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LEED®

Description:

The Leadership in Energy and Environmental Design (LEED) Green Building rating System™ is a nationally accepted benchmark for the design, construction, and operation of high-performance, healthy, sustainable, energy-efficient buildings. Developed in 1999 by the U. S. Green Building Council, LEED is voluntary, point-based certification system that measures and certifies how well a building performs as a green building.

LEED promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health:

- *Sustainable Site Development:*
 - LEED encourages selecting sites that are close to community resources, maximizing quality of life and reducing time and energy expended in travel.
 - LEED buildings avoid destructive construction practices and have landscaping and other elements that protect the building site.
- *Water Conservation:*
 - LEED buildings use innovative strategies to reduce a building's water consumption and to find creative ways to recycle/reuse water.
- *Energy Efficiency:*
 - LEED buildings use 20-60 per cent less energy than buildings built to current codes. Less energy means lower utility bills every month for the life of the building.
- *Materials and Resources Selection:*
 - LEED buildings use locally produced, recycled, reclaimed, and responsibly obtained materials as much as possible.
- *Indoor Environmental Quality:*
 - LEED buildings are designed to maximize replenished fresh air and minimize exposure to toxins and pollutants.

The level of performance achieved in the above categories is separated into four performance tiers: Certified, Silver, Gold, and Platinum, based on the number of points the project achieves in the rating system. A LEED Accredited Professional (LEED AP) can assist in determining the most practical level of LEED certification, as applicable to a particular project and budget parameters.

LEED certification in new construction and renovation is growing nationwide among all types of structures, including private homes, multiunit rental housing, schools,

health care facilities, commercial buildings, and corporate offices. Residents, building occupants, workers, and investors seek the health, productivity, and financial benefits of creating green, healthy living environments. For example, according to the U.S. Green Building Council, green schools cost less to operate, freeing up resources to improve students' education; their carefully planned acoustics and abundant daylight make it easier and more comfortable for students to learn; their clean indoor air cuts down sick days and gives children a head start for a healthy, prosperous future; and their innovative design provides a wealth of hands-on learning opportunities.

USGBC recently teamed with the Congress for New Urbanism and Smart Growth America to create LEED for Neighborhood Development (LEED-ND). LEED-ND emphasizes Smart Growth planning and zoning principles in a larger, community context.

Benefits:

- For architects, developers, builders, and owners: LEED is a checklist used to set targets and track progress during the design and construction of a green building.
- For homebuyers: LEED is a scorecard—like a nutrition label—that gives a clear, concise picture of all the ways a green home performs at a higher level.
- For residents: LEED is a seal of quality, third-party verification providing peace of mind that they are living in a truly healthy, efficient home environment.
- For older people and families (especially relevant to those on fixed incomes): a LEED building is assurance of continued long-term reduced utility costs, and a healthy indoor living environment.
- For the wider community: a LEED building means reduced long- and short-term impacts on the local environment, reduced emissions, reduced burdens on the local infrastructure, reduced pollutants, and a reduced carbon footprint.
- Although LEED building characteristics/priorities will vary with geographic area and building type, the LEED process accommodates these variations, with the end result of a sustainable green building being just as viable in any location.

Impediments or barriers to development or implementation:

Impediments to implementation of LEED-certified buildings include lack of public awareness, and misconceptions about the additional up-front development and construction costs of LEED buildings vs. payback benefits:

- *Public Awareness:*
 - Although LEED has been around for some ten years, it is only in the past few years (due in part to widely fluctuating oil prices, economic conditions, and increasing awareness of climate change) that we have seen the LEED movement slowly gain traction. As more LEED buildings are developed, and

with continued information-dissemination such as this document, this impediment becomes minimized.

- *Added Costs of LEED Buildings:*
 - Although there are some added development and construction costs associated with LEED buildings (typically 3-10 per cent), because of the reduced operating costs and increased efficiency of a LEED building (typically 30-70 per cent), the payback, including reduced utility costs, increased resale value, increased marketability, etc., more than offsets the increased up-front costs. The desired level of LEED certification also has a direct impact on the added costs; i.e., a building certified at the lowest LEED level will cost less than a LEED platinum-level certification, although there will be a corresponding difference in the level of efficiency.

Resource—examples:

- Affordable Green Housing, City of Schenectady, Schenectady, New York; 14 affordable, 4-bedroom urban infill houses, LEED certified at Gold and Platinum levels (includes 1st New York State LEED Platinum house); contact: Ann Petersen, APetersen@schenectadyny.gov.
- U.S. Green Building Council's web site includes examples of successful LEED-certified green homes and buildings, including Morrisania Homes in The Bronx, New York State's first LEED-certified (Silver level) affordable housing project: <http://greenhomeguide.com/search/phrase/morrisiana+homes%2C+in+the+bronx>.
- The Solaire, 27-story, 293-unit rental housing development, 20 River Terrace, Battery Park City, New York, LEED-certified at the Gold level: http://www.thesolaire.com/documents/green_building.html. and http://www.cement.org/buildings/buildings_green_solaire.asp.
- Jeff Rogers' private home, 9 Sunset Road, North Truro, MA, Southern New England's and Massachusetts' first home certified at the Platinum level: <http://www.blog.thesietch.org/2007/12/21/new-englands-first-leed-platinum-certified-home/> and <http://www.negreen.com/>.
- Living Homes' model home, a zero-energy, zero-water, zero-waste, zero-carbon, Zero-emissions residence with LEED certification at the Platinum level. LivingHomes makes LEED-certified, prefabricated homes available to consumers nationwide. According to the U. S. Green Building Council, this model home is expected to demonstrate that incorporating sustainable design into the construction process will help to lower operating costs, increase home value, reduce maintenance issues, and improve indoor environmental quality in the long-term. <http://www.treehugger.com/sustainable-product-design/livinghomes-awarded-leed-for-homes-platinum.html>.
- AMD Lone Star Campus, Austin Campus, Austin, Texas, 860,000 sq. ft. corporate development with the entire facility LEED-certified at the Gold level; facility consists of four office buildings, three parking garages and the Lone Star

Commons Building, which will include an employee cafeteria, fitness center, and conference facilities:

<http://www.austin-ind.com/commercial/experience/browse-projects/projects/amd-lone-star-campus>.

- Fossil Ridge High School, Poudre School District, Fort Collins, Colorado, 290,000 sq. ft. building with capacity for 1,800 students, LEED-certified at the Silver level:
<http://www.fmlink.com/article.cgi?type=Sustainability&title=Case%20Study%3A%20Building%20a%20LEED-Certified%20School%20without%20Spending%20More%20%26%23151%3B%20Through%20Energy%20Savings&pub=USGBC&id=40633&mode=source> .
- M. Landman Communications and Consulting (January, 2011), "LEED Platinum Certified Buildings," a list of all building projects worldwide that have the LEED Platinum certification (by U.S. state and by country), compiled from the U. S. Green Building Council's searchable Certified Projects database.
<http://www.mlandman.com/gbuildinginfo/leedplatinum.shtml>.
- Green Project Exchange™, a web-based, user-driven site that showcases replicable, environmentally focused projects from communities across New York State. Posts to the Exchange are contributed by project leaders interested in sharing success stories, best practices, and tested solutions that work:
<http://syracusecoe.org/gpe/>.

Resource—written and web:

- U. S. Green Building Council—New York Upstate Chapter:
<http://www.greenupstateny.org/>.
- U. S. Green Building Council, 2101 L Street, NW, Suite 500, Washington, DC, 20037, 1-800-795-1747: <http://www.usgbc.org/>.
- Green Building Certification Institute, 2101 L Street NW, Suite 650 Washington DC 20037, 1-800-795-1746: <http://www.gbci.org/homepage.aspx>.
- *LEED Green Building Certification System: frequently asked questions*—web site of the U.S. Green Building Council—description of the LEED rating system:
<http://www.usgbc.org/ShowFile.aspx?DocumentID=3330>.
- *LEED Version 3*, launched in April, 2009, by the U. S. Green Building Council. This web site provides information about the latest version of the LEED rating system; information on how to obtain the 2009 editions of LEED reference guides on "Green Building Design and Construction," "Green Interior Design and Construction," and "Green Building Operations and Maintenance"; and information on LEED rating systems for new construction, healthcare, schools, retail, commercial and retail interiors, core and shell, and existing buildings and schools: <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1970>.

- *Playbook for Green Buildings and Neighborhoods*—web site of a consortium of more than 20 local governments, non-profit organizations, government agencies, and utilities, whose intent is to promote the goals set out in the U.S. Conference of Mayors' Climate Protection Agreement. The *Playbook* provides local governments with guidance, tools, and resources to advance green buildings, neighborhoods, and infrastructure: <http://www.greenplaybook.org>.
- *Build Green Schools*—web site of the U. S. Green Building Council—extensive information and examples of green and LEED-certified school buildings: <http://www.centerforgreenschools.org/home.aspx>.
- *ReGreen*—web site of the American Society of Interior Designers Foundation and U. S. Green Building Council—extensive information on best practice guidelines, educational resources, and case examples for sustainable residential renovation and improvement projects: <http://www.regreenprogram.org>.
- *Green Communities Tools*, Enterprise Green Communities, Columbia, MD: <http://www.greencommunitiesonline.org/tools/resources/index.asp>.
- U. S. Green Building Council (January, 2008). *LEED for Homes Rating System*, 114-page document describing all aspects of the LEED rating process and rating system for homes: <http://www.usgbc.org/ShowFile.aspx?DocumentID=3638>.
LEED for Home Certification Program—Green Home Guide: <http://greenhomeguide.com/program/leed-for-homes>.
Local Green—New York: <http://greenhomeguide.com/city/new-york-ny>.
- Beth Anderson (December 3, 2007). "LEED Certification Program Leads to Potential Profits: property investors seek LEED certification for improved efficiency, better returns," *NuWire Investor*.
<http://www.nuwireinvestor.com/articles/leed-program-leads-to-potential-profits-51367.aspx>.

Resource—technical assistance contact names:

- *Volunteer basis*:
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