Helpful Websites

The links below will help learn more about sustainable features that can be incorporated into building design.

Water Sense: **www.epa.gov/watersense**

Water Wiser: **www.awwa.org/waterwiser**

Low-flow Water: **www.zeroflush.com**

Energy Star Products: **www.energystar.gov**

State Incentives: **www.dsireusa.org**

LEED Certification: **www.usgbc.org**

Greenguard: **www.greenguard.org**

Green Building Certification Institute: **www.gbci.org**

Building Decision Support : **http://cbpd.arc.cmu.edu/ebids**

Brownfield Redevelopment: **www.epa.gov/brownfields**

Green Roofs: **www.greenroofs.com**

'Green' Power Suppliers: **www.green-e.org/about.shtml**

Green Seal Program: **www.greenseal.org**

FSC-Certified Products: **www.fscus.org**

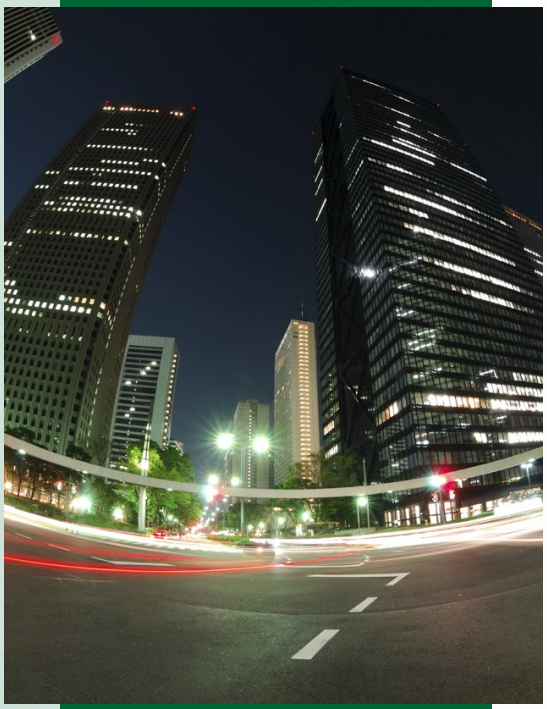
Eco-Labeling: **www.greenerchoices.org/eco-labels**

Prepared by Charles Miller for Senior Thesis. Ideas and suggestions are based on research and surveys of AEC professionals.

The table below highlights the point changes from LEED version 2.2 to LEED version 3.0.

Credit	LEED v2.2	LEED v3.0
SSc2 Development Density & Community Connectivity	1 point	5 points
SSc4.1 Alternative Transportation, Public Transportation Access	1 point	6 points
SSc4.3 Alternative Transportation, Low-Emitting & Fuel-Efficient Vehicles	1 point	3 points
SSc4.4 Alternative Transportation, Parking Capacity	1 point	2 points
WEp1 Water Use Reduction, 20%	1 point	Prereq.
WEc1.1 Water Efficient Landscaping, Reduce by 50%	1 point	2 points
WEc1.2 Water Efficient Landscaping, No Potable Use or No Irrigation	1 point	2 points
WEc2 Innovative Wastewater Tech.	1 point	2 points
WEc3 Water Use Reduction, 30%	1 point	2 points
WE c3 Water Use Reduction, 35%	N/A	3 points
WE c3 Water Use Reduction, 40%	N/A	4 points
EAc1 Optimize Energy Performance	1–10 pts.	1–19 pts.
EAc2 Onsite Renewable Energy	1–3 pts.	1–7 pts.
EAc3 Enhanced Commissioning	1 point	2 points
EAc4 Enhanced Refrigerant Mgmnt.	1 point	2 points
EAc5 Measurement & Verification	1 point	3 points
EAc6 Green Power	1 point	2 points
MRc1.1 Building Reuse, Maintain 55% of Existing Walls, Floors & Roof	N/A	1 point
MRc1.1 Building Reuse, Maintain 75% of Existing Walls, Floors & Roof	1 point	2 points
MRc1.1 Building Reuse, Maintain 95% of Existing Walls, Floors & Roof	2 points	3 points
IEQc4.3 Low-Emitting "Materials, Carpet" Systems		"Flooring"
Regional Priority Credits	N/A	1–4 pts.

Owning Sustainability



Guide for Owner Success in Developing Sustainable Buildings

General Building Sustainability Success Steps

The following has been determined to be contributing factors in successful sustainable building project.

Early Commitment:

Avoid waiting to make decisions, cost effects are greater the further into a project they are made. After schematic design it is difficult to implement new design concepts.

Hiring Design Professional:

It is important to hire a design professional with experience. Professionals should demonstrate their commitment to maximizing building performance. To appropriately select a design professional look for a team that:

- Are enthusiastic about sustainable design
- Are enthusiastic about sustainable design
- Are committed to maximizing building performance
- Are capable of meeting energy targets
- Contain energy/sustainability expert
- Are familiar with new materials
- Are familiar with new energy technology
- Proficient with sustainable rating criteria, such as LEED
- Understand code requirements
- Cite completed successful projects

Develop Suitability Policy:

Owners need to define goals for a project to minimize schedule and cost. The very first part of a sustainability policy is announcing the owner's commitment to the environment. Sustainability goals with criteria for success should follow. The policy should also include a statement stressing the importance of team integration.

Some sustainability levels are relatively simple to reach and should be required by your sustainability policy.

What is LEED?

LEED stands for Leadership in Energy and Environmental Design. It is a rating criteria based on points for sustainable buildings that supports an integrated team approach to holistic design and construction of sustainable buildings. The following highlights the various criteria that can be awarded points for sustainable features.

LEED Rating System

The LEED rating system is an appropriate tool if there is a desire to measure the sustainability of a project. The criteria from LEED should be implemented into a sustainability policy to set clear goals and expectations. The following outlines varies aspects of LEED criteria.

Site Selection:

The category of site selection rewards points for developing in a location that will minimize the effects on the local ecosystem. Points for site selection are commonly overlooked. Owners typically already own a property so depending on your purchase several sustainable site credits may be out of reach. With site location consideration before purchase several points can be easily earned.

Water Efficiency:

The purpose of water efficiency credits is to reduce the amount of water supply required for a building and to reduce the amount of water entering storm and sewer lines. Many new fixtures have come onto the market that can reduce the amount of water used and make obtaining these points feasible. One change in the LEED credits is that a 20% reduction is now a prerequisite for points, and 30% is the minimum reduction necessary to start gaining points. With modern technology this is still very achievable.

Energy and Atmosphere:

The purpose of Energy and Atmosphere criteria is to optimize building energy performance. This is a primary focus of LEED therefore there are more points available. The main areas of points for this criteria come from Optimize Energy Performance and Renewable Energy. It is important to note the increasing the efficiency of the building's systems will provide greater long term cost savings.

Materials & Resources:

Materials and Resource credits are awarded for reduction in waste from the selection and use of sustainable materials. The design professional is critical to the success of meeting LEED criteria. The design professionals should have the experience and knowledge to determine the best sustainable materials for the building. There are several programs that aid in the material selection. These programs include the global ecolabling network, green seal, and green spec listed. During construction extra attention may be needed to assure contractors are complying with waste recycling. Compliance is most effective by the owner, superintendent and other upper management stressing the issue.

Indoor Environmental Quality:

The purpose is to maximize occupant health and comfort. Points are earned by increasing ventilation, day lighting, and occupant control. Health and comfort are critical factors in increasing occupant productivity and employee satisfaction.

Innovation and Design:

These credits are assigned to stimulate new ideas and uses of new materials and products to design better and better buildings. The purpose of these credits is to seek improvement instead of replicating what worked last time.

Regional Points:

Regional Priority credits have been created to address geographic specific environmental priorities.