see model programs and the different tools of the featured programs.

Background

The U.S. Green Building Council

The U.S. Green Building Council (USGBC) is the nation's foremost coalition of leaders from across the building industry who are working to promote buildings that are environmentally responsible, profitable, and healthy places to live and work. Breakthroughs in building science, technology and operations are now available to designers, builders, building owners and managers who want to build green and maximize both economic and environmental performance. The Council's diverse membership is leading a national consensus for producing this next generation of buildings.

Council membership is open and balanced. It is comprised of manufacturers, architects, building owners, government agencies, engineers, real estate professionals, colleges and universities, and environmental organizations. This type of representation provides a unique, integrated platform for carrying out important programs and activities.

The State and Local Government Committee

Within the U.S. Green Building Council, the State and Local Government Committee seeks to develop a forum for the exchange of information among cities, counties and states to advance the successful implementation of green building programs. Since the building design and procurement processes for both the public and private sectors are typically guided by local ordinances and state regulations, local governments can encourage green buildings by mandating green design strategies for their own facilities, as well as providing incentives and guidelines for the private sector.

Development of the Local Government Tool Kit

In its Strategic Action Plan for 2000–2005, the U.S. Green Building Council recognized the need to involve state and local governments as strategic partners in its push for global adoption of green building practices. Early direction set by various cities and regions has encouraged consumers to place a higher value on green buildings and encourage professionals to employ green practices. This has resulted in a dramatic increase in pilot projects, ordinances, incentives and guidelines across the country. Many lessons may be drawn from their successes, and the Council wants to share these examples with jurisdictions just getting started nationwide.

Surveys conducted A formal survey was conducted in January 2001 of public sector green building programs to develop an information clearinghouse on their ongoing activities. This survey, funded by Public Technology Inc., and conducted with the support of the Austin Green Builder Program, contains information on the various program goals, projects, tools, resources, participating partners, performance measurements and market transformation strategies. More recently, the Council undertook a phone survey of a number of jurisdictions that have subsequently adopted or are in the process of adopting LEED as the centerpiece of their green building program.

In making this information available for others to use, the Council hopes to reduce redundant start-up efforts of new agencies seeking to formulate green building initiatives. By providing an invaluable summary of a variety of green building programs, this "state and local government tool kit" can help empower public sector managers, architects and engineers.

Entities surveyed:

- Arlington County, Virginia
- City of Santa Monica, California
- City of New York, New York
- City of Austin, Texas
- City of San Diego, California
- City of San José, California
- City of Tucson,Arizona
- Commonwealth of Pennsylvania
- City of Seattle, Washington
- City of Scottsdale, Arizona
- State of Maryland

Office of Sustainable Development (in LEED 2.0 Gold-rated Jean Vollum Natural Capital Center), City of Portland,OR

Main Authors

Bill Reed,Natural Logic

Sandra Leibowitz, Natural Logic

Hillary Brown,New Civic Works

Mary Tucker, City of San José,CA

Mark Bundy, Maryland Department of Natural Resources

Invaluable assistance

Judith Heerwagen,Judith Heerwagen Associates, Seattle, WA

Karen J. Lewis, Environmental Law & Policy Center, Chicago, IL

Stephanie Wallace, EPA, Utah State Energy Office

The Scott Opler Foundation provided funding to initiate and support development of this tool kit.

The Urban Consortium of the Public Technology Institute provided funding for distributing the survey, compiling the results.

The staff of the Austin Energy Green Building Program,including Richard Morgan,Marc Richmond,C.J. Boggs, Lisa Nutt and Jeanine Christensen.

The staff of the USGBC

Special thanks to all those who took time from their busy work schedule to respond to the survey. Those people are, in no particular order:

Anthony Floyd,City of Scottsdale, AZ

Rob Bennett, Portland Energy Office, Portland,OR

Tom Arnold,City of San Diego, CA

Susan Munves, City of Santa Monica,CA

Lucia Athens, Seattle Public Utilities, Seattle, WA

Sego Athens, Snohomish County Department of Public Works

Stuart Simpson,State of Washington Department of General Administration

James Toothaker, State of Pennsylvania Department of the Environment

Tom Estes, California Integrated Waste Management Board

Gary Flamm,California Energy Commission

Introduction

Green building stewardship in the public sector

In the last several years, there has been a ground swell of public sector interest in building and operating green. Throughout the United States, federal,state, county, and municipal governments have begun to incorporate energy and resource-efficient principles into public works programs. With billions of square feet of space under their direct control,state and local government agencies are major consumers of design and construction-related services. Together with a proactive federal government,they are starting to transform conventional practice in the building industry into an approach that reduces the environmental impact of construction-related activities while producing meaningful savings to the taxpayer.

By championing green building practices in real estate development,the public sector is helping to set the standard for others to follow. Through operating efficiencies that reduce water, fossil fuel, and material resource use, green public and private facilities can save millions of dollars annually. By building green through the use of appropriate materials, increased daylighting,and ensuring investments in good indoor air quality, governments can foster healthy and supportive places of work,thus reducing absenteeism,employee turnover and improving worker performance. Governments can also use their purchasing power to expand the markets for green building products, including clean and renewable energy technologies.

Activities at the federal level

Under a 1999 Presidential Executive order and through programs fostered within many of its key agencies, the federal government has committed to building green. The Armed Services (Army, Navy and Air Force) and the General Services Administration (GSA), together with the Department of the Interior are using the LEED Green Building Rating System™ as the standard for renovating and constructing new facilities. At present, several dozen LEED registered projects are under design or construction.

State and local leadership

Much of the early leadership and groundbreaking work in the public arena for green building was started at the local level. Since the City of Austin,TX, founded its Green Builder Program in 1991, there has been a steady progression of initiatives from various municipalities and states around the country. Cities like Seattle, WA; Portland, OR; San Diego and Santa Monica, CA; New York, NY, and states including California, Maryland, and the Commonwealth of Pennsylvania, among many others, are contributing their successful innovations to the knowledge base of greening facilities in the public sector. Over the past several years an increasing number of green building guidelines have been published and made available on the Internet. At the annual USGBC Membership Summits, state and local leaders are sharing experiences and resources in an effort to help others get started.

State and local green building programs today are taking many forms. While early programs were frequently launched by green building champions acting within government agencies, today, more programs are taking shape in legislative initiatives given form through the political will of citizen interest groups or advocacy organizations. With increasing frequency, mayors and governors are supporting the green building movement through executive orders or ordinances that commit their jurisdictions to building green. Some initiatives are voluntary, others compulsory, and a number offer building owners and developers incentives such as a green building commercial and residential tax credits. Across the nation, these activities have been the product of bipartisan creativity and advocacy work.

USGBC advocacy for public sector innovation

Throughout the country, USGBC members continue to play an important role in championing green building policy. An important recent development has been the incorporation of the LEED Rating System into the basic framework for state and municipal policies. In several cases, government agencies or appointed task forces have been working directly with Council personnel to supplement the national LEED standards with appropriate local laws and regulations.

One of the USGBC's vital functions is developing guidelines to define sustainable building and development — in the areas of design, construction,and operations. This guideline, known as the LEED Green Building Rating System, is rapidly becoming the nation's standard for designing, constructing,and certifying sustainable buildings.

INTRODUCTION

At the annual USGBC Membership Summits, state and local leaders are sharing experiences and resources in an effort to help others get started.

USGBC members...play an important role in championing green building policy.

Getting Started

Introduction

How do green building programs start? In many cases, they have started with one person, with a vision or an ideal that building green can happen within their community. Green building programs have started with individual discussions with key policy makers and decision makers within a community. Interested staff members within a city, county or federal agency have begun to research the possibility of sustainable buildings, involved their local community in a process to recommend green building programs, and started programs that eventually can affect city and private sector facilities. There are many ways to start a green building program. The following ideas provide a broad range of opportunities for getting green building started within your own community.

First steps: Creating a context

Sustainable design and construction programs develop best in the context of broader institutional policy-making.Specifically, green building should be realized as a part of a continuum of concerns known as sustainable development,which encompasses areas such as:

- Smart growth
- Infrastructure development
- Community health
- Waste management and use of recycled materials
- Materials reuse
- Local and regional economics
- Responsible energy policies
- Public open space
- Transportation policies

At the micro scale, purchasing programs should ensure environmentally informed procurement of goods and services. Green building then can be the centerpiece of a program merging environmental stewardship with sound business principles.

Another part of the context equation is identifying existing initiatives that support the idea of an integrated sustainable building program.Often various departments support specific elements of green building that serve as a justification for a coordinated approach. For example, Seattle's Sustainable Building Policy is part of its Environmental Management Program and uses over two decades' worth of experience in energy and water conservation initiatives as a base.

Assessing your opportunities and barriers

To develop a model program for green buildings in your city or state, begin by reviewing the opportunities that exist and addressing the barriers.

Opportunities — Quantify your benefits: Many programs have won advocates or reached a crucial decision maker through a promotional campaign that shows what government can realize by going green. It is important to identify the following benefits as specifically as possible:

- Express potential green building returns in terms of measurable outcomes as a way to articulate the benefits of building green.
- Consider quantifying the types, numbers of project, and overall square footage of publicly owned and operated real estate that could benefit from improved environmental performance. Consider leased space as well in this assessment.
- Examine 4-, 5- or 10-year capital plans to evaluate the magnitude of improvements and extrapolate potential returns in terms of operating savings if a portion or all of those capital projects were to incorporate green principles at neutral cost or small cost increase.

Example: New York City attempted to quantify a range of anticipated facility savings on a square foot basis in the "Measurable Benefits"section of its *High Performance Building Guidelines*. It also tried to place a value on personnel expenditure reductions such as reduced absenteeism. It further looked to address general municipal operating savings from waste reduction, and avoided operating and capital costs of water filtration and treatment. Summarizing green building economics in this fashion helped pre-empt many of the skeptics.

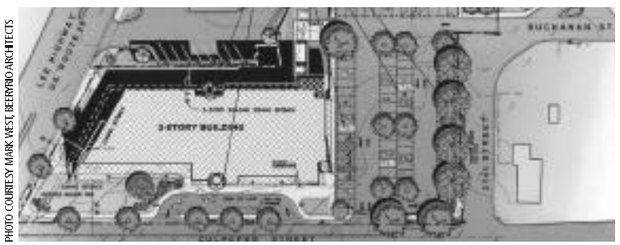


PHOTO COURTESY MARK WEST, BEERYMO ARCHITECTS

Above:Site plan for LEED registered projects in Arlington, Virginia: John M.Langston High School Continuation & Langston-Brown Community Center.

Barriers — Assess your challenges: Anticipate some of the main barriers to building green within your jurisdiction.Awareness can heighten creative ways around administrative or bureaucratic impediments. Examples of potential constraints include:

- Regulatory barriers (real or perceived) – Building green may be perceived to conflict, or may in fact conflict,with local ordinances or codes (in the case of using graywater, for example).
- There may be barriers to getting approvals for innovative material/equipment without a track record. Designers may also be risk adverse in piloting new products.
- The first cost barrier – under budgetary guidelines, the payback period is often used as the determinant for implementing many green measures regardless of other benefits. Low power prices often paid by large jurisdictions tend to extend the payback timeframe, eliminating worthwhile measures.
- No link to savings – the administrative separation between capital and expense funding impedes the project-specific financing of efficiency improvements from future operating savings. (Infrastructure savings can be made if resources and wastes are minimized at the building scale by providing the right incentives).

Best start-up practices

Citizens, public servants, and government executives who want to promote sustainable design and construction should take notice of the many exemplary approaches to "going green." Among the legislative options are green building ordinances, development incentives, and tax credit programs. Increasingly, states and municipalities are simply issuing an Executive Order, a mechanism by which a mayor or governor directly mandates the integration of sustainable building practices into all public construction programs, often including community development projects as well. The green, or sustainable building policies of several cities, such as Seattle and San José,currently only apply to city-funded projects of over 5,000 or 10,000 square feet respectively. Each city is in the process of developing sustainable guidelines for their affordable housing projects that receive federal or state pass-through funds.

Each local program must address the political, economic and environmental realities of its area. Local variations aside, there are some proven tactics that can be advanced as best practices. Review these with your resources in mind. To develop a model program for green buildings in your city or state, be sure to begin by reviewing the opportunities that exist and addressing the barriers. (See the prior section entitled Assessing your opportunities and barriers.)

Set up a working group: Given the competition for scarce resources and funding in today's bureaucracies, it is a challenge (even in a supportive political climate) to make building green a top public management priority and to gain dedicated personnel for this effort. For this and other reasons, consider establishing a working group made up of current staff — who already are (or could potentially be) champions of green building — recruited from public works and related departments. This diverse working group can be charged with developing an action plan to establish a green building policy. These working groups often prepare findings in a report and/or series of recommendations. In many cases, these action plans become the basis of an Executive Order to adopt green building principles.

Many local governments have started by convening a working group representing various departments with specific environmental,fiscal, administrative and construction expertise. Policy should be developed in the context of overlapping agency missions, by drawing on personnel from the environmental protection or natural resources division, sanitation and water and sewer departments, parks and recreation office, and public health and safety officers, among others; these experienced bureaucrats can enrich the dialogue about public works and green building policy-making.

Procurement experts, budget analysts, and other oversight agencies are also vital members of such a task force, since they pave the way for implementation. They can help modify administrative structure, and develop new capital project procedures supportive of green principles. In the end, inter-agency cooperation and creativity will yield a much more integrated policy for a jurisdiction.

Establish an advisory group: An advisory group can often enhance the work of a task force. Such a group might consist of private sector building industry representatives and other stakeholders. Involving these individuals in the development of green building policy, or including them in educational and outreach programs helps promote future acceptance of these new practices by the local building industry.

Summary: Steps to consider

- Identify internal and external champions.
- Convene working groups: a dedicated task force and an advisory group.
- Consider existing opportunities, local and regional priorities, and current activities and identify barriers to greening.
- Evaluate the strategies and plans of key decision and policy makers — determining how adoption of LEED assists him/her accomplish their agenda.
- Develop an action plan with short-term and long-term implementation items.
- Develop and adopt guidelines for the jurisdiction; or
- Adopt LEED™ as the governing standard for building construction.
- Join the U.S. Green Building Council.

An advisory group can often enhance the work of a task force.

Consider combining resources and sharing visions with other appropriate organizations.

Examples of public programs that developed an integrated approach to green building policy:

- The City of Seattle, Washington, created a Sustainable Building Action Plan, identifying opportunities, barriers, and an action plan for sustainable building. The Action Plan identified the creation of a Sustainable Building Policy as a priority item, subsequently achieved by the Green Building Team, an inter-departmental committee of technical, policy and program staff that established the sustainable building policy and program implementation.
- The Commonwealth of Pennsylvania established the Governor's Green Government Council
- New York City's informal Green Building Task Force undertook a feasibility study before launching the *High Performance Building Guidelines*
- The State of Maryland's Executive Order 01.01.2001.02, *Sustaining Maryland's Future with Clean Power, Green Buildings and Energy Efficiency*. This requires the creation of a commission to make recommendations and set criteria for constructing and maintaining energy efficient and environmentally responsible state facilities, setting goals for the purchase of "green power" and outlining a comprehensive energy conservation strategy.

Capitalizing on organizational resources

Partnering can augment efforts and create synergies, so consider combining resources and sharing visions with other appropriate organizations. Many public sector programs have looked to other governmental or non-governmental partners to assist in getting green building initiatives off the ground. Often, environmental non-profits, civic groups, and individuals have stepped forward to collaborate with agencies around the opportunity of policy development. In some cases, academic or research and development organizations have been included as participants. Municipal utilities and public benefit organizations, too, can often play a key role. Collectively, these partners provide leadership and help build a broad constituency for sustainable development. Across the board, governments have benefited by leveraging this additional energy and expertise in pursuit of a common mission.

Examples of non-profit organizations that partnered with local governments:

- Center for Maximum Potential Building Systems in Austin, Texas, provided much of the conceptual and programmatic framework for the City of Austin's Green Building Program in 1989.
- New York State's Green Building Tax Credit legislation, an initiative emanating from the Governor's Office, was largely enabled by the Natural Resources Defense Council, the Real Estate Board of New York,together with Environmental Business Associates, under the auspices of the New York State Energy Research and Development Authority.
- The State of California's partners included the Building Owners and Managers Association (BOMA).

Partnerships with utilities (municipal and investor-owned), power authorities or public benefit organizations:

- New York City was the beneficiary of NYSERDA grant monies which funded technical assistance for its Guidelines development as well as on-going consulting expertise on over a dozen pilot projects now underway.
- Seattle's major utilities, Seattle City Light (electricity) and Seattle Public Utilities (water, solid waste and drainage), are city departments. Both of these municipal utilities have served as a driving force for the development of Seattle's Sustainable Building Program,due to the dovetailing of conservation interests between the program and the utilities.

What decision makers need to know

Citizens, activists, council members, agency heads, middle managers — any motivated individual or group, public or private sector — can help create a green building program by putting information and expertise at the disposal of the crucial decision makers.

Each new program helps move our construction economy closer to the standard of sustainable design and construction.A local initiative sponsored/ undertaken in your community, city or state will help accelerate the process, by contributing to the green design momentum.Here are some basic points to make to decision makers:

Why the public sector should green its buildings

- **Good fiscal management**
  Green buildings produce operating cost savings in facilities thus saving taxpayer dollars. Relatively small first cost investments can leverage annual energy and other savings, freeing up expense money for other services.

- **Quality of life issues**
  Green buildings offer improved working environments through the use of environmentally sound materials, investments in "daylighting" and good indoor air quality. High quality, healthy work environments can improve occupant performance, and thus also reduce employee absenteeism and turnover. Such facilities thus have great potential to provide high human resource returns for initial green building capital investments.

- **Economic development potential**
  Widespread application of green practices (across a large real estate portfolio) can foster new markets for green products and clean energy technologies.

- **Environmental stewardship**
  Green buildings at a large program level produce environmental outcomes such as reducing governmental waste management costs, water filtration and treatment expenses. By giving preference to products with a good environmental track record, green buildings reduce regional air and water pollution. Cities and states that commit to energy conservation and renewable energy generation will also significantly reduce their greenhouse gas emissions.

Developing guidelines

Many jurisdictions have created their own guidelines or a green building primer as an end product of their task force planning efforts. Many excellent examples of such guidelines exist, produced by government entities or advocacy organizations that were early adopters of public green building programs, before the existence of LEED.

As a strategy to publicize methods of improving building practices and as policy instruments, such guidelines serve to educate the general public as well as actual green team participants in the benefits of sustainable design,coaching them through the new processes involved. Beginning with the rollout of the LEED rating system in March 2000, many jurisdictions have found the most efficient course of action (and least redundant) is to adopt LEED as the centerpiece of green building policy.

Adopting LEED

Currently, a large number of programs rely upon the Council's LEED Rating System and *Reference Guide* as the defining standard for building performance. Many cities, counties and state agencies are now putting it forward as the recommended design and construction tool. Still others have or shortly will be adopting LEED outright without modification as the required standard for public building performance. Some locales — especially many early adopters of green design — that had earlier developed their own voluntary or mandatory green guidelines are finding LEED a complementary tool to rate their own projects and are incorporating a certification requirement in their policy.

Benefits to State and Local Governments using LEED

- LEED provides all the benefits of a national market transformation system while affording built-in flexibility for accommodating state and local priorities, including unique circumstances. While some jurisdictions find that LEED works well "off the shelf," others prefer to create official applications within the context of their overall green building efforts. The LEED system allows both.

- LEED reduces technical and administrative uncertainties because it has been produced by the nation's leading coalition of leaders from across the building industry.

- LEED saves time and resources by providing a comprehensive set of tools for local application and use.

- LEED avoids the need to establish local certification bodies.

- Government entities that join the USGBC as members have the opportunity to shape LEED by being involved in committee work and voting on LEED ballot issues.

- LEED provides a tool for benchmarking with jurisdictions across the country. See the LEED Web site for a current list of projects registered for certification.

- LEED already has tremendous momentum due to its design elegance. The growing number of public-private partnerships with federal, state and local governments enhances LEED's credibility.

- Since the performance level of the building industry gradually improves over time, LEED evaluates performance thresholds every three to five years, saving the jurisdiction money and time to change statutes.

Many experienced green building advocates claim that a LEED Silver rating may be achieved at no additional cost to the project.

Adapting LEED

Some government programs of large scope have capitalized on the flexible architecture of LEED and sought to adapt it to their regional needs through an Application Guide. Using LEED as the foundation for green building policy, they have made certain allowable modifications to the LEED Rating System and documents to address regional or jurisdictional concerns.

It will also be limited in scope to that version unless companion versions are also produced for all of the LEED products, and all of these will also need to be kept up-to-date with LEED developments. If considering adapting LEED, however, this is not an undertaking to be taken lightly. Adapting LEED is a major commitment with long-term implications. The LEED standard is under continuous improvement, revision and extension to its scope. Any adaptation will also need to be upgraded continuously to stay consistent with the LEED version that it is based upon. Furthermore, as the LEED standard continues to develop and new variants and application guides for new sectors are produced, so a local adaptation will also need to reflect these changes.

If developing a LEED Application Guide, you need to consider very carefully how you plan to respond to the following ongoing implications:

- How will you maintain your adaptation as updates to LEED are implemented? These can occur as major new releases (version X) or as updates (version X.x).
- How will your adaptation be coordinated with existing versions of LEED and new versions under development — e.g. for New Buildings, for Core & Shell Buildings, for Commercial Interiors, for Existing Buildings, for Homes, for Communities, etc.?
- How will your adaptation be coordinated with existing and new application guides for different Horizontal market sectors — Retail, Laboratories, Schools, Health care, etc.?
- How will your adaptation accommodate updates to all of these variants?
- If you add credits or criteria or use standards that are different from LEED standards, how will you certify these aspects? USGBC will not certify these in addition to the LEED assessment and certification.

Adopting and supplementing LEED

This is the route taken by the City of Seattle. It consists of adopting LEED as-is, but then supplementing LEED with additional criteria or mandating certain criteria. The City retains the responsibility of enforcing the supplements to LEED, while USGBC continues to administer the normal LEED applications. This approach is much easier to implement across the LEED family of products and would require far less update of the supplements than wholesale local adaptation of LEED.

Incentives

There is an enduring and widespread perception in the building industry that green buildings inevitably carry a higher initial cost premium for design and construction; this has become a popular position among those most adverse to innovation and organizational change. Some bureaucrats also adhere to this view, citing it as an obstacle to greening government on a portfolio-wide basis.

There is, as yet, no statistically definitive answer in the public building sector to the first-cost issue. Many experienced green building advocates claim that a LEED Silver rating may be achieved at no additional cost to the project.Others contend that a probable range of construction cost increase is between 1 to 3% for a LEED rating, and considerably higher for gold or platinum ratings. It is safest to say that it depends entirely on the project type, intent,familiarity of the design team with LEED, level of performance being sought as well as the stage at which (and how thoroughly) LEED is integrated into the design and construction process.

In getting started, there are a number of ways to progress beyond the first-cost concern and avoid debate, by ensuring at the outset the overall adequacy of project resources for the desired performance attainment level. Considerations include:

- Adjusting total project budgets incrementally and far in advance — i.e. in the "out-year" of a budget cycle — when adjustments are more easily made
- Adding funding increments for design fees to cover the costs of energy modeling, daylight and materials analysis. These services are readily justifiable as they clearly go beyond conventional design services.
- Locating funding sources (grants or cost-shares) for these additional design services from utilities or other partners. New York State Energy Research and Development Authority, for example, provides such services listed above on a cost-shared basis.
- Investigating additional construction funding or financing sources with utilities. In some locales, systems benefits charges (a surcharge to utilities to help fund efficiency and renewable energy programs) can be used to fund the incremental cost of efficiency improvements.
- Coordinating other grant and loan programs that increase energy efficiency use (performance contracting,etc.) or other financial incentives that offset higher costs of technologies that save energy and water.
- Considering the use of performance contracting to fund any additional first-costs. These costs would be paid in a few years and the long-term cost savings would be realized.
- Comparing first cost investments to annual life-cycle O&M savings to calculate Rate of Return.

Office of Sustainable Development (in LEED 2.0 Gold Jean Vollum Natural Capital Center), City of Portland, OR

Develop training and outreach programs

One important step in creating a successful green building program is to ensure crucial support from staff that will implement the projects. They will need training to understand and accept the new practices. In addition, there is further need to provide education and outreach to gain institutional support for the program from the outside professional and building community.

Education

1 Provide training programs that educate government agency staff — technical and non-technical — as well as intergovernmental departments with fiscal or administrative input into design and construction.

2 Develop seminars or training modules to address each of the key technical areas for green buildings. Formal training seminars may also be amplified by arranging for presentations by vendors and manufacturers of new products.

3 Develop the training modules around case studies of actual projects accomplished in the program. Consider documenting successes on a Web site or through a video as a means of outreach.

4 USGBC offers a series of training workshop modules for LEED including:

- a half-day *Introduction to LEED*. This course is ideal for partnering with other modules for a full-day training event.
- a one day *Intermediate LEED* workshop which prepares students for the LEED Professional Accreditation Exam,and
- an *Advanced LEED* workshop aimed at those working on live LEED projects.

Outreach

- Create support in the professional community for the new policies. Establish regular opportunities for receiving their input into the program (such as peer review of new policies or procedures) and sharing their successes.

Create exemplary or showcase buildings

Ultimately, nothing builds local momentum and accelerates the learning curve more quickly than applying principles to a real site and building program. Consider the following criteria in selecting appropriate projects:

- Select projects that are early in planning or in a conceptual design stage rather than one already advanced in design. Once design is underway, it is more difficult and costly to switch from a conventional design process to an integrated, whole-building approach.A late stage approach implies that green features will likely be considered as an overlay to existing architectural ideas rather than integral to the design.
- Consider buildings types that will be replicated in the future; for example, one of several daycare centers earmarked for future funding.
- Select pilots which might be compared to existing, conventionally designed buildings; for example, the operating and cost performance of a new green library might be readily benchmarked against existing library buildings in the portfolio.
- Select pilot projects that have high civic visibility — a new city hall,municipal library, courthouse, school or cultural institution.Any of these or similar public building types could be an exemplar, a public showcase for measuring and demonstrating economic,environmental, and social benefits.
- Encourage clients to align green building objectives with their service mission,and to select appropriate, attainable goals from among alternative levels of performance. Some project examples include: daylighting as a preferred source of illumination in libraries; sustainable landscaping practices for a botanical garden or water pollution prevention for an aquarium,emphasis on air quality and other indoor health concerns for daycare centers, and senior citizen centers.

Ultimately, nothing builds local momentum and accelerates the learning curve more quickly than applying principles to a real site and building program.

Seattle City Hall (LEED registered project),City of Seattle, WA

Using LEED

Why choose LEED?

One of the USGBC's vital functions is developing guidelines to define sustainable building and development — in the areas of design,construction and operation. This guideline, known as the LEED Green Building Rating System, is rapidly becoming the nation's standard for designing, constructing, and certifying sustainable buildings.

Leadership in Energy and Environmental Design (LEED)

The core mission of LEED is to encourage and accelerate global adoption of sustainable green building practices through the development and implementation of universally understood and accepted standards, tools and performance criteria. LEED is a voluntary, consensus-based,market-driven building rating system based on existing proven technology. It evaluates environmental performance from a "whole building" perspective over a building's life cycle, providing a definitive standard for what constitutes a "green building."

LEED helps the marketplace define thresholds of performance in relation to sustainable sites, water efficiency, energy and atmosphere, indoor environmental quality, and material resources. LEED is a system designed for rating and certifying new and existing commercial,institutional, and high-rise residential buildings, with related products under development for commercial interiors and other residential applications.

LEED is a flexible, yet consistent architecture. Its development process is broad and inclusive of the needs of different building types, regions or markets, while maintaining the integrity of the system's goals and objectives.

Benefits to State and Local Governments using LEED

- LEED provides all the benefits of a national market transformation system while affording built-in flexibility to accommodate state and local priorities. In most jurisdictions LEED works well "off the shelf;" some others prefer to create and enforce official supplements within the context of their overall green building efforts. Still others are willing to invest long-term in producing and maintaining an official LEED Application Guide. The LEED Rating System allows all three possibilities.
- LEED reduces technical and administrative uncertainties because it has been produced by the nation's leading coalition of leaders from across the building industry.
- LEED saves time and resources by providing a comprehensive set of tools for local application and use.
- LEED avoids the need to establish local certification bodies.
- Government entities that join the USGBC as members have the opportunity to shape LEED by being involved in committee work and voting on LEED ballot issues.

- LEED provides a tool for benchmarking with jurisdictions across the country. See the LEED Web site for a current list of projects registered for certification.
- LEED already has tremendous momentum due to its design elegance. The growing number of public-private partnerships with federal,state and local governments enhances LEED's credibility.
- Since the performance level of the building industry gradually improves over time, LEED evaluates performance thresholds every five years, saving the jurisdiction money and time to change statutes.

What They're Saying:

Federal, State and Local LEED Testimonials

U.S. General Services Administration (GSA)

We chose to use LEED as a measure for our Build Green efforts because it is the primary green building rating system in the country and is already familiar to many design professionals. Using LEED as a goal in design criteria will help us to apply principles of sustainable design and development in our building projects.

—Don Horn,AIA,Architect,Sustainable Design Program,Public Buildings Service

Commonwealth of Pennsylvania

Pennsylvania is proud of its leadership in "building green." We are home to 3 of the first 12 buildings in the United States to achieve certification as "green" under the U.S. Green Building Council's rating system. Our Building Green in Pennsylvania program has provided tools and some actual completed government projects that demonstrate how sustainable building design and construction is possible and cost-effective, while achieving high-quality, people-friendly, energy-efficient buildings to live, learn, and work in.

—Former Pennsylvania Governor Tom Ridge

The Governor's Green Government Council's Building Green In Pennsylvania program with the Department of Environmental Protection piloting projects utilizing LEED as the driver to achieve integrated design and coupling it with the specific performance standards contained in our Model Green Office Specifications for Leased Buildings *has resulted in several LEED Certified Facilities which must perform and maintain that performance over the life of the lease and any renewal option terms. Additionally, we now have six documentary educational Building Green videos available at no cost on* www.gggc.state.pa.us.

—Jim Toothaker, Former Director, Bureau of Office Systems and Services, Pennsylvania Department of Environmental Protection

The core mission of LEED is to encourage and accelerate global adoption of sustainable green building practices through the development and implementation of universally understood and accepted standards, tools and performance criteria.

LEED is the first system to offer us all of the features I believe that we need to make progress toward greener buildings in one package…

Lynne Eichner Kelley, Energy Analyst, City of Eugene, Facilities

State of Maryland

The LEED Rating System is rapidly becoming the national standard for green buildings and provides the ability for the State to compare and measure its progress with other jurisdictions around the country. Being able to use the existing LEED Rating System infrastructure eliminates the need to "reinvent the wheel" in creating and administering the State's green building program, allows quicker implementation of the program, and saves taxpayer dollars.

—Stephen Gilliss, Maryland Department of General Services

Arlington County, Virginia

Arlington County has adopted… [LEED] as a way to measure the energy and environmental performance of buildings in the County…. LEED is the easiest way for any professional, business, or organization to master green building standards and practices.

—"Green Building" page of Arlington County Department of Environmental Services Web site *www.co.arlington.va.us/des/green.htm*

Arlington adopted the LEED standard as the centerpiece of our green building incentive program because it is a carefully crafted rating system reviewed and approved by professionals from all areas of the building industry. The County does not have the in-house expertise to review specific green building components, and we felt that the nationally accepted LEED program would add credibility and uniformity to our program.

—Joan Kelsch, Environmental Planner, Arlington County Department of Environmental Services

City of Seattle, Washington

Use of a national standard helps to establish minimum performance levels, create a common dialogue for discussion, and allows Seattle to measure its sustainable building performance relative to other jurisdictions using LEED. In addition, technical rulings, training, networking, and marketing support are provided by the USGBC.

—Seattle CIP Supplements to the LEED Rating System

Using LEED has accelerated our accomplishments in sustainable building with a fast-moving capital improvements program, by piggybacking with a nationally recognized program and incredible group of national experts who developed the tool. It's also valuable to know how we are doing compared to other jurisdictions.

—Lucia Athens, Chair, City of Seattle Green Building Team

City of Portland, Oregon

Localization of LEED is important. It meshes local regulations and environmental values — two important aspects of bringing about market transformation at a local and regional scale.

—Rob Bennett, Manager, Green Building Division, Office of Sustainable Development, City of Portland

City of Eugene, Oregon

In thinking about the organization that I work for, I asked myself the question: What is it that we would need to help us move toward the goal of producing a "greener" building?

- *We need a definable goal for the project. A directive that simply says "Build a green building" causes major confusion.*
- *We need practical guidance through the design process, yet this guidance needs to be flexible enough to encourage and reward creativity…*
- *We need a mechanism to challenge us to go beyond code or beyond our own limits. We need something that will help us continue to improve…*
- *We need a comprehensive evaluation of the environmental impact of our building…*
- *We need a common language in order to share our experiences and results with others, locally or nationally…*
- *We need recognition for our efforts. It's not easy to change the direction of a large organization; sometimes we simply need the moral support of recognition…*

LEED is the first system to offer us all of the features I believe that we need to make progress toward greener buildings in one package…

—Lynne Eichner Kelley, Energy Analyst, City of Eugene, Facilities

City of Austin, Texas

LEED has provided a nationally accepted set of standards for architects and engineers working on commercial and municipal projects in Austin to use as goals throughout the design process. We believe that this gives our Green Building efforts greater credence and can only lead to higher quality buildings.

—Richard Morgan, Green Building Manager, Austin Energy

City of New York, New York

We are excited by our clients' interest in using LEED on our green building initiatives. We also value LEED's versatility and compatibility with the use of New York City's High Performance Building Guidelines.

—Hillary Brown, (former) Assistant Commissioner, NYC's Office of Sustainable Design

Being able to use the existing LEED system infrastructure eliminates the need to "reinvent the wheel" in creating and administering the State's green building program

Stephen Gilliss, Maryland Department of General Services

Federal, State and Local LEED Case Studies

- U.S. General Services Administration
- Commonwealth of Pennsylvania
- State of Maryland
- Arlington County, Virginia
- City of Seattle, Washington
- City of Portland, Oregon
- City of Eugene, Oregon

Who's Done It

Introduction

Several state and local government entities have been leading the way using LEED to focus or enhance their own green building and development programs. The case studies that follow examine who the entities are, how they are using LEED and what considerations have arisen that may inform others seeking to begin the process. These are organized to provide descriptions and examples of the following:

- Policy or Program
- Structure
- Application (if any)
- Additional Activities

Contact information and links to referenced Internet resources are also included.

U.S. General Services Administration

Policy: As of January 2000, GSA's Public Buildings Service (PBS) has committed to achieving the LEED Certified level for all future construction projects, beginning with those designed in FY 2003. An excerpt from Section 1.5 "Environmental Policies & Practices" of the *Facilities Standards for the Public Buildings Service* (PBS-P-100), revised November 2000, describes the requirement as follows:

> **LEED Certification**
> *As a means of evaluating and measuring our green building achievements, all [new] GSA building projects must be certified through the Leadership in Energy and Environmental Design (LEED) Green Building Rating System of the U.S. Green Building Council. Projects are encouraged to exceed basic LEED green building certification and achieve the LEED "Silver" Level.*

GSA adopted LEED to serve both as design criteria and measurement for their green building efforts. The agency goal is to achieve a Silver Rating, but the requirement is for projects to be certified by the USGBC at the LEED Certified level.Currently 19 GSA projects are registered with the USGBC under the LEED Rating System.

Structure: Sustainable design is reviewed at several different stages of a GSA project, both in terms of energy efficiency and general sustainable design. Initially each GSA region responds to the "Capital Improvement and Leasing Planning Call" to establish program and budget objectives. Individual LEED points goals and energy efficiency targets are established for each building. It is expected that every best effort will be made to achieve these goals.

Projects undergo sustainable design review, including provision of submittals stating they will meet the established energy targets. Revisions may be made in the site planning and building design to improve environmental performance. GSA uses LEED as a design guideline in this process. While LEED Certified is the required level, currently any additional funds to exceed this level must be justified.

Furthermore, as of July 2000, GSA's *Design Excellence Program Guide* for selection of architectural and engineering firms includes sustainable design experience among the criteria. Use of these criteria for selection of contractors is formally justified by recent changes to the provisions of the Federal Acquisition Regulation (FAR).

Application: The GSA uses the LEED Rating System in its existing form and has not sought adaptation of LEED to its own needs, unlike, for example, the EPA, which has identified a need to adapt LEED to laboratories. GSA would, however, like to engage a process of clarifying which credits are most likely to be achievable for their facilities.

Additional Activities: GSA's overall environmental program has defined the following five specific areas for GSA to focus its sustainability efforts:

Build Green from the Public Buildings Service, which includes revising leases to include requirements that the spaces leased for customers be green,in addition to the LEED-based green building requirements described above.

Buy Green from the Federal Supply Service, which includes a variety of resources on environmentally preferable purchasing,including building materials as at *www.fss.gsa.gov/environ.*

Save Green from the Energy Center of Expertise, which focuses on energy efficiency issues.

Drive Green, which focuses on transportation issues, particularly:
- Alternative fuel vehicles and
- The "telework" initiative

Manage Green, which focuses on operational practices and liability issues, particularly:
- Recycling
- Environmental Performance
- Environmental Hotline
- Community Development
- Brownfields Redevelopment
- Green Meetings & Events

Training has constituted a large portion of GSA's sustainability information dissemination efforts nationwide. Sustainable design training is provided to all project managers, including training directly related to LEED and training in the Green Lease initiative. Furthermore, through the "client agency" aspect of GSA's work, their offices can offer sustainable design training and support to other Federal agencies in their respective regions.

Contact

Don Horn,AIA,Architect

Sustainable Design Program

Environmental Strategies and Safety Division

Office of Business Operations
Public Buildings Service
General Services Administration

202-501-4525
donald.horn@gsa.gov
www.GSA.gov

"Building Green in Pennsylvania" has evolved as one of the major initiatives of the GGGC (Governor's Green Government Council)...

Commonwealth of Pennsylvania

Policy: In March 1998 Pennsylvania Governor Tom Ridge issued Executive Order 1998-1 *Governor's Green Government Council*, available on-line at *http://sites.state.pa.us/oa/Executive_Orders/1998-1.pdf,* excerpts of which follow:

> **Purpose of the Council**
> *The purpose of the Council is to, cooperatively across agency jurisdictions, facilitate the incorporation of environmentally sustainable practices, including Strategic Environmental Management, into Commonwealth government's planning, operations, and policy making and regulatory functions, and to strive for continuous improvement in environmental performance with the goal of zero emissions. Strategic Environmental Management includes an environmental management system with a strong pollution prevention and energy efficiency program, effective community involvement, measurable economic and environmental performance goals, environmental accounting, and life cycle analysis.*
>
> **Responsibilities of the Council**
> a. *The Council is responsible for providing advice and assistance in the preparation and review of agency Green Plans and the implementation of initiatives undertaken to fulfill these plans.*
>
> b. *The Council is responsible for providing advice and assistance in prioritizing initiatives undertaken to incorporate environmentally sustainable practices into Commonwealth government's planning, operations, policy making, and regulatory functions and to strive for continuous improvement in environmental performance with the goal of zero emissions.*

Structure: The Governor's Green Government Council (GGGC) *www.gggc.state.pa.us* is jointly chaired by the Secretary of the Department of Environmental Protection (DEP) and the Secretary of the Department of General Services (DGS). "Building Green in Pennsylvania" has evolved as one of the major initiatives of the GGGC,particularly in the areas of high performance green buildings, building renovation & retrofit and building operation and maintenance.

The GGGC and DEP have been actively working with DGS's Public Works staff and the Department of Education to advance green building in the public sector, sponsoring an intensive educational program over the past 14 months taught by staff from Carnegie Mellon University for all interested Commonwealth agencies. Along these lines, special attention has recently been paid to greening Pennsylvania's public schools and government laboratories.

DEP itself, which has primarily leased facilities, now requires all of its leased buildings to achieve LEED Silver Certification and to meet all performance standards on page 3 of their *Model Green Office Leasing Specifications* while maintaining the Certification and Performance Standards throughout the lease period and any renewal periods. This meets the GGGC's own *High-Performance Green Building Guidelines* and *Model Green Office Leasing Specifications*, as prescribed below:

> *The facility must receive at least a Silver Level Certification from the USGBC's LEED Green Building Rating System and meet the performance standards on page three of the* Model Green Office Leasing Specs *[enumerated here under "Application"]. The lessor is responsible for obtaining the LEED Certification and maintaining it, as well as maintaining the operational performance requirements throughout the term of the lease and any renewals thereto.*
>
> *All project design, development and construction must be accomplished utilizing the Governor's Green Government Council's "Building Green in PA Program," which consists of the following:*
>
> - Guidelines for Creating High Performance Green Buildings
> - Model Green Office Leasing Specifications
> - USGBC LEED 2.0

The requirement to maintain LEED Silver and other high-performance green standards is a pioneering characteristic of DEP's approach to the "Building Green in Pennsylvania" initiative.

Application: As described above, LEED is currently part of a package of requirements for DEP buildings. The GGGC has found LEED to be a major tool and has chosen to use it in its existing form without adaptation,which is the first and most straightforward option available to state and local governments.

Further green building issues specific to the goals of the "Building Green in Pennsylvania" initiative are addressed by the additional requirements of the GGGC's own *Guidelines for Creating High Performance Green Buildings* and *Model Green Office Leasing Specifications*, which were developed well in advance of the release of LEED 2.0. Individual sections of these documents are available on-line at *www.gggc.state.pa.us/publictn/gbguides.html* and *www.gggc.state.pa.us/publictn/leaspecs.html,* respectively. The required performance standards in the *Model Green Office Leasing Specs* follow:

- *Energy Budget:* The leased space shall consume 40,000 Btu/square foot/year or less of primary energy not including plug loads.
- *Lighting Budget:* The leased space shall consume 0.9 watts/square foot or less of electrical energy for ambient lighting.
- *HVAC Chiller:* HVAC chiller size should not exceed one ton per 600 square feet.
- *Glazing:* The indoor surface temperature of glazing shall not be less than 62°. when the outdoor temperature is 20°F.

Contact

Paul Zeigler, PE
Engineering & Building Technology
Governor's Green
Government Council

717-772-5161
pazeigler@state.pa.us

Top:Wrightsville Elementary School (LEED registered project), Wrightsville,PA

Bottom: Walnut Street West Library (LEED registered project), Philadelphia, PA

Successful green buildings stem from an integrated design process.

- *Interior Surfaces:* The indoor surface temperature of opaque wall surfaces shall not be less than 70°F when the outdoor temperature is 20°F.
- *Ventilation:* The ventilation system must provide air to the desk with less than 700 ppm CO_2 during hours of occupancy.
- *Indoor Temperatures:* The indoor temperature at the workspace shall be user controlled at 73°F +/-2°F with building setback capability during non-operational hours.
- *Cooling Humidity:* The indoor relative humidity shall not exceed 45% during the cooling season at established design conditions.
- *Heating Humidity:* The indoor relative humidity shall be no less than 35% during the heating season at established design conditions.

Additional Activities: Pennsylvania is currently home to 5 buildings having official USGBC LEED Certification,of which two are Commonwealth facilities. DEP's Southcentral Regional Headquarters in Harrisburg, certified at the Bronze level under LEED 1.0, is known as "Pennsylvania's First Green Building" and exemplified the department's understanding that successful green buildings stem from an integrated design process. Its more recent Cambria Office Building in Ebensburg pushed green building achievements still further and has received the first LEED 2.0 Gold Certification in the United States.

More than 20 projects are currently registered with several of them anticipating certification in 2002, including Pittsburgh's David L.Lawrence Convention Center and the Hanover Public School District's Clearview Elementary School.

Pennsylvania has also now produced six educational documentary videos as part of the "Building Green in Pennsylvania" program, which are available free on the GGGC's Web site: *www.gggc.state.pa.us.* Among these is DEP's recently released video CD, *Lessons Learned: The First Years* which documents the comprehensive multi-party process involved in designing these two buildings, including use of the LEED Rating System versions 1.0 and 2.0 to guide and benchmark green building measures.

The issuance of Executive Order 1998-1 and the resulting formation of the Governor's Green Government Council lent increased momentum to the groundwork laid by the early project-specific of the DEP and DGS. The breadth of GGGC's continued green building efforts are collected on-line at *www.gggc.state.pa.us/building,* including promotion and demonstration of high-performance green buildings at comparable first cost along with public education on the benefits to building users and Pennsylvania's environment.

State of Maryland

Policy: In March 2001 Maryland Governor Parris Glendening issued Executive Order 01.01.2001.02, *Sustaining Maryland's Future with Clean Power, Green Buildings and Energy Efficiency.* This requires the creation of a commission to make recommendations and set criteria for constructing and maintaining energy efficient and environmentally responsible state facilities, setting goals for the purchase of "green power" and outlining a comprehensive energy conservation strategy. The full text of the Executive Order is available on-line at *www.dgs.state.md.us/greenbuildings.*

Section A,"Clean Energy Procurement Goal"of the Executive Order sets a new goal for the procurement of electricity, calling for at least 6 percent of consumption in state-owned facilities to be produced from "green energy," which includes wind power, solar, biomass and landfill gas generated sources. To promote a diversity of "green energy" resources, no more than 50 percent of the procurement goal may be from the combustion of municipal solid waste.

Section B, "High Efficiency Green Buildings Program," establishes the Maryland Green Buildings Council to develop a High Efficiency Green Buildings Program that will guide the design, construction, operations and maintenance of all new state-built facilities, as well as the renovations of existing state owned and leased buildings. Excerpts of this section of the Executive Order follow:

> *...the Council shall make recommendations to the Governor regarding appropriate criteria, standards and a numeric rating system (modeled after the United States Green Building Council's Leadership in Energy and Environmental Design (LEED) Green Building Rating System and the federal Energy Star Program) for use by the Program.*
>
> *Upon acceptance of the appropriate criteria, standards, and a numeric rating system, the High Efficiency Green Buildings Program shall be fully adopted in the design, construction, operations, maintenance and deconstruction of new State owned and leased facilities. Reasonable effort should be made to incorporate these standards into the construction of all new facilities designed before the issuance of this Executive Order.*
>
> *For all existing State owned, leased and operated buildings, reasonable efforts shall be made to maximize the use of energy efficiency and resource conservation techniques.*

Lastly, Section C, "Additional Energy Efficiency Goals," also encourages reducing State building total energy consumption,using renewable energy components and procuring energy-efficient office products. It also encourages the reduction of solid waste production and makes it easier for the State to purchase alternative-fuel and low-emission vehicles for its fleet.See the Additional Activities section below.

Contact

General Information on Maryland's Green Building Program:

Mark Bundy, Ph.D.,
Maryland Department of Natural Resources

410-260-8720
mbundy@dnr.state.md.us

Sean McGuire,
Maryland Department of Natural Resources

410-260-8727
smcguire@dnr.state.md.us

State Facilities:

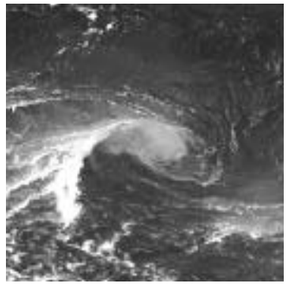
Stephen Gilliss,
Maryland Department of General Services

410-767-4675
stephen.gilliss@dgs.state.md.us

Commercial Facilities and Green Building Tax Credit:

Ms. Geri Nicholson,
Maryland Energy Administration

410-260-7207
gnicholson@energy.state.md.us



Application: The Maryland Green Buildings Council will develop a LEED application for use in evaluating state projects. This work is currently in progress.

Additional Activities: Section A, "Clean Energy Procurement Goal," of Executive Order 01.01.2001.02 lists the following:

1. "Green Energy" is defined as energy generated from the wind, solar photovoltaic, solar thermal, biomass, landfill gas and the combustion of municipal solid waste.

2. For the procurement of electricity for use within State owned facilities, the State of Maryland has a goal of 6% to be generated from Green Energy. No more than 50% of the total Green Energy procurement shall be derived from the combustion of municipal solid waste.

3. In the selection of a power generation contractor chosen through the procurement process, priority consideration should be given to companies that produce green power in Maryland.

Section B, "High Efficiency Green Buildings Program," of Executive Order 01.01.2001.02 lists the following additional responsibilities of the Maryland Green Buildings Council:

a. Annually reevaluate the Clean Energy Procurement Goal contained in Section above;

b. Consider additional State energy efficiency, energy production and sustainability issues and policies;

c. Develop a comprehensive set of initiatives known as the "Maryland Greenhouse Gas Reduction Action Plan;" and

d. Report annually to the Governor and to the General Assembly on the efforts of State agencies in the implementation of High Efficiency Green Buildings Program goals, Clean Energy Procurement Goal, the Greenhouse Gas Reduction Plan, and other energy efficiency, energy production and sustainability issues or policies the Council may have considered.

Section C, "Additional Energy Efficiency Goals," of Executive Order 01.01.2001.02 lists the following requirements of the State:

1. Energy Efficiency Improvement Goal: Reduce energy consumption per gross square foot of its facilities by 10% by 2005 and 15% by 2010 relative to a 2000 baseline.

2. Renewable Energy Project Goal: Expand the use of renewable energy within its facilities, including supporting the federal Million Solar Roofs program.

3. Efficient Product Purchase Goal: Purchase Energy Star products when purchasing energy-using products, including computers, printers, copiers and other office equipment, or shall purchase products in the top 25% in energy efficiency for products where labels are not available.

4. Pollution Prevention Goal:Divert or recycle at least 20% of the waste its agencies generate, beginning on January 1, 2003.

5. Alternative Fuel Vehicles Goal:

   - Revise fleet policy and purchasing guidelines to offer more flexibility in purchasing, where practical, low emission and alternative fuel vehicles for its fleet.

   - Ensure that for fleet units operating bi-fuel or flex-fuel vehicles (vehicles that operate on either motor gasoline or an alternative fuel, as defined by the Federal Energy Policy Act) an average of 50% of the fuel used by those vehicles shall be alternative fuel.

   - Develop the refueling and maintenance infrastructure required to make certain types of alternative fuel vehicles practical and provide technical assistance and other incentives to use clean technology, where practical,in State transit fleets.

In addition to the State Executive Branch's efforts in the public buildings sector, Maryland's Legislature recently passed the Income Tax Credit for Green Buildings bill, signed into law by the Governor in May 2001. This law is designed to encourage green private development in Maryland and will be applicable to all taxable years beginning after December 2002. The full text of the law is available on-line at *http://mlis.state.md.us/2001rs/billfile/HB0008.htm*. A partial synopsis written by Ed Osann, Maryland Representative of the Natural Resources Defense Council, follows:

> *Governor Glendening's recent Executive Order... has placed state government on a path to more energy-efficient and environmentally friendly buildings. This bill is a parallel effort to encourage similar innovation within the private sector.*
>
> *The bill applies to commercial buildings and to multi-family residential buildings, and allows for credits to be taken for qualifying investments either for new construction or for renovation. The bill also allows credits to be taken by tenants for qualifying investments of their own in tenant-controlled space, which is common in commercial buildings.*

Under the Tax Credit Law, the cost of those portions of the project that may be higher as a consequence of meeting the green building criteria are considered "allowable costs," to which a credit of 8% of these allowable costs can be taken against state income tax when the whole building qualifies as a green building, or 6% when only the tenant interior space qualifies. Supplemental credits for on-site power systems serving green buildings are also available, including photovoltaic systems, wind turbines, and fuel cells.

"Green Energy" is defined as energy generated from the wind, solar photovoltaic, solar thermal, biomass, landfill gas and the combustion of municipal solid waste.

LEED Registered Projects:the John M.Langston High School Continuation and Langston-Brown Community Center, Arlington, VA

Arlington County, Virginia

Program: In order to encourage more green building in Arlington, the County currently requires the following for commercial development:

1. All site plan applications in Arlington County are required to include a completed LEED scorecard. The scorecard allows the developer to assess the options for including green components in a project. It also allows the County to measure a project's overall performance and to collect data on the environmental status of all site plan buildings in the County.

2. The County offers a bonus density incentive to developers who design green buildings as outlined by the LEED Rating System. The developer may be granted additional density up to 0.25 floor area ratio (FAR) and/or additional height up to 3 stories if the project meets the Silver LEED rating or higher.

The full text of the Arlington County Pilot Green Building Incentive Program is available on-line at *www.co.arlington.va.us/des/epo/green.htm.* The following excerpt explains the purpose of the Pilot Program:

> **Introduction**
> *In April 2000, Arlington County implemented a Pilot Green Building Incentive Program to encourage construction of more environmentally friendly office buildings. Developers can be awarded bonus density or height, if their office buildings incorporate Green Building components. The program uses the [LEED] Green Building Rating System to evaluate special exception site plan requests for bonus density and/or height. The initial focus of this program will be office development, because the LEED standards are most applicable to larger urban office buildings. An alternative program for residential buildings may be developed at a later date.*

To date, one potential developer has come to the table in March 2001. The entire program will be up for review in 2003.

Structure: Excerpts explaining the basic rules of the Pilot Green Building Incentive Program follow:

> **How the Incentive Program Works**
> *The program will allow the County Board to consider awarding bonus density and/or bonus height requests for projects that incorporate green building components. In order to be considered for the incentive program, the proposed building must, at the minimum, meet the Silver award level of the LEED Rating System (a building score between 33 and 38 points).*
>
> *…The program will allow the County Board to consider a modification of use regulations for additional density up to .25 FAR and/or additional height up to 3 stories for special exception site plan requests.... The provision of LEED-certified green building components does not guarantee additional density and/or height.... The provision of LEED Certified green building components will be a part of the typical site plan negotiations for environmental amenities in exchange for the requested bonuses.*
>
> **Bonus Density**
> *Based on the range of the LEED Silver award point system, a range of bonus density will also be considered, from .15 FAR for the lower end of the Silver award (33 points) to .25 FAR for the highest end of the Silver award (38 points). For site plan proposals in which the LEED Certified Gold or Platinum award levels are being sought, bonus density greater than .25 FAR will be considered utilizing the environmental amenities provision of Section 36.H.5.a. (1) of the Zoning Ordinance.*

Implementation of the Pilot Green Building Incentive Program begins with the following requirements:

1. The developer submits the LEED scorecard along with the site plan application to the County.

2. The developer registers the project with the USGBC early in the process to identify the specific components of the LEED program they intend to pursue.

3. The proposed site plan (including the requested bonus density and/or height) undergoes the typical community review process.

4. Once the site plan is approved, permit drawings are reviewed to ensure inclusion of the approved green building components, which were previously identified in the scorecard. The County utilizes LEED Certified inspectors or architects hired by the developer during review of the permit drawings and construction of the building. Permits are not issued unless approved LEED components are included in the plan drawings.

5. The application for LEED Certification and rating is submitted to USGBC when the building construction is complete or substantially complete, depending on the credits elected.

In addition, various checks and enforcement mechanisms are put in place by Arlington County to ensure the integrity of the Pilot Incentive Program. Prior to issuance of the first certificate of occupancy, the developer provides the County financial security (bond, letter of credit,etc.) in a specified amount, guaranteeing that within 18 months, the developer will receive its silver certification from the USGBC.When the certification is issued the security is released. If the certification is not obtained,the developer forfeits the security to the County.

Application: Unlike Seattle's and Portland's programs, Arlington County keeps LEED "intact." While Arlington may be able to expand the scope of the Pilot Green Building Incentive Program in the future, such as to residential structures, it currently only includes office buildings, which is the most straightforward application of LEED 2.0.

Contact

Joan Kelsch,
Environmental Planner
Environmental Planning Office
Arlington County Department of Environmental Services

703-228-3599
jkelsch@co.arlington.va.us

www.co.arlington.va.us/des/epo/green.htm

The Seattle Central Library, anticipated to meet the LEED™ Silver Rating, was designed by Rem Koolhaus of the Office for Metropolitan Architecture, Rotterdam,and LMN Architects, Seattle.

City of Seattle, Washington

Policy: The City of Seattle is among the pioneers of local LEED adoption,and was the first city to adopt a Silver LEED policy. Seattle's Sustainable Building Policy was passed in February 2000, and is available on-line at *www.cityofseattle.net/sustainable-building/ policy.htm.* Excerpts of the Policy follow:

Purpose

The purpose of a Citywide policy on sustainable building is to demonstrate the City's commitment to environmental, economic, and social stewardship, to yield cost savings to the City taxpayers through reduced operating costs, to provide healthy work environments for staff and visitors, and to contribute to the City's goals of protecting, conserving, and enhancing the region's environmental resources. Additionally, the City helps to set a community standard of sustainable building.

Policy

It shall be the policy of the City of Seattle to finance, plan, design, construct, manage, renovate, maintain, and decommission its facilities and buildings to be sustainable. This applies to new construction and major remodels in which the total project square footage meets the criteria given. The U.S. Green Building Council's LEED Rating System and accompanying Reference Guide shall be used as a design and measurement tool to determine what constitutes sustainable building by national standards:.

Structure: Under Seattle's Sustainable Building Policy a LEED Silver rating,certified by the USGBC, is the policy target for city projects, which currently applies to around $650 million of capital development, as follows:

All [City of Seattle] facilities and buildings [new construction and major remodels] over 5,000 gross square feet of occupied space shall meet a minimum LEED Silver rating…. Design and project management teams are encouraged to meet higher LEED rating levels. A Mayor's Award for achieving a higher rating will be awarded.

To facilitate use of LEED by City Capital Improvement Project (CIP) Managers and their design teams, the City's Green Building Team created the Seattle CIP Supplements to the LEED Rating System. This document provides a wealth of Seattle-specific information on applying the rating system, directs users to relevant local and regional resources, and highlights the additional requirements for City of Seattle projects. Although written for City CIP Managers, the Supplements may serve anyone applying LEED to a project in the Seattle area. The current version of the Seattle CIP Supplements is available as a downloadable PDF file at *www.cityofseattle.net/sustainablebuilding/Leeds/docs/LEEDSupplements.PDF.* The City is constantly refining the content of this document, striving to address the technical and general guidance needs of its users.

According to Seattle Green Building Team Chair Lucia Athens, technical questions to the City of Seattle are handled on case-by-case basis — most are handled directly by representatives of the City's Sustainable Building Program (such as those listed in the Supplements document), while others are referred back to the USGBC. Generally, the City of Seattle tries to handle all the technical issues itself, looking to USGBC for technical support only when credits are modified. The City of Seattle also operates a Sustainable Building Reference Library containing LEED referenced standards, maintains a Web resource (*www.cityofseattle.net/sustainablebuilding*), conducts training and education, develops tools, and offers incentives to further assist in LEED implementation.

Application: The specific deviations from LEED 2.0 required for City of Seattle projects, as described in the *Seattle CIP Supplements*, are summarized below:

LEED 2.0 Prerequisite or Credit	Seattle LEED Application
Site Prerequisite 2 *Landscape and Grounds Management*	**Supplemental Prerequisite** requiring compliance with the City of Seattle Landscape and Grounds Management Guidelines
Energy Prerequisite 1 *Fundamental Building Commissioning Amendments*	**Demonstrated Equivalency** which also requires compliance with the 1997 Washington State Energy Code with Seattle
Energy Prerequisite 2 *Minimum Energy Performance*	**Demonstrated Equivalency** which also requires compliance with the 1997 Washington State Energy Code with Seattle Amendments
Energy Credit 1 *Optimize Energy Performance*	**Demonstrated Equivalency** which also requires compliance with the 1997 Washington State Energy Code with Seattle Amendments *Mandatory Credit* requiring credit level 1 (2 points) minimum
Energy Credit 2 *Renewable Energy*	**Clarification** that to receive credit the energy benefits from renewable/alternative energy must be above and beyond the energy measures employed to obtain energy efficiency credits
IEQ Prerequisite 1 with *Minimum IAQ Performance*	**Demonstrated Equivalency,** which also requires compliance the Seattle Mechanical Code and Washington State Ventilation and Indoor Air Quality Code
IEQ Credit 2 with *Increased Ventilation Effectiveness*	**Demonstrated Equivalency,** which also requires compliance the Seattle Mechanical Code and Washington State Ventilation and Indoor Air Quality Code
IEQ Credit 7 *Thermal Comfort*	**Clarification** to state "unless special design conditions justify other values"

Contact

Lucia Athens,
Chair, City of Seattle Green Building Team

City of Seattle Sustainable Building Program

206-684-4643
lucia.Athens@ci.seattle.wa.us

www.cityofseattle.net/sustainablebuilding/

The City of Seattle is among the pioneers of local LEED adoption, and was the first city to adopt a Silver LEED policy.

To add emphasis to some areas representing Seattle-specific values without changing the requirements for LEED ratings, the Seattle CIP Supplements lists some "highly recommended" strategies, noting that projects following these recommendations will be eligible to apply for innovation credits:

LEED 2.0 Prerequisite or Credit	Seattle CIP Recommendation
Water Credit 1 Water-Efficient Landscaping	**Highly Recommended** that projects consider the installation of sub-meters for landscaping
Water Credit 3 Water Use Reduction	**Highly Recommended** that projects consider the installation of sub-meters for City tenants, with cooling metering, water efficiency and component specifications

Additional Activities: Several other City policies and programs that relate to sustainable building are referenced in the Seattle CIP Supplements, though not required for the specific purposes of achieving a LEED rating,including:

- The City's Resolution regarding use of sustainably certified wood (Resolution 30015),
- The City's Policy regarding purchasing of recycled content materials (SMC section 3.18.904), and
- The Copernicus Project, the City's plan to redesign the way goods and services are procured (described in the Appendix of the Seattle CIP Supplements).

In addition to the required use of LEED for City projects, various financial incentives and technical assistance are made available to commercial, multifamily and single family projects. Eligibility requirements vary with program sponsors, and focus on the following resource conservation areas:

- Water Conservation
- Materials Conservation
- Multiple Resource Conservation
- Site and Landscape
- Community Planning/Transportation
- Energy Conservation
- LEED Certification

City of Portland, Oregon

Policy: The City of Portland adopted the LEED Rating System in January 2001 and completed a local application of Portland LEED, in the summer of 2002. The full text of the Policy is available on-line at *www.green-rated.org/g_rated/windows/gbpolicy.htm.* An excerpt of the Policy follows:

> **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.*

Structure: The City of Portland Green Building Policy outlines four key components or "Policy Strategies":

1. The City of Portland shall incorporate green building practices into all facilities projects constructed, owned,managed or financed by the City, including:
   - New Construction and Major Renovations (requirement to meet and be certified by USGBC at the "Certified" level of Portland LEED Green Building Rating System)
   - Interior-Tenant Improvements (applying the Portland Interior - T/I Green Building Guidelines, currently under development)
   - Operations and Maintenance (applying Portland Green Building Operations and Maintenance Guidelines, currently under development)
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.

Contact

Rob Bennett,
Manager, Green Building Division,
Office of Sustainable Development
City of Portland

503-823-7082
bennett@ci.portland.or.us
www.green-rated.org

For information on the potential application of the State of Oregon's Business Energy Tax Credit to LEED buildings, contact:

Charlie Stevens
Oregon Office of Energy

503-378-4298 or 800-221-8035
www.energy.state.or.us/bus/tax/taxcdt.htm

CBWTP Operations Center (LEED registered project), City of Portland,OR

USING LEED

Oregon is known nationally for its statewide land use planning laws.

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.

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

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

Since relatively few city projects exist, Portland is currently focusing on implementing incentive programs for the private sector. Through the Portland LEED Incentive Program the City has reserved a $200,000 fund to promote LEED in the private sector, offering the following incentives to commercial projects, for which achievement of the LEED level must be certified by the USGBC:

- $15,000 for green design services at the Portland LEED Certified level
- $20,000 for green design services at the Portland LEED Silver level

75% of the above funds are available up front with a signed agreement. If the agreed upon LEED level is not attained by the project,then the funds are due back to the City. To date 13-14 commercial pre-applications have been received for the Portland LEED Incentive Program, most at the Silver level or better.

Ecotrust's Jean Vollum Natural Capital Center (LEED 2.0 Gold), home to the City of Portland's Office of Sustainable Development, Portland,OR

Application: The City of Portland LEED Application Guide was approved by the USGBC in mid-2002. Portland's application includes new prerequisites, modified prerequisites, modified credits, modified credit language, modified technologies/strategies language, and new innovation credits. These LEED applications, which emerged from a combination of local values and application needs, are summarized in the table below:

LEED 2.0 Prerequisite or Credit	Portland LEED Adaptation
Site Prerequisite 1 *Erosion and Sedimentation Control*	**Demonstrated Equivalence** using the City of Portland Erosion Control Manual as the referenced standard
Site Prerequisite 2 *Alternative Transportation*	**Supplemental Prerequisite** requiring a Transportation Management Plan providing on-going transportation alternatives incentives
Site Credit 4 *Alternative Transportation*	**Additional Guidance** that includes: • Clarification of requiring no more than 50% of maximum locally allowed parking spaces if no minimum local requirement exists, • Clarification that carpool/vanpool spaces and bicycle storage equal 5% of total number of parking spaces.
Site Credit 6 *Stormwater Management*	**Demonstrated Equivalence** using the City of Portland *Stormwater Manual* as the referenced standard
Energy Prerequisite 2 *Minimum Energy Performance*	**Demonstrated Equivalence** using the 1998 Oregon energy code as the referenced standard
Energy Credit 1 *Optimize Energy Performance*	**Demonstrated Equivalence** using the 1998 Oregon energy code as the referenced standard *Mandatory Credit* requiring credit level 1 (2 points) as a minimum
IEQ Prerequisite 1 *Minimum IAQ Performance*	**Additional Guidance** for Technologies/Strategies to include additional explanation of ASHRAE Standard 62-1999
IEQ Credit 4 *Low-Emitting Materials*	**Additional Guidance** for Technologies/ Strategies to include additional explanation of specifying low-emitting materials
IEQ Credit 6 *Controllability of Systems*	**Additional Guidance** for Credit clarifying allowance for operable windows.
Innovation Credit 1 *Mixed Use Development*	**One Innovation Creditpoint**[1] available for mixed use, transit-oriented development
Innovation Credit 2 *Alternative Transportation*	**One Innovation Creditpoint**[1] available for providing each of the following: • 50% of locally required minimum[2] or 30% of locally allowed maximum number of parking spaces, whichever provides fewer • Further limiting parking to no parking for new construction projects beyond the requirements of the Americans with Disabilities Act (ADA)
Innovation Credit 3 *Stormwater Management*	**One Innovation Creditpoint**[1] available for providing each of the following at sites with a Floor Area Ratio (FAR) greater than 1: • 50% mitigation per *Bureau of Environmental Services Stormwater Manual* for surface-level impervious surfaces • 100% mitigation per *Bureau of Environmental Services Stormwater Manual* for surface-level impervious surfaces • 50% mitigation per *Bureau of Environmental Services Stormwater Manual* for impervious roof surfaces • 100% mitigation per *Bureau of Environmental Services Stormwater Manual* for impervious roof surfaces
Innovation Credit 4 *Construction Waste Management*	**One Innovation Creditpoint**[1] available for recycling and/or salvaging at least 90% (by weight) of construction, demolition and land clearing debris
Innovation Credit 5 *Low-Emitting Furnishings*	**One Innovation Credit point**[1] available for selecting office furnishings, such as workstations, to reduce VOC emissions
NOTES:	[1] *Total LEED maximum number of allowable Innovation Credits remains at four* [2] *Must be negotiated based upon project location*

WHO'S DONE IT

This Portland office looks out on an eco-roof and terrace on the top floor of the Jean Vollum Natural Capital Center. High performance glazing controls heat gain and loss, and slatted blinds made of 100% certified wood provide shade.

"In many ways we are still learning what a "green" building looks like. We'll be much more successful... if we don't limit how we accomplish the goals..."

City of Eugene, Oregon

For prerequisites and credits where equivalency is sought for local and state standards, Portland provided the USGBC comparison and submittal documentation as part of its Application Guide review, demonstrating how these regulations are at least as stringent as those referenced by LEED 2.0. This includes the local erosion control and stormwater management regulations, and a brief summary of the Oregon energy code. Use of the Oregon energy code in place of ASHRAE 90.1 1999 is important to the success of Portland LEED since demonstrating compliance to both standards would be a burden for most local projects. Furthermore, the Oregon Office of Energy has expanded the Business Energy Tax Credit for LEED buildings, for which using the Oregon energy code is greatly preferred.

Portland's LEED application includes creating a supplemental prerequisite for alternative transportation, following the Oregon Department of Environmental Quality's requirement for a transportation management plan. According to Portland Green Building Division Manager Rob Bennett, the desire for this supplemental prerequisite emerged from a perceived value conflict within LEED, wherein one can still develop a green building that contributes to urban sprawl. Oregon is known nationally for its statewide land use planning laws, and as such the City of Portland wanted to emphasize that context by creating this new prerequisite. An additional new prerequisite converts the first level of Energy Credit 2 — Optimize Energy Performance — into a required credit.

A set of pre-determined innovation credits are also part of the Portland LEED application. These innovation credits are still only available up to a total of four following the LEED 2.0 point system. They are intended to minimize the need for developers to "guess" at what further steps to take, while also reflecting the particular values of the City of Portland by offering potential "weighting" of issues such as alternative transportation and stormwater management.

Additional Activities: In addition to the financial incentives for LEED, the City of Portland offers the following incentives:

- Up to $5,000 in Innovation Grants available to small commercial projects incorporating green building features, from a total fund of $90,000.
- Up to $3,000 in grants available to residential projects under 3,000 sf incorporating green building features.
- An RFP process also exists for support of particular green technologies.

The City of Portland is also currently developing its Portland Interior - T/I Green Building Guidelines and Portland Green Building Operations and Maintenance Guidelines to comply with item 1 of its Green Building Policy.

City of Eugene, Oregon

Policy: The Eugene City Council adopted a Sustainability Resolution in February 2000. Included in the resolution was the policy to use the LEED Rating System as a design guideline for construction of new City facilities with the goal of achieving LEED Certification.An excerpt from the Sustainability Resolution follows:

> *The City is committed to assessing its current practices and programs with respect to their conformance with sustainability objectives. The City is further committed to developing strategies for implementing sustainable practices that address purchasing of products and services, maintenance, facility design and municipal operations.*

Structure: As a result of the Sustainability Resolution,the Environmental Policy Team (EPT) was formed to provide guidance to the City's sustainability efforts. The EPT created three technical teams, the *Environmental Review Team* (ERT), the *Endangered Species Act/Salmon Team* (EST), and the *Green Building Team* (GBT).

The focus of the Green Building Team is on the application of green building technology, both with respect to the City's internal building design, construction, and operations/maintenance practices, and to the "greening" of building and land use codes applicable to the development within the City. Because the application of green building technology affects many aspects of the City's role in the community, the GBT includes appointed representatives from a number of City departments and divisions that have responsibility for City building functions as well as external regulatory and economic development functions.

In a presentation to the Association of Professional of Energy Managers, Energy Analyst Lynne Eichner Kelley explains the City of Eugene's rationale for adopting the LEED Rating System by beginning with the question:"What is it that we would need to help us move toward the goal of producing a 'greener' building?"

- We need a definable goal for the project.A directive that simply says "Build a green building" causes major confusion. We need to have a way to describe what we want from the project in order to give guidance to our consultants.
- We need practical guidance through the design process, yet this guidance needs to be flexible enough to encourage and reward creativity. In many ways we are still learning what a "green" building looks like. We'll be much more successful in meeting the challenge if we don't limit how we accomplish the goals that we have defined for the building.
- We need a mechanism to challenge us to go beyond code or beyond our own limits. We need something that will help us continue to improve. If there is not some additional goal to reach it is very likely that we would change some practices and go no further.

Contact

Lynne Eichner Kelley
Energy Analyst
City of Eugene, Facilities

541-682-5083
lynne.m.eichnerkelley@ci.eugene.or.us

www.ci.eugene.or.us

- We need a comprehensive evaluation of the environmental impact of our building—not just the energy impact, or just the impact on the watershed, airshed or internal environment of the building. We have many environmental groups here in Eugene, each with one strongly held concept and all with their own merit. How do we decide which features we will incorporate and evaluate the entire impact of our work?
- We need a common language in order to share our experiences and results with others, locally or nationally. Benchmarking has become a buzzword,but there are so many related programs that it takes too much time to become familiar with them all in order to compare your buildings.
- We need recognition for our efforts. It's not easy to change the direction of a large organization; sometimes we simply need the moral support of recognition. Additionally, in environmentally-oriented Eugene, the citizens want to hear about the steps that their local government is taking toward sustainability.

The City of Eugene's first new building project utilizing LEED 2.0 is the Eugene Public Library, a 127,000 square foot facility currently under construction. The facility is registered under the LEED Rating System and aspires to achieve LEED Certification just below the LEED Silver level.

Application: The City of Eugene uses LEED 2.0 without modification for local conditions. They may develop a LEED Application Guide in the future.

Additional Activities: The GBT will initially build from the city-wide data collected by the ERT and identify potential areas of improvement utilizing current green building technology. The Team will review information on research and application of green building practices in the public and private sector, identifying practices for application to the City, evaluate the costs and benefits of those practices, and recommend changes and additions to the City's internal policies and procedures.

The Team will also evaluate the experience of other jurisdictions in the development and adoption of principle of sustainability, including green building codes and their impact of the development community. The Team will present best practices in other communities and recommend steps that can be taken by the City to encourage adoption of green building practices by the private sector, including green building technologies and environmentally friendly land subdivision and site development practices.

In anticipation of the LEED 3.0 program,the City is developing its own guidelines for application of green building principles in renovation projects and operations and maintenance.

The City initiated its current Energy Management Program in 1994, utilizing utility tracking software to document energy use and establish priorities for completion of energy projects. To date the City has reduced energy consumption in City facilities by over 20%, compared with the 1995 baseline.

How to Adapt LEED for State and Local Use

Based on the LEED Foundations Document, *Winter 2001*

Many organizations affiliated with the U.S. Green Building Council have expressed an interest in understanding how to use LEED at the local level, including whether or not they can incorporate marginal changes to accommodate specific regional or functional needs. Such an approach brings all the advantages of a well-recognized national system while allowing sufficient flexibility to deal with most, if not all,local priorities and special circumstances. Documents governing these applications are called LEED Application Guides.

Application Guides are designed to work within the existing structure of the LEED Green Building Rating System without fragmenting the market with "alternative"' LEED programs. Guides are a combination of the LEED rating criteria—modified within the guidelines presented below to address specific concerns—and the *LEED Reference Guide* that supports the applicant in fulfilling the requirements of specific rating criteria and steers the applicant through the certification process .

Only USGBC members or liaisons may propose and develop a LEED Application Guide that is officially recognized by the Council. Generally, it only makes sense to develop an Application Guide if an organization has a very large construction portfolio, such as a federal, state or local government or agency, or a major corporation.

Adaptation Guides are designed to work within the existing structure of the LEED Green Building Rating System without fragmenting the market with "alternative" LEED programs

Rules for creating LEED Application Guides

A distinct set of rules has been developed to guide organizations interested in proposing and developing their own Application Guides. These rules are presented in the following paragraphs, along with discussion of their purpose.

LEED Core Structure

The LEED Green Building Rating System must be used as the structure and visible core of the Application Guide. The existing prerequisite and credit structure as established in the LEED Green Building Rating System must be followed. The following essential elements are required for each proposed modification of the existing LEED structure:

- Intent
- Requirement
- Strategies

All existing LEED prerequisites are required for projects applying for LEED Certification under an Application Guide.

The existing LEED point structure and rating tiers must be retained. The point structure and rating tiers were created to award projects based on their level of effort as well as for comparison between building projects. Any alteration to the point structure would compromise the certification levels and the ability to compare between LEED-certified building projects.

The *LEED Reference Guide* adds several elements that assist users in interpreting prerequisites or credits in the Rating System. These elements include:

- Required Submittals
- Synergies & Trade-offs
- Summary of Referenced Standards
- Case Studies
- Green Building Concerns
- Resources
- Design Approach

Each Application Guide addition should also include documentation requirements and a summary of all referenced standards (if required). The remaining elements (Green Building Concerns, Design Approach, Synergies & Trade-offs, Case Studies, Resources) assist in understanding the prerequisite or credit in question but are not always necessary or applicable.

It is furthermore necessary that the Application Guide identify the types of projects that are covered by the LEED application. For example, whether the Application Guide is required for the Applicant's own public facilities, or is applicable to private sector buildings in connection with tax credits or other incentives.

Acceptable modifications to LEED

Four general types of modifications to the LEED Green Building Rating System are acceptable and are under the purview of the USGBC to review, both in the Application Guide review process and at the project level. These changes include the following:

1. Converting optional credits to prerequisites.
2. Creation of new credits within the maximum of four points allowed under the Innovation Credits.
3. Modification of existing prerequisites or credits with demonstrated equivalency or higher local standard.
4. Additional guidance on applying LEED prerequisites and credits to local conditions.

Converting Optional Credits to Mandatory Designation

One of LEED's market transformation strengths is its emphasis on performance-based and optional credits to give maximum flexibility to design teams and owners. However, there are prerequisites required of all projects seeking LEED Certification. Some jurisdictions may find it desirable to convert certain optional credits to prerequisites in order to address particularly important local needs and priorities. As such, an owner would stipulate that certain existing credits are deemed mandatory and that all their projects will capture this list of prerequisites. This can be accomplished through the Application Guide. Since it does not change the certification process at the U.S. Green Building Council, it is also the simplest form of modification to implement.

Creation of New Credits

An applicant may use any or all of the four points under the Innovation Credits to create either a new, prescribed mandatory or optional credit that is not covered by existing prerequisites or credits. Please note that only a maximum of four points allowed under the Innovation Credits may be used for any combination of mandatory or flexible credits.

Whether mandatory or optional, any new Innovation Credits prescribed by an Application Guide reduce the number of flexible Innovation Credits available. For example, if two new mandatory credits are added to an Application Guide, only two points remain available for Innovation Credits.

One of LEED's... strengths is its emphasis on performance-based and optional credits to give maximum flexibility to design teams and owners.

Modification of Existing Prerequisites or Credits with Demonstrated Equivalency or Higher Local Standard

The addition of supplemental requirements or changes to existing requirements based on equal or better local standards is called a "Demonstrated Equivalency." For example, an existing LEED prerequisite may reference a national standard. In a local region, however, there may be a stricter or equivalent Local Best Management Practice that the applicant would like to see adopted for projects seeking that credit. This requires substitution of an alternate standard for an existing LEED referenced standard.

In such cases, it must be demonstrated that the alternate standard is equal to or more stringent than the existing LEED referenced standard. To propose an alternate standard to the U.S. Green Building Council and gain approval for an Application Guide, the following table must be completed and submitted. Final approval of all Application Guides is required by the USGBC.

Demonstrated Equivalency to LEED Prerequisites and Credits

For example, for the City of Portland the following local standards are considered equivalencies for the LEED referenced standards in the prerequisites and credits listed:

LEED 2.0 Prerequisite or Credit	Portland LEED Application Guide
Site Prerequisite 1 Erosion and Sedimentation Control	**Uses the** City of Portland *Erosion Control Manual* as the referenced standard
Site Credit 6 Stormwater Management	**Uses the** City of Portland *Stormwater Manual* as the referenced standard
Energy Prerequisite 2 Minimum Energy Performance and **Energy Credit 1** Optimize Energy Performance	**Both use** the 1998 Oregon energy code as the referenced standard

Additional Guidance on Applying LEED Prerequisites and Credits to Local Conditions

Application Guides may include clarification or amplification of certain LEED prerequisites or credits due to any number of conditions specific to a state or local jurisdiction. This additional text may be included in the Application Guide following the LEED Core Structure described above as a secondary paragraph that is clearly identified as the Applicant's "specific" technologies and strategies.

Clarification or Amplification of Existing LEED Prerequisites and Credits

The following are examples of LEED credits for which additional guidance is provided by the City of Portland under a "Portland-specific" Technologies and Strategies heading:

LEED 2.0 Prerequisite or Credit	Portland LEED Application Guide
IEQ Prerequisite 1 Minimum IAQ Performance	**Amplification** of Technologies/Strategies to include additional explanation of ASHRAE Standard 62-1999
IEQ Credit 4 Low-Emitting Materials	**Amplification** of Technologies/Strategies to include additional explanation of specifying low-emitting materials
IEQ Credit 6 Controllability of Systems	**Clarification** of credit requirements that allows for operable windows.

Modifications to LEED Outside of the Guidelines

The USGBC will not evaluate or recognize modifications to LEED outside of the guidelines presented above. However, if an entity wants to develop an "addendum" to LEED that changes point weightings, add more credits or modifications outside of the flexibility mechanisms described above, it can certainly do so with the following caveats:

1. The provisions of the addendum are scored by the entity itself for internal use only.
2. The internal system is not compared publicly to LEED, either favorably or unfavorably.
3. Projects submitted to LEED follow the requirements and documentation set forth by the USGBC and do not include requests to evaluate modifications to LEED outside the parameters established in this document.

Supplemental Prerequisites

There may be cases where the applicant would like ALL projects submitted to address a particular local environmental issue(s) not covered under the existing LEED Prerequisite or Credit structure, while maintaining the credit flexibility provide by the Innovation Credits. In this case, the applicant may propose a new Supplemental Prerequisite. This may be thought of as the creation of a "LEED Plus" for state and local uses.

It must be noted, however, that Supplemental Prerequisites are considered to be outside of the USGBC's review, both within the Application Guide and as applied to registered projects. As such, it will be the responsibility of the applicant to verify compliance with any Supplemental Prerequisites included in an Application Guide. Furthermore, while Supplemental Prerequisites may be deemed mandatory by an Application Guide, they *cannot* be converted to point-carrying credits in excess of the four points allowed under the Innovation Credits.

Project Review and Certification

Projects using a USGBC-approved LEED Application Guide must follow the same certification process as described in the LEED Reference Guide. These projects should designate whether a particular Application Guide is being followed when registering the project,as well as in the application for LEED Certification.

Review of the project certification application by the U.S. Green Building Council will be based on the requirements of the specified Application Guide, or the parameters set forth in the LEED Reference Guide. After the project application has been reviewed, the project will be certified and awarded the appropriate LEED rating level.

Fee: An additional fee may be assessed to applicants if extra review time is needed for non-standard requirements contained in a particular LEED Application Guide. Fees will be negotiated with the submitting entity as part of the Application Guide approval process.

Definitions

Application Guides:
A document reviewed and approved by the USGBC that augments and supports a government or other entity's use of the LEED Rating System within the guidelines and requirements of the USGBC. The process of applying to the USGBC for review and approval of a draft Application Guide begins by contacting Program Manager Peter Templeton at the USGBC: *ptempleton@usgbc.org*.

An early example is the City of Seattle's *CIP Supplements to the LEED Rating System* (available as a downloadable PDF at *www.cityofseattle.net/sustainablebuilding/Leeds/*), which is currently being applied to City of Seattle building projects.

Calculations:
These are sample formulas or computations to assist with the determination of compliance for a particular prerequisite or credit.

Case Studies:
These are provided to present an example of the successful implementation of the goals stated for the prerequisite or credit.As an illustration,the selected project exemplifies one way to achieve the results of the measure, although there may be other methods.

Community Issues:
These focus attention on the benefits or disadvantages to the surrounding community and our built environment that result from the implementation of the measure.

Certification Process:

The LEED Certification System is a three-step process designed for convenient and economical use.

Step 1: Project Registration

Step 2: Technical Support

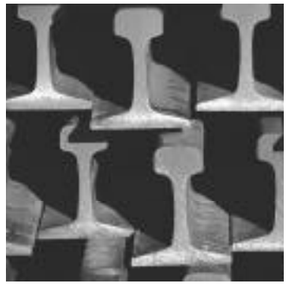
Step 3: Building Certification

More details and application instructions are available in the *LEED Reference Guide* or on-line at *www.leedbuilding.org*.

If the entity sponsoring an Application Guide wished to convey some additional recognition to a project, it is certainly welcome to do so. For instance, a City of Seattle building project that follows the Seattle LEED supplement might be awarded a City certificate indicating that the project has not only achieved the LEED Silver level, but has also conformed to the supplementary LEED requirements.

Design Approach:
General recommendations for the design of the project in order to achieve the performance goals stated in the measure.

Innovation Credits:



There are two types of innovation strategies that qualify for LEED points. One type of innovation strategy is to greatly exceed the requirements of an existing LEED credit. For instance, if a project incorporates energy or water efficiency measures that greatly exceed the requirements set forth by LEED, then an innovation credit is available to recognize an extraordinary effort.

The other type of innovation strategy is a measure that is not addressed by any LEED credits. An example of such a measure might include extraordinary educational benefits, community benefits, or environmental mitigation.While LEED is a comprehensive framework for green building, there are many sustainable measures that have not been addressed within LEED and this credit is included to cover these special circumstances.

For both types of innovation strategies, the measures implemented must be over and above any sustainable measure addressed in existing LEED credits. Simple signage as an education benefit would not qualify for an innovation credit. Conversely, a visitor's center and interactive display, coupled with a Web site and video, would be an appropriate level of effort for earning an innovation credit. In other words, significant effort must be made in order to achieve an innovation credit. Points are not awarded for little or no effort.A separate set of submittals is required for each point awarded. In other words, one measure can receive a maximum of one point. This allows for four independent sustainable measures to be applied to this credit.

Application Guides may require new, prescribed Mandatory Credits under the maximum of four points allowed under the Innovation Credits, or may offer these as prescribed Optional Credits to facilitate their application in projects. Whether Mandatory or Optional, any new Innovation Credits in an Application Guide reduce the number of flexible Innovation Credits available. For example, if two new mandatory credits are added to an Application Guide, only two points remain available for Innovation Credits.

Lobby of the LEED Gold-rated Jean Vollum Natural Capital Center, home of the City of Portland's Office of Sustainable Development, Portland, OR

Examples of Optional Innovation Credits include the following from the City of Portland:

Category	Portland LEED Innovation Credits
Innovation Credit 1 *Mixed Use Development*	**One point**[1] available for mixed use, transit-oriented development
Innovation Credit 2 *Alternative Transportation*	**One point**[1] available for providing each of the following: • 50% of locally required minimum[2] or 30% of locally allowed maximum number of parking spaces, whichever provides fewer
	• Further limiting parking to no parking for new construction projects beyond the requirements of the Americans with Disabilities Act (ADA)
Innovation Credit 3 *Stormwater Management*	**One point**[1] available for providing each of the following at sites with a Floor Area Ratio (FAR) greater than 1:
	• 50% mitigation per *Bureau of Environmental Services Stormwater Manual* for surface-level impervious surfaces
	• 100% mitigation per *Bureau of Environmental Services Stormwater Manual* for surface-level impervious surfaces
	• 50% mitigation per *Bureau of Environmental Services Stormwater Manual* for impervious roof surfaces
	• 100% mitigation per *Bureau of Environmental Services Stormwater Manual* for impervious roof surfaces
Innovation Credit 4 *Construction Waste Management*	**One point**[1] available for recycling and/or salvaging at least 90% (by weight) of construction,demolition and land clearing debris
Innovation Credit 5 *Low-Emitting Furnishings*	**One point**[1] available for selecting office furnishings, such as workstations, to reduce VOC emissions
NOTES:	[1] *Total LEED maximum number of allowable Innovation Credits remains at four* [2] *Must be negotiated based upon project location*

Intent:
The main goal of a LEED prerequisite or credit.

LEED Reference Guide:
A supporting document to the LEED Green Building Rating System. The Guide is intended to assist project teams in understanding LEED criteria and the benefits of complying with each criterion. The Guide includes examples of strategies that can be used in each category, case studies of buildings that have implemented these strategies successfully, and additional resources that will provide more information. The Guide does not provide an exhaustive list of strategies for meeting the criteria. There will be new strategies employed by designers that satisfy the intent of each credit. Nor does it provide all the information that design teams need to determine the applicability of a credit to their project.

Point Structure and Rating Tiers:
A total of 69 points are available within four categories of certification:

- LEED Platinum™ for buildings that earn 52 or more of the available points
- LEED Gold™ for buildings that earn between 39 and 51 of the available points
- LEED Silver™ for buildings that earn between 33 and 38 of the available points
- LEED Certified™ for buildings that earn between 26 and 32 of the available points

Referenced Standards:
The required standards for measuring compliance with the credit intent.
A brief summary of the standard is also provided in this section. However, applicants should reference the standard and not rely solely on the summary.

Requirements:
These specify the performance criteria to satisfy the prerequisite or credit and the number of points available. While the prerequisites must be achieved, each credit is optional but contributes to the overall project score.

Some credits are divided into two or more measures with cumulative points. For example, Materials & Resources Credit 4: Recycled Content is divided into Credit 4.1, for achieving 25% (worth one point), and Credit 4.2, for achieving 50% (for an additional point).

Submittals:
The documentation required for the LEED application. Checkboxes are used to keep track of the required documents for submittal.

Supplemental Prerequisites:
A Supplemental Prerequisite consists of a requirement outside of LEED itself, such as the following by the City of Seattle:

Category	Seattle LEED Supplemental Prerequisite
Site Prerequisite 2 *Landscape and Grounds Management*	**Requires compliance** with the City of Seattle Landscape and Grounds Management Guidelines

Another example is the following by the City of Portland:

Category	Portland LEED Supplemental Prerequisite
Site Prerequisite 2 *Alternative Transportation*	**Requires** a Transportation Management Plan providing on-going transportation alternatives incentives

DEFINITIONS

U.S. Green Building Council
1015 18th Street, NW, Suite 805
Washington, DC 20036

t. 202.828.7422
f. 202.828.7722

e. *info@usgbc.org*
w. *www.usgbc.org*

About the USGBC

U.S. Green Building Council (USGBC)
The U.S. Green Building Council is the nation's foremost coalition of leaders from across the building industry working to promote buildings that are environmentally responsible, profitable, and healthy places to live and work.

Since its formation in 1993, the U.S. Green Building Council has fulfilled this need, becoming the center for debate and action on environmental issues facing the industry's multiple interests. The Council has grown to more than 2,000 international organizations including product manufacturers, environmental leaders, building and design professionals, retailers, building owners, financial industry leaders, and local,state, and federal agencies.

The mission of this unique coalition is to accelerate the adoption of green building practices, technologies, policies, and standards. Through its committee-based organization, the USGBC endeavors to move the green building industry forward with market-based solutions. Another vital function of the Council is linking industry and government. The Council has formed effective relationships and priority programs with key federal agencies, including the U.S. DOE, EPA,NIST, and GSA.

Cambria Office Building (LEED 2.0 Gold), Pennsylvania Department of Environmental Protection,Ebensburg, PA

USGBC Members or Liaisons
The Council's membership is open and balanced. It is comprised of leading and visionary representation from all segments of the building industry. This type of representation provides a unique, integrated platform for carrying out important programs and activities.

Membership Categories include:

- Architects, Engineers, Interior Designers, Landscape Architects, and Planners
- Building Owners, Managers, Users, and Brokers
- Contractors and Builders
- Corporate and Retail Companies
- Federal Government
- Financial and Insurance Institutions
- Nonprofit and Environmental Organizations
- Product Manufacturers, Building Controls, Service Contractors, and Distributors
- Professional Societies
- Real Estate Corporations
- State, Local, and Federal Governments
- Universities and Research Institutes
- Utilities/Energy Service Companies

Members have access to a clearinghouse of the best green building-related information possible on emerging trends, policies, and products. These include product databases, case studies, staff papers, directories, and other resources. Information is the key to the success of any business, especially one evolving so quickly.

Members gain networking opportunities with industry leaders and policy makers. From forums to advisory boards, from conferences to committee meetings, the Council provides myriad opportunities to expand one's network and forge working relationships with industry leaders, key policy makers, and strategic partners like AIA, ULI, BOMA, IFMA,and CSI.

Frequently Asked Questions

Q. What would adopting LEED mean for my state or local government?
State and local governments have adopted the LEED Rating System to establish a standard, certified benchmark for performance on both public and private projects. Examples include requiring capital projects to be reviewed by the USGBC for LEED Certification or tying financial incentives to demonstrated performance under the LEED Rating System.

Q. What would creating a LEED Supplement do for my state or local government?
Local or State Supplements to LEED are created to work synergistically with the existing LEED Green Building Rating System and certification process while permitting some tailoring of the requirements to address local priorities. This customization can include adding locally enforced requirements or prerequisites, establishing equivalence between local codes and the LEED referenced standards, or converting optional credits to prerequisites for local projects.

Q. What would creating a LEED Application Guide do for my state or local government?
LEED Application Guides are created to work within the existing structure of the LEED Green Building Rating System and to allow state and local entities to tailor existing prerequisites and credits to their own regional or functional needs. This is a major commitment for any state or local government embarking on this approach. Local Application Guides must be updated to reflect any and all changes to the LEED Rating System to ensure compatibility with new LEED versions and Sector Application Guides.

Q. Who do I contact about developing a LEED Supplement or Application Guide?
Contact Peter Templeton, LEED Program Manager, U.S. Green Building Council, at 202.828.7422 x137 or ptempleton@usgbc.org.

Q. Where can I get information about the LEED Rating System in general?
Visit the U.S. Green Building Council Web site at www.usgbc.org *or contact us by e-mail at:* leedinfo@usgbc.org.

Q. What fees may be incurred in developing a LEED Supplement?
Since a LEED Supplement is developed and managed by the state or local government entity, there would be no additional fees beyond the standard LEED Certification fees. If, however, the USGBC were involved with reviewing any of the supplementary requirements as part of the certification process, then special fees would need to be negotiated with the relevant entity to cover additional time needed to review the non-standard requirements.

Q. What fees may be incurred in developing a LEED Application Guide?
The state or local entity proposing a LEED Application Guide bears full responsibility for all development costs including review time required for USGBC approval. Fees will be negotiated based on the proposed requirements. An additional fee may also be assessed to projects seeking certification if extra review time is needed for non-standard requirements contained in the LEED Application Guide.

Q. What modifications to LEED are allowed in a Supplement?
Since the supplement is developed, owned and operated by the state or local government entity itself, there are no restrictions to the modifications to LEED criteria that may be included. However, these criteria would always need to demonstrate equivalency or exceed LEED criteria if submitted projects from this area were to achieve LEED Certification.

Q. What modifications to LEED are allowed in an Application Guide?
The USGBC will accept four types of modifications in an approved LEED Application Guide:

- *Stipulation that some existing LEED credits are deemed mandatory by the Application Guide*
- *Creation of new credits within the maximum of four points allowed under the Innovation Credits*
- *Demonstrated equivalency to existing LEED prerequisites and credits*
- *Additional guidance on applying LEED prerequisites and credits to local conditions*

Q. What do I need to do in order to use a local standard instead of the LEED referenced standard in a credit or prerequisite?
It must be demonstrated that the alternate standard is equal to or more stringent than the existing LEED referenced standard. To propose an alternate standard to the U.S. Green Building Council and gain approval for an Application Guide, a comparison table must be completed and submitted showing the credits adapted. USGBC approval of all Application Guides is required.

Q. What do I do when I'm ready to register a project under an approved Application Guide?
Projects using a USGBC-approved LEED Application Guide must follow the same certification process as described in the LEED Reference Guide.
Projects must note that a particular Application Guide is being followed when registering the project, as well as when submitting their project documentation for LEED Certification.

LEED Users Summary
Updated: 7-31-02

Prepared by:
Peter Templeton

LEED Program Manager

202-828-7422 ext. 137
ptempleton@usgbc.org

Resources

FEDERAL USERS:

DOE: The Department of Energy supported the development of the LEED Rating System,training workshops, and reference materials.

DOI: The Department of the Interior has signed a Memorandum of Understanding with the U.S. Green Building Council agreeing to use LEED for Existing Buildings™.

Contact: Heather S. Davies
202-208-7884
heather_davies@ios.doi.gov

EPA: The Environmental Protection Agency participated in the pilot testing of LEED version 1.0, but did not earn project certification. The Agency currently has two laboratory projects registered and is supporting development of LEED for Existing Buildings.

GSA: The General Services Administration requires that all building projects beginning design in 2003 meet LEED Certified level standards. To support this policy, the GSA has signed a Memorandum of Understanding with the USGBC agreeing to use LEED on all new projects. It is not requiring that all projects apply for certification, however, it has 19 projects registered including federal courthouses, laboratories, border stations, and office buildings. The GSA is the nation's largest tenant, managing space in over 8,300 owned and leased buildings for over one million federal employees. GSA was the Council's first federal member.

Contact: Don Horn and Debra Yap
202-501-4525
donald.horn@gsa.gov, debra.yap@gsa.gov

State: The Department of State has committed to using LEED on the construction of 180 new embassies worldwide over the next 10 years and worked with the USGBC to coordinate a green charrette for the project teams in early 2001. The Department has multiple projects registered with LEED.

Contact: David Barr
703-875-6179
Barrdp@state.gov

Air Force: The Air Force has developed a LEED Application Guide for Lodging projects and has registered projects for LEED Certification.

Army: The Army has adopted LEED into its Sustainable Project Rating Tool (SpiRiT), but is not requiring certification of its projects.

Navy: The Navy was the first federal entity to certify a LEED project, the Bachelor Enlisted Quarters at the Great Lakes Naval Training Center. This project was certified under the Pilot version of LEED. Navy currently has one project registered with LEED and is supporting the development of LEED Residential.

Contact: Mike Chapman, Naval Facilities Command
202-685-9175

STATE USERS:

California: California is currently considering LEED adoption has developed a draft LEED Supplement for state projects.

Contact: Tom Estes,
California Integrated Waste Management Board
916-341-6000
testes@ciwmb.ca.gov

Contact: Gary Flamm, California Energy Commission
916-654-2817
gflamm@energy.state.ca.us

Connecticut: The Connecticut Green Building Council is promoting public adoption of LEED in the State Legislature.

Contact: Dick Barredo
860-563-5851
richard.barrado@ctiinovations.com

Maryland: Maryland adopted LEED Certification for all state capital projects greater than 7,000 gsf in October 2001.An implementation plan for the new policy is completed. The state currently offers a green building tax credit for commercial projects. Further information on Maryland's activities: *http://business.marylandtaxes.com/taxinfo/taxcredit/greenbldg/default.asp*

MD Green Building Council contacts:

Mark Bundy, MD Dept. of Natural Resources
410-260-8720
mbundy@dnr.state.md.us

Steve Gilliss, MD Dept. of General Services
410-767-4675
sgilliss@dgs.state.md.us

Massachusetts: Massachusetts is considering LEED adoption for all state projects

Contact: John DiModica, Dept. of Capital Planning
617-727-4030
John.DiModica@dcp.state.ma.us

New Jersey: The New Jersey Economic Development Authority is encouraging the use of LEED on its $12 billion public school construction program. The New Jersey Department of Environmental Protection is supporting the development of a LEED application guide for K–12 and higher education facilities.

Contact: Mark Lohbauer, Economic Development Authority
609-292-1800
Donald Wheeler, Chair,
LEED for Schools Organizing Committee
201-445-9272

New York: New York Governor Pataki issued an executive order in June 2001 encouraging but not requiring state projects to seek LEED Certification. The New York State Green Building Tax Credit Program provides a tax incentive to commercial developments incorporating specific green strategies (not directly tied to LEED).
New York Green Building Tax Incentive Program:
www.dec.state.ny.us/website/ppu/grnbldg/index.html
New York Executive Order:
www.gorr.state.ny.us/gorr/EO111_fulltext.htm

Contact: Craig Kneeland, NYSERDA
518-862-1090,ext. 3311
cek@nyserda.org

Oregon: Oregon's 35% Business Energy Tax Credit for commercial development is tied to LEED Certification level

100,000 sf. LEED Silver building eligible for $105,000 tax credit
100,000 sf. LEED Gold building eligible for $142,500 tax credit

http://arcweb.sos.state.or.us/rules/OARS_300/OAR_330/330_090.html

Pennsylvania: LEED Silver certification is required in new construction RFPs issued by the Department of Environmental Protection and Department of General Services. A draft bill requiring LEED Certification of state projects was released for review in March 2002.

House bill 2433 including a High Performance Green Building Tax Credit is currently under committee review.
www.legis.state.pa.us/WU01/LI/BI/ALL/2001/0/HB2433.HTM

Four state funds including the $20 million Sustainable Energy Fund provide grants, loans and "near-equity" investments in energy efficiency and renewable energy projects in Pennsylvania.

Contact: Paul Zeigler, Engineering &Building Technology
Governor's Green Government Council
717-772-5161
pazeigler@state.pa.us

Washington: Currently, use of the LEED Rating System is voluntary; however, pending legislation may require state and college facilities be built to LEED Silver.

RESOURCES

MUNICIPAL USERS:

Several municipalities are currently requiring LEED Certification of their projects:

Austin, TX: Austin requires LEED Certification of all public projects over 5,000 gsf.
City of Austin Green Building Program:
http://www.ci.austin.tx.us/greenbuilder/

Contact: Richard Morgan,
City of Austin-Green Building Program
512-505-3709
richard.morgan@austinenergy.com

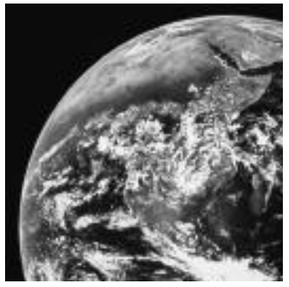
Arlington, VA: Arlington County allows commercial projects earning LEED Silver certification to develop sites at a higher density than conventional projects.

All site plan applications for commercial projects are required to include a LEED Scorecard regardless of whether or not the project intends to seek LEED Certification.

Contact: Joan Kelsch
703-228-3599

Boulder, CO: Boulder requires all municipally funded new construction and major addition projects to achieve LEED Silver certification. The City is considering requiring certification of commercial projects or developing a LEED-based incentive program.

Contact: Christine Andersen, Deputy City Manager
andersenc@ci.boulder.co.us



RESOURCES

Cook County, IL: The Cook County Commissioner adopted an ordinance requiring LEED Silver Certification of all new county building projects and encouraging the application of LEED to existing building retrofit and renovation projects.
www.cookctyclerk.com/agendas/2001/020601/ordinance.htm

Kansas City, MO: The City of Kansas City, Missouri, has formed a LEED committee to research the adoption of LEED Certification of public projects. The committee will report its findings in the spring 2002 with a final decision on adoption anticipated by mid-year.

Contact: J.C.Alonzo
816-746-4777
jc_alonzo@yahoo.com

King County, WA: King County Executive Order FES 9-3 (AEP) requires all new public construction projects to seek LEED Certification and encourages the application of LEED criteria to building retrofits and tenant improements. A local LEED Application Guide is currently under development.

Contact: Theresa Koppang
King County Solid Waste Division
theresa.koppang@metrokc.gov

Los Angeles, CA: On April 19, 2002,the Los Angeles City Council voted in favor of requiring LEED Certification of all public works construction projects greater than 7,500 gsf.

Contact: Deborah Weintraub, City Architect
213-847-6370
dweintra@eng.lacity.org

In March 2002, LEED Certification of new construction projects was approved as part of the $1.6 billion bond proposition funding building projects on the nine campuses of the Los Angeles Community College District.

Goodwillie Environmental School (LEED registered project), Forest Hills Public Schools,Ada,MI

New York,NY: New York City is moving towards increased use of LEED as a complementary tool to its High Performance Building Guidelines.

Contact: Hillary Brown,
New York City Department of Design and Construction
718-391-1371
BROWNH@ddclan.cn.ci.nyc.ny.us

Portland, OR: Portland requires LEED Certification of all public projects over 5,000 gsf and has developed Portland LEED supplement. Portland's LEED incentive program provides funding to commercial projects to offset costs of certification:$15,000 for LEED Certified and $20,000 for LEED Silver ratings.
City of Portland g-rated incentive programs:
www.green-rated.org/g_rated/grated.html

Contact: Rob Bennett, Office of Sustainable Development
G/Rated - City of Portland Green Building Program
503-823-7082
bennett@ci.portland.or.us

This site also contains a link to the City of Portland cost comparison study at
www.green-rated.org/g_rated/resources/003.pdf

San Diego, CA: San Diego Mayor Dick Murphy included requiring LEED Silver certification of all municipal projects among his 10 goals for the year in his 2002 State of the City Address. The City has subsequently adopted LEED for all public projects.

Contact: Richard Hayes, Director, Environmental Services
858-492-5056
rhayes@sandiego.gov

Mayor's office: Tom Story, Sr. Policy Advisor
619-236-6568
tstory@sandiego.gov

San José, CA: San José requires LEED Certification of all municipal projects over 10,000 gsf.

Contact: Mary Tucker
408-277-4111
mary.tucker@ci.sj.ca.us

or Darren Bouton
408-277-4670
Darren.Bouton@ci.sj.ca.us

RESOURCES

There is a longer list of local governments that are working towards adopting LEED for public projects. Visit the USGBC Web site, *www.usgbc.org*, for more information or to view the most current lists of LEED Certified and registered projects.

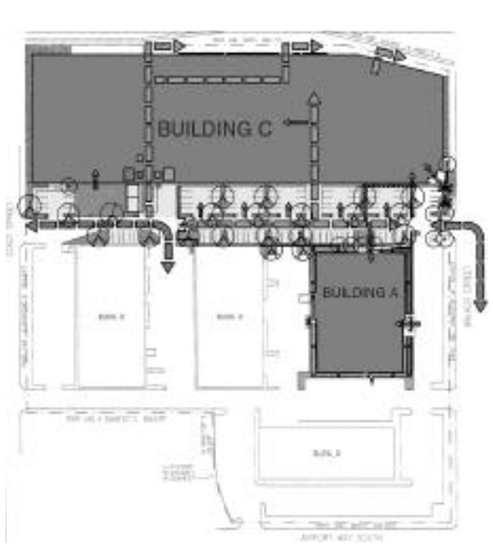
RESOURCES

San Mateo, CA: San Mateo adopted a municipal requirement for LEED Certification of public projects in December 2001.

Contact: Jill Boone, Recycling Program Coordinator
650-599-1433
jboone@recycleworks.org

Seattle, WA: Seattle requires LEED Silver certification of all public projects over 5,000 gsf.
City of Seattle Sustainable Building Policy:
The City's Sustainable Building Policy was unanimously endorsed by the City Council and signed by the Mayor in Februrary 2000. The policy uses the U.S. Green Building Council's LEED Rating System to evaluate City projects.
www.cityofseattle.net/util/rescons/susbuild/policy.htm

Contact: Lucia Athens, Sustainable Building Program
206-684-4643



Site plan of Park 90/Building 5C (LEED registered project), City of Seattle, WA.

Design and production: Laura Lamar / MAX Design Studio • Printed by Artisan Printing • Printed on 100% post-consumer recycled paper with soy inks