

To LEED OR NOT TO LEED:

With Sustainable Design, Everyone Wins

For many companies considering whether to seek Leadership in Energy and Environmental Design (LEED) certification, the decision is often one of payback: Will LEED certification provide enough financial justification for the effort involved? Yet simply studying the LEED path can deliver ideas on how to make a project more sustainable, which in turn enables companies to reap financial, environmental and goodwill returns.

If the decision is to certify, this choice is ideally made early in the design process, giving time to choose the appropriate LEED category, complete the application and project narrative process and provide required documentation for each credit earned. Decisions must be made regarding items such as landfill use and opportunities for material re-use. Documentation must start from day one to keep track of design decisions, quantities and forms required for certification. Beginning this process early allows time to integrate the necessary sustainable design strategies for the project.

The following discussion will help clarify the LEED certification choices, including the terminology and intent of sustainability credits. Please note: This article is not intended to provide a detailed analysis of the LEED certification process, but a high-level overview of some of the categories, terms, and prerequisites involved when considering undertaking that process. For more information, please contact Hixson.

About LEED

LEED was created more than a decade ago by the U.S. Green Building Council (USGBC), a non-profit organization that promotes sustainability in building design. LEED measurement is a gauge that helps building owners better solidify sustainability plans and strategies within their facilities.

There are six LEED rating systems that help assess sustainability, four of which are applicable for office/industrial applications. These are:

1. LEED - New Construction (NC). LEED NC applies to new construction and major renovation projects. This rating system may also be applied to campus and multi-building settings.
2. LEED - Existing Buildings (EB): Operations & Maintenance. LEED-EB Operations & Maintenance intends to help building owners improve operational efficiency of an existing building, while minimizing the impact on the environment. To apply under this LEED system, sites must have at least three months of operational data at the time of application.
3. LEED - Core & Shell (CS). LEED CS applies to building elements such as structure, building envelope, boiler and chilled water plants, central heating ventilation and air conditioning, elevators, and restrooms. This system is especially useful for developers and building owners who lease space, but do not have direct control over the final interior finishes.
4. LEED - Commercial Interiors (CI). LEED CI offers a path for building tenants to achieve LEED certification. Through this system, all interior elements such as floor and wall finishes, lighting, furniture, individual comfort and light control can be reviewed and improved through better sustainable design choices.

Multiple ratings systems may apply to some projects. To choose the best system, start with a spreadsheet of possible credits for each appropriate system. From these spreadsheets, determine which certification and/or sustainability goals are most appropriate for your project and which can be achieved.

LEED Certification Levels & Point Ranges

The chart below shows the range of points required to attain the various certification levels for each of the four industrial/commercial LEED systems:

LEED Rating Systems	Homes
	Neighborhood Development
	Schools, Retail, Healthcare
	Commercial/Industrial Systems
	New Construction
	Existing Buildings
	Core and Shell
Commercial Interiors	

	Point Ranges Required to Reach Certification Level			
Category	Certified	Silver	Gold	Platinum
LEED-NC	26 - 32	33 - 38	38 - 51	52 - 69
LEED EB:O&M	32 - 39	40 - 47	48 - 63	64 - 85
LEED C&S	23 - 27	28 - 33	34 - 44	45 - 61
LEED CI	21 - 26	27 - 31	32 - 41	42 - 57

The LEED Points Categories

Within each system, there are six categories. While the categories under each of the LEED rating systems are the same across systems, there are subtle differences in the prerequisites and measures that must be accomplished to achieve credit points. Point categories include:

1. **Sustainable Sites (SS):** As noted by the USGBC, approximately \$40 billion is spent every year to condition air in buildings throughout the United States and heat island effects in cities can raise temperatures by more than 10 degrees over their suburban counterparts. The SS category seeks to increase the sustainability of the site itself through better management of the area’s land, landscaping water requirements, transportation requirements. Credits are given for projects that:

- Keep dirt and oils out of the storm system and reduce run-off.
- Do not develop farmland or wetlands that may harbor wildlife.
- Maximize open green space or use vegetated roofs
- Reuse previously developed land or brownfields.
- Reduce requirements for transportation by locating in heavily populated areas and close to public transportation.
- Provide bike racks and showers.
- Reduce heat radiation by providing shade and vegetation.
- Reduce light pollution.

2. **Water Efficiency (WE):** Each year in the U.S., approximately 3,700 billion gallons of water are withdrawn from and never returned to the nation’s water system (Source: USGBC). The LEED WE category seeks to reduce the drain on America’s water sources through better consumption management, including achieving improved efficiencies and

reducing potable water use for landscaping. Credits are given for projects that:

- Reduce or eliminate irrigation water use.
- Use gray-water for the movement of sewage.
- Use low water flows for toilets and shower heads.

3. **Energy and Atmosphere (EA):** Because buildings consume nearly 40% of the energy and almost 70% of the electricity produced in the U.S., the Energy and Atmosphere category attempts to institute best management practices surrounding a building’s energy-consuming systems. (Source: USGBC) Credits are given for projects that:

- Optimize energy performance levels.
- Provide high efficiency glazing.
- Provide on-site renewable energy such as wind, solar and geothermal power.
- Provide enhanced commissioning, training and/or metering to maximize the efficiency of the building’s energy systems.

4. **Materials and Resources (MR):** Construction and demolition waste generated when building a facility account for approximately 40% of the solid waste in the U.S. (Source: USGBC) The Materials and Resources category aims to divert waste away from landfills by reducing materials and resources used in constructing a facility. Credits are given for projects that:

- Provide adaptive reuse of space or materials.
- Manage construction waste.
- Use recycled, regional and renewable materials.

5. **Indoor Environmental Quality (EQ):** It has been shown that the quality of indoor air can have a significant impact on worker productivity. Points are provided in this category for making the indoor environment one which provides greater comfort for the occupants and which does not contribute to air pollution. Credits are given for projects that:

- Provide and monitor ventilation systems.
- Create and follow Indoor Air Quality (IAQ) programs during construction and prior to occupancy.
- Use low pollution-emitting materials during construction and throughout the life of the facility.
- Offer individual thermal and lighting controls.
- Provide day lighting and views for employee benefit.

6. **Innovation and Design (ID):** Innovation is usually a key goal for any new or renovated facility and, with LEED, there is a category of points designed to recognize the use of innovative materials or technologies for the improvement of sustainable design. The ID category stresses education and provides design teams with the ability to earn up to four points for performance that exceeds the credit requirements.

LEED Prerequisites

All LEED categories have prerequisites that must be met before beginning to attempt LEED certification. Some of these prerequisites include:

- Silt control during construction.
- Commissioning, including quality control and training for equipment use, to ascertain that systems are working as specified.
- All energy systems must meet the minimum energy performance required by code.
- Minimum Indoor Air Quality (IAQ) code requirements must be met.
- No CFCs may be used for any proposed refrigeration equipment.
- Recycling locations and plans must be in place for the intended long-term facility users.
- No smoking is allowed within the facility except for designated areas where smoke-specific exhaust systems are provided.

The Choice is Yours

What impact can sustainable design have on your organization? Is the LEED certification program right for your company? What elements of sustainable design can you see fitting into your company's culture? How will sustainable design impact your facilities and real estate department's efforts? All of these questions should be considered before you begin your next facility project.

	Corporate Introduction	Sustainable Design Project	High Performance Facility Synchronization	LEED Certified	LEED Silver/Gold/Platinum
Corporate buy-in	• Limited past exposure, potential current educational opportunity.	• May not have executive level buy-in.	• Limited executive awareness; limited buy-in.	• Requires executive level sponsor, but may lack organization wide acceptance.	• Organizational buy-in.
Impact to client decision-making process	• No impact, case studies or post-project review.	• Minimal impact, client reviews opportunities during normal reviews and/or review after project complete.	• Requires active client participation to make decisions early in the project; decisions include cost tradeoffs.	• Requires active client participation to make decisions early in project.	• Requires active client participation to make decisions early in project.
Impact to end product	• No significant impact to project.	• Objective implementation of sustainable design elements.	• Long-term benefits more important than LEED marketing value.	• Moderate – significant impact on project.	• Significant impact with many decisions adopting long-term perspective; also provides opportunity for organizational change.
Impact to project budget	• No significant impact to project.	• Limited or no budget impact.	• Financial commitment for long-term impact.	• Project budget – careful balance of short & long-term decisions.	• Financial commitment for long-term impact; company understands budget impact.
Marketing value	• None	• Limited marketing value.	• Has marketing value as a sustainable project.	• Desire for LEED name recognition.	• Desire for LEED name recognition; company will be an industry leader.
Other				• Accept requirements for LEED process.	• Accept requirements for LEED process.

LEED Certification or Sustainable Design. More and more companies are now giving serious thought to what sustainable design means to the industry and to their own facilities. Yet there is no one-size-fits-all approach to sustainability: What is right for one company may not be right for yours. Your company must determine what level of sustainability is appropriate for your organization.

Advocacy: Hixson is a “No-Bias” Company

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