

LEED Overview

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What is LEED?

LEED stands for



**LEADERSHIP
IN ENERGY AND
ENVIRONMENTAL DESIGN**

LEED is good framework if you peruse ...



Saving \$



Resource
Conservation



Material
Choices



Innovation

LEED has Rating Systems for any building types



Building Design
and Construction



Interior Design
and Construction



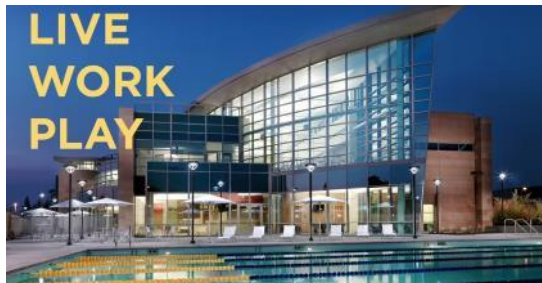
Building Operations
and Maintenance



Neighborhood
Development



Homes



Not just for work environment, also for the spaces where people Live and Play



Not just for Better environment, also for Brighter and Healthier places

LEED evaluation is on various Prerequisites and Credit Points



Certification Levels



What is LEED for?

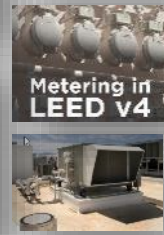
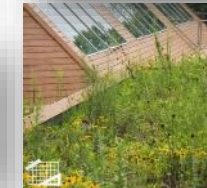
Is it just for Company and Earth only?

LEED-certified buildings are designed to deliver the following benefits:

- Lower operating costs and increased asset value
- Reduced waste sent to landfills
- Energy and water conservation
- More healthful and productive environments for occupants
- Reductions in greenhouse gas emissions

LEED care about your life and health:

- More healthful and productive environments for occupants
- Indoor air quality, thermal and visual comfort, and occupants' satisfaction



- Reduce contribution to **global climate change**
- Enhance individual **human health**
- Protect and restore **water resources**
- Protect and enhance **biodiversity and ecosystem services**
- Promote **sustainable and regenerative** material cycles
- Build a **green economy**
- Enhance **community quality of life**

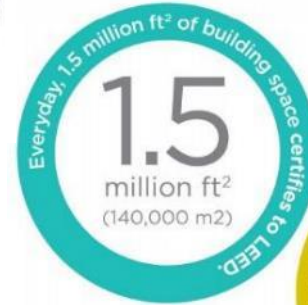
You can't manage what you don't measure.

- Icon: Building
- Icon: Bar chart
- Icon: Hammer
- Icon: Document with checkmark
- Icon: Thermometer
- Icon: Clock
- Icon: Gauge
- Icon: Pencil
- Icon: Clipboard

Source/Picture: USGBC

Introduction

- As the most widely recognized and widely used green building program across the globe, LEED is transforming buildings, homes and communities in all 50 states and 135 countries worldwide. LEED guides the design, construction, operations and maintenance of more than 50,000 projects worldwide, comprising 9.3 billion square feet of commercial and institutional construction space, and more than 117,000 additional residential units. (as of June 2014)



Source/Picture: USGBC

Why is the market using LEED?



Proven performance

- If you're serious about saving money, conserving energy, reducing water consumption, improving indoor air quality, making better building material choices, and driving innovation, then **LEED is the best choice**. Bar none.
- **Third-party certification** verifies that your project is designed, built and operating the way it was intended. It is also your first step toward managing your building through its entire lifecycle.

Continuous improvement

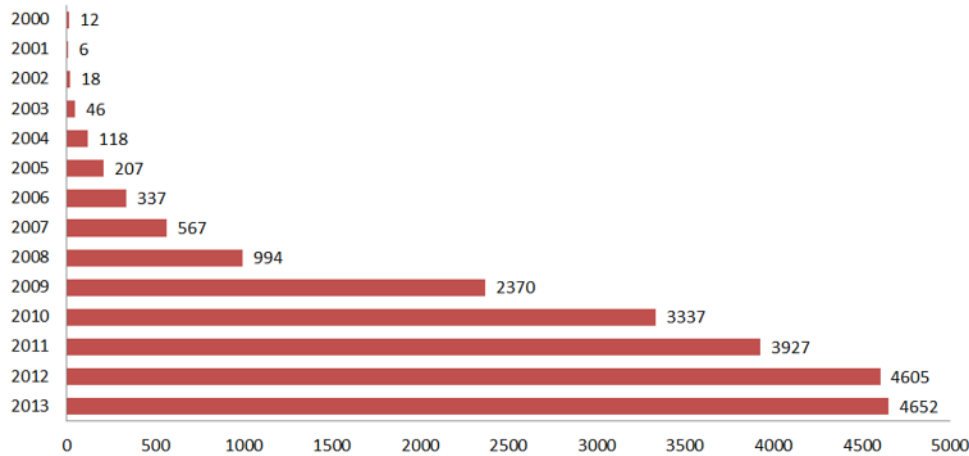
- Behind the LEED program is an **immense infrastructure** developed to support the leaders in the industry as they innovate and create cutting-edge, high performance buildings. We make significant investments each year to maintain, operate and improve LEED and its delivery. No other rating system has an infrastructure that comes close.

Lifetime of returns

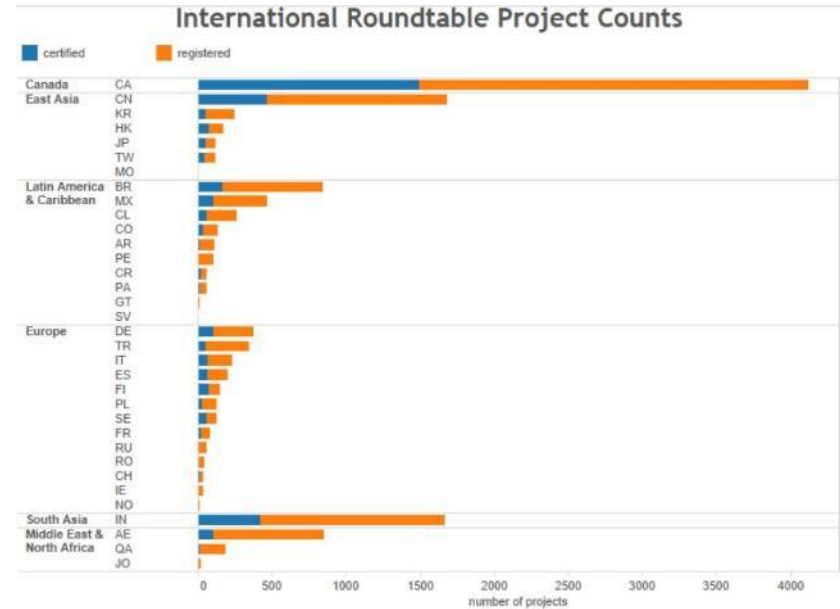
- LEED-certified buildings cost less to operate, reducing energy and water bills by as much as 40%. Businesses and organizations across the globe use LEED to increase the efficiency of their buildings, freeing up valuable resources that can be used to create new jobs, attract and retain top talent, expand operations and invest in emerging technologies.
- LEED buildings have faster lease-up rates and may qualify for a host of incentives like tax rebates and zoning allowances. Not to mention they retain higher property values.

LEED in Numbers

- USGBC estimates that more than 4.3 million people live and work in LEED-certified buildings.
- By 2015, an estimated 40-48% of new nonresidential construction by value will be green, equating to a \$120-145 billion opportunity
- More than 2.8 billion square feet of building space are LEED-certified (as of January 1, 2014)
- At year end 2013, approximately 42% of all square footage pursuing LEED certification existed outside the U.S.



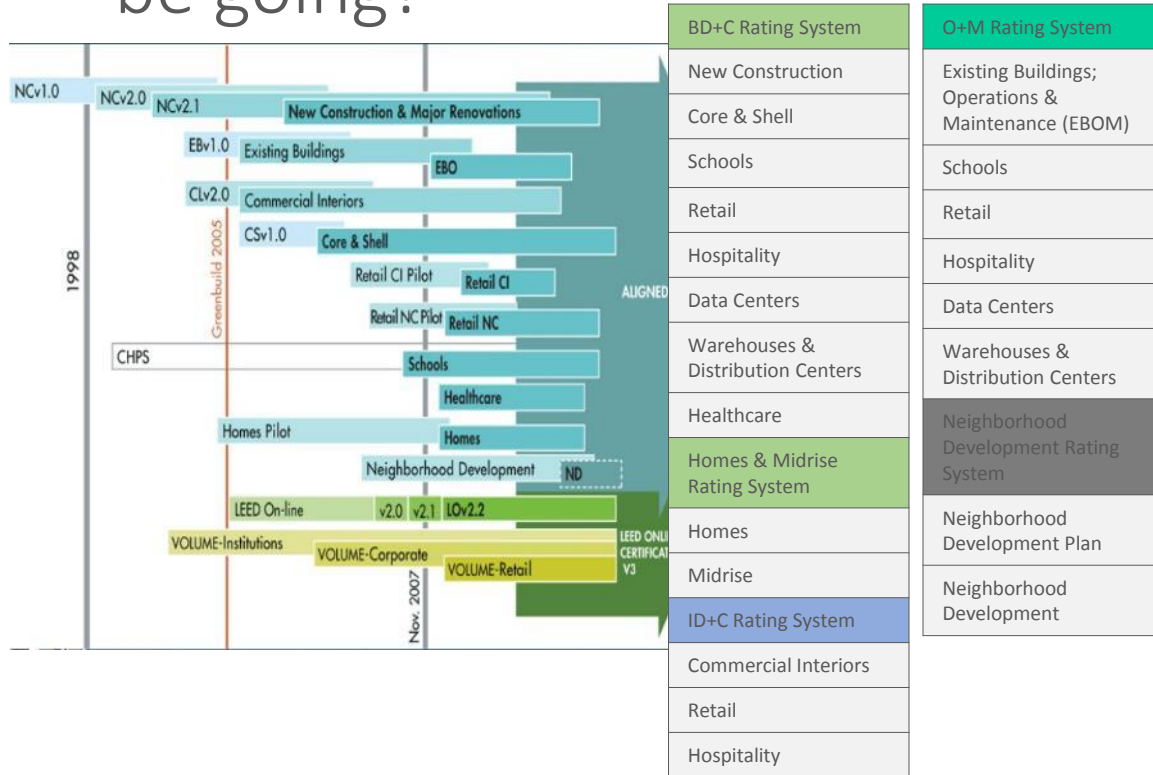
LEED Certified Project Numbers worldwide



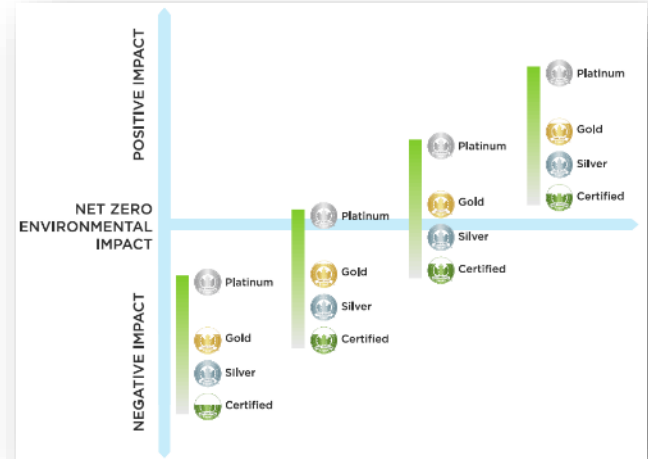
LEED Certified / Registered Project Numbers At International Site (outside U.S.)

How LEED was born, has been developed and will be going?

LEED v4 Rating Systems
21 Adaptations



Raising the bar at every new version



For Market Transformation and Making sure to achieve ZEB in 2030

LEED Adaptations



Building Design
and Construction

BD+C Rating System
New Construction
Core & Shell
Schools
Retail
Hospitality
Data Centers
Warehouses & Distribution Centers
Healthcare



Interior Design
and Construction

ID+C Rating System
Commercial Interiors
Retail
Hospitality



Building Operations
and Maintenance

O+M Rating System
Existing Buildings; Operations & Maintenance (EBOM)
Schools
Retail
Hospitality
Data Centers
Warehouses & Distribution Centers



Neighborhood
Development

Neighborhood Development Rating System
Neighborhood Development Plan
Neighborhood Development



Homes

Homes & Midrise Rating System
Homes
Midrise

LEED System Goals

The LEED rating systems aim to promote a transformation of the construction industry through strategies designed to achieve seven goals:

- To reverse contribution to global **climate change**
- To enhance individual **human health** and well-being
- To protect and restore **water resources**
- To protect, enhance, and restore **biodiversity** and ecosystem services
- To promote sustainable and regenerative **material resources** cycles
- To build a **greener economy**
- To enhance social equity, environmental justice, **community** health, and quality of life



Reduce contribution to **global climate change**



Enhance individual **human health**



Protect and restore **water resources**



Protect and enhance **biodiversity and ecosystem services**



Promote **sustainable and regenerative** material cycles



Build a **green economy**



Enhance **community quality of life**

Source/Picture: USGBC

LEED Credit Categories

- Achieve System Goals, through actual evaluation of items in Credit Categories.

System Goals



- Reduce contribution to **global climate change**
- Enhance individual **human health**
- Protect and restore **water resources**
- Protect and enhance **biodiversity and ecosystem services**
- Promote **sustainable and regenerative** material cycles
- Build a **green economy**
- Enhance **community quality of life**



Integrative Process

Credit Categories




Source/Picture: USGBC

Scorecard (Example)

LEED for New Construction and Major Renovations ()

		POSSIBLE: 1
IP102	Integrative process	1

 LOCATION & TRANSPORTATION		POSSIBLE: 32
LT101	LEED for Neighborhood Development location	16
LT102	Sensitive land protection	1
LT103	High priority site	2
LT104	Surrounding density and diverse uses	5
LT107	Access to quality transit	5
LT108	Bicycle facilities	1
LT110	Reduced parking footprint	1
LT111	Green vehicles	1

 SUSTAINABLE SITES		POSSIBLE: 104
SS101	Construction activity pollution prevention	REQUIRED
SSp1	Construction activity pollution prevention	REQUIRED
SS104	Site assessment	1
SSc1	Site selection	1
SS105	Site development - protect or restore habitat	2
SSc2	Development density and community connectivity	5
SS107	Open space	1
SSc3	Brownfield redevelopment	1
SS108	Rainwater management	3
SSc4.1	Alternative transportation - public transportation access	6
SSc4.2	Alternative transportation - bicycle storage and changing rooms	1
SSc4.3	Alternative transportation - low-emitting and fuel-efficient vehicles	3
SSc4.4	Alternative transportation - parking capacity	2
SS110	Heat island reduction	2
SSc5.1	Site development - protect or restore habitat	1
SSc5.2	Site development - maximize open space	1
SS112	Light pollution reduction	1
SSc6.1	Stormwater design - quantity control	1
SSc6.2	Stormwater design - quality control	1
SSc7.1	Heat island effect - nonroof	1
SSc7.2	Heat island effect - roof	1
SSc8	Light pollution reduction	1

Source/Picture: USGBC

Scorecard (Example)

WATER EFFICIENCY		POSSIBLE: 46
WE101	Outdoor water use reduction	REQUIRED
WEp1	Water use reduction	REQUIRED
WE102	Indoor water use reduction	REQUIRED
WE104	Building-level water metering	REQUIRED
WE901	Outdoor water use reduction	2
WEc1	Water efficient landscaping	4
WEc1.1	Water efficient landscaping - reduce by 50%	1
WEc1.2	Water efficient landscaping - no potable water use or no irrigation	1
WE902	Indoor water use reduction	6
WEc2	Innovative wastewater treatment and reuse	2
WE110	Cooling tower water use	2
WEc3	Water use reduction	4
WEc3.1	Water use reduction - 20% reduction	1
WEc3.1-3.2	Water use reduction	2
WEc3.2	Water use reduction - 30% reduction	1
WE112	Water metering	1

ENERGY & ATMOSPHERE		POSSIBLE: 154
EA101	Fundamental commissioning and verification	REQUIRED
EAp1	Fundamental commissioning of building energy systems	REQUIRED
EA103	Minimum energy performance	REQUIRED
EAp2	Minimum energy performance	REQUIRED
EA106	Building-level energy metering	REQUIRED
EAp3	Fundamental refrigerant management	REQUIRED
EA108	Fundamental refrigerant management	REQUIRED
EA110	Enhanced commissioning	6
EAc1	Optimize energy performance	19
EAc1.1-1.5	Optimize energy performance	10
EA903	Optimize energy performance	18
EAc2	On-site renewable energy	7
EAc2.1	Renewable energy - 5%	1
EAc2.1-2.3	Renewable energy	3
EAc2.2	Renewable energy - 10%	1
EAc2.3	Renewable energy - 20%	1
EA118	Advanced energy metering	1
EAc3	Enhanced commissioning	2
EA121	Demand response	2
EAc4	Enhanced refrigerant management	2
EA123	Renewable energy production	3
EAc5	Measurement and verification	3
EA126	Enhanced refrigerant management	1
EAc6	Green power	2
EA128	Green power and carbon offsets	2

Source/Picture: USGBC

Scorecard (Example)

MATERIAL & RESOURCES		POSSIBLE: 80
MR101	Storage and collection of recyclables	REQUIRED
MRp1	Storage and collection of recyclables	REQUIRED
MR103	Construction and demolition waste management planning	REQUIRED
MR108	Building life-cycle impact reduction	5
MRc1.1	Building reuse - maintain existing walls, floors and roof	3
MRc1.2	Building reuse - maintain interior nonstructural elements	1

Environmental Product Declarations

An EPD is a standardized way of communicating the environmental impacts, such as global warming potential and energy resource depletion, of a product or system. A product category rule (PCR) defines how to standardize this information for a specific product type, such as flooring. The PCR defines scope, system boundary, measurement procedures, impact measures and other technical requirements.

PCR development is the responsibility of the EPD Program Operator and is often organized through standards organizations or industry associations or sponsored by private or government organizations. Many countries maintain lists of PCRs that are publicly available; private Program Operators have PRCs on their websites:

- China EPD program, sepacec.com/cecen
- Japan Ecoleaf program, ecoleaf-jemai.jp/eng
- International EPD system, environdec.com/en/Product-Category-Rules/
- Institut Bauen und Umwelt (Institute Construction and Environment), bau-umwelt.de
- Norway EPD system, epd-norge.no
- Taiwan EPD system, pcr-library.edf.org.tw/product_country/taiwan.asp
- Korean EPD system, eng.keiti.re.kr
- UL Environment EPD system, ul.com/global/eng/pages/offerings/businesses/environment/services/certification/epd/
- Global Environmental Declaration network, gednet.org

MATERIAL & RESOURCES		CONTINUED
MRc1.3	Building reuse - maintain 100% of shell/structure and 50% of non-shell/non-structure	1
MR112	Building product disclosure and optimization - environmental product declarations	2
MRc2	Construction waste management	2
MRc2.1	Construction waste management - divert 50% from landfill	1
MRc2.1-2.2	Construction waste management	2
MRc2.2	Construction waste management - divert 75% from landfill	1
MR114	Building product disclosure and optimization - sourcing of raw materials	2
MRc3	Materials reuse	2
MRc3.1	Resource reuse - 5%	1
MRc3.1-3.2	Resource reuse	2
MRc3.2	Resource reuse - 10%	1
MR115	Building product disclosure and optimization - material ingredients	2
MRc4	Recycled content	2
MRc4.1	Recycled content - 5% (post-consumer + 1/2 pre-consumer)	1
MRc4.1-4.2	Recycled content	2
MRc4.2	Recycled content - 10% (post-consumer + 1/2 pre-consumer)	1
MR123	Construction and demolition waste management	2
MRc5	Regional materials	2
MRc5.1	Local/regional materials - 20% manufactured regionally	1
MRc5.2	Local/regional materials - 50% extracted regionally	1
MRc6	Rapidly renewable materials	1
MRc7	Certified wood	1

Source/Picture: USGBC

Scorecard (Example)

INDOOR ENVIRONMENTAL QUALITY		POSSIBLE: 91
EQ101	Minimum IAQ performance	REQUIRED
EQp1	Minimum IAQ performance	REQUIRED
EQ104	Environmental tobacco smoke control	REQUIRED
EQp2	Environmental Tobacco Smoke (ETS) control	REQUIRED
EQ110	Enhanced IAQ strategies	2
EQc1	Outdoor air delivery monitoring	1
EQ112	Low-emitting materials	3
EQc2	Increased ventilation	1
EQ113	Construction IAQ management plan	1
EQc3.1	Construction IAQ management plan - during construction	1
EQc3.2	Construction IAQ management plan - before occupancy	1
EQ114	IAQ assessment	2
EQc4.1	Low-emitting materials - adhesives and sealants	1
EQc4.2	Low-emitting materials - paints and coatings	1
EQc4.3	Low-emitting materials - flooring systems	1
EQc4.4	Low-emitting materials - composite wood and agrifiber products	1
EQ115	Thermal comfort	1
EQc5	Indoor chemical and pollutant source control	1
EQ117	Interior lighting	2
EQc6.1	Controllability of systems - lighting	1
EQc6.2	Controllability of systems - thermal comfort	1
EQ121	Daylight	3
EQc7.1	Thermal comfort - design	1
EQc7.2	Thermal comfort - verification	1
EQ123	Quality views	1
EQc8.1	Daylight and views - daylight	1
EQc8.2	Daylight and views - views	1
EQ124	Acoustic performance	1

INNOVATION		POSSIBLE: 33
IDc1	Innovation in design	5
IN101	Innovation	5
IDc2	LEED Accredited Professional	1
IN102	LEED Accredited Professional	1

REGIONAL PRIORITY		POSSIBLE: 12
RPC1	Regional priority	4

Source/Picture: USGBC

FAQ about LEED, USGBC and GBCI

What is LEED?

[What is LEED?](#)
(One minute Video Link)

The U.S. Green Building Council's LEED (Leadership in Energy and Environmental Design) green building certification system is the world's foremost program for the design, construction, maintenance and operations of green buildings. Every day, 1.7 million square feet (158,000 square meters) of space is certified using LEED in more than 150 countries and territories. LEED seeks to optimize the use of natural resources, promote regenerative and restorative strategies, maximize the positive and minimize the negative environmental and human health consequences of the construction industry, and provide high-quality indoor environments for building occupants. In addition, more than 56,000 residential units have been certified under the LEED for Homes rating system, with more than 90,000 more homes registered. Learn more at [USGBC.org/LEED](https://www.usgbc.org/LEED) and review the [Foundations of LEED](#) development process.

What is USGBC?

The U.S. Green Building Council (USGBC) is committed to a prosperous and sustainable future through cost-efficient and energy-saving green buildings. USGBC works toward its mission of market transformation through its LEED green building program, robust educational offerings, a nationwide network of chapters and affiliates, the annual [Greenbuild International Conference & Expo](#), the [Center for Green Schools](#) and [advocacy](#) in support of public policy that encourages and enables green buildings and communities. For more information, visit [usgbc.org](https://www.usgbc.org), explore the [Green Building Information Gateway \(GBIG\)](#) and connect on [Twitter](#), [Facebook](#) and [LinkedIn](#).

What is GBCI?

[NY Empire State Building](#)
[Taipei 101 Tower](#)

The Green Building Certification Institute (GBCI) is a third-party organization that provides independent oversight of professional credentialing and project certification programs related to green building. GBCI is committed to ensuring precision in the design, development, and implementation of measurement processes for green building performance (through project certification) and green building practice (through professional credentials and certificates). Established in 2008 to administer certifications and professional designations within the framework of the U.S. Green Building Council's LEED® Green Building Rating Systems™, GBCI continues to develop new programs and offer the marketplace validation that building certifications and professional designations have met specific, rigorous criteria. Learn more at [GBCI.org](https://www.gbci.org).

