

PART 3 - LEED Green Building Certification program



LEED structure overview

Minimum Program Requirements



Rating systems



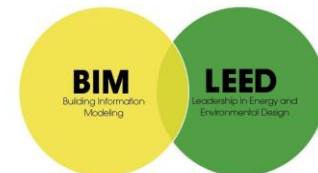
Prerequisites



Credits



Certification



Minimum Program Requirements (MPRs)

Projects must comply with the **Minimum Program Requirements (MPRs)**.

The purpose of MPRs are to:

- Provide guidance on what types of projects are eligible for certification
- Protect the integrity of the LEED program
- Reduce the number of issues that come from the certification process

All projects must:

1. Must be in a permanent location on existing land
2. Must use a reasonable LEED boundaries
3. Must comply with project size requirements

Projects that do not comply with the MPRs may have their certification revoked.



LEED Rating Systems

LEED projects are certified under five **LEED rating systems** according to construction types and space usage.

Building Design + Construction (BD+C)

LEED BD+C: New Construction and Major Renovation

LEED BD+C: Core & Shell

LEED BD+C: Schools

LEED BD+C: Retail

LEED BD+C: Hospitality

LEED BD+C: Data Centers

LEED BD+C: Warehouses & Distribution Centers

LEED BD+C: Healthcare



Interior Design + Construction (ID+C)

LEED ID+C: Commercial Interiors

LEED ID+C: Retail

LEED ID+C: Hospitality



LEED Rating Systems

Building Operations + Maintenance (O+M)

LEED O+M: Existing Buildings

LEED O+M: Retail

LEED O+M: Schools

LEED O+M: Hospitality

LEED O+M: Data Center

LEED O+M: Warehouses and Distribution Centers



Neighborhood Development (ND)

LEED ND: Plan certification

LEED ND: Built Project



Homes

LEED BD+C: Homes and Multifamily Lowrise

LEED BD+C: Multifamily Midrise



LEED Rating Systems

Projects cannot be divided into different rating systems by section, and the whole project should be certified under one rating system. If more than one rating system seems applicable to a project, the **40/60 rule** will be used to decide on the rating system.

A project should be divided into sections according to the appropriate rating system each section fits. Then, the total floor area corresponding to each rating system should be calculated (example forty-story high-rise building).



LEED rating system evolution

Implementation and maintenance

LEED rating systems are improved through published updates.

LEED Adaptation

Address both specific construction types and international projects (example LEED BD+C: School).

Next version of LEED

Rating systems are evaluated and revised periodically (next version will be LEED v.5).

LEED Pilot Credit Library

Pilot credits are tested across all rating system types and credit categories and include credits proposed for the next version of LEED. The points will be awarded under the Innovation credit category.



Credit categories

Every LEED BD+C rating system has credit categories in these major areas:

- Location and Transportation – does the location preserve environmentally sensitive places and take advantage of existing infrastructure, community resources, and public transit.
- Sustainable Sites – is the selected site able to maximize sustainability?
- Water Efficiency – what can you do to save on landscaping water use and interior water use?
- Energy and Atmosphere – how can you save energy, cut energy costs and encourage green energy development and use?
- Materials and Resources – are your building materials sustainable for the environment, and where does the waste go?
- Indoor Environmental Quality – how can you increase the productivity, satisfaction, and health of the occupants?
- Innovation – what can you discover that isn't in the rating system to add even further value to the project?
- Regional Priority – Are there regionally important issues?





LEED v4 for BD+C: New Construction and Major Renovation
Project Checklist

Project Name:
Date:

Y	?	N			
			Credit	Integrative Process	1
0	0	0	Location and Transportation		16
			Credit	LEED for Neighborhood Development Location	16
			Credit	Sensitive Land Protection	1
			Credit	High Priority Site	2
			Credit	Surrounding Density and Diverse Uses	5
			Credit	Access to Quality Transit	5
			Credit	Bicycle Facilities	1
			Credit	Reduced Parking Footprint	1
			Credit	Green Vehicles	1
0	0	0	Sustainable Sites		10
Y			Prereq	Construction Activity Pollution Prevention	Required
			Credit	Site Assessment	2
			Credit	Site Development - Protect or Restore Habitat	1
			Credit	Open Space	1
			Credit	Rainwater Management	3
			Credit	Heat Island Reduction	2
			Credit	Light Pollution Reduction	1
0	0	0	Water Efficiency		11
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
			Credit	Outdoor Water Use Reduction	2
			Credit	Indoor Water Use Reduction	6
			Credit	Cooling Tower Water Use	2
			Credit	Water Metering	1
0	0	0	Energy and Atmosphere		33
Y			Prereq	Fundamental Commissioning and Verification	Required
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Building-Level Energy Metering	Required
Y			Prereq	Fundamental Refrigerant Management	Required
			Credit	Enhanced Commissioning	6
			Credit	Optimize Energy Performance	18
			Credit	Advanced Energy Metering	1
			Credit	Demand Response	2
			Credit	Renewable Energy Production	3
			Credit	Enhanced Refrigerant Management	1
			Credit	Green Power and Carbon Offsets	2

0	0	0	Materials and Resources		13
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
			Credit	Building Life-Cycle Impact Reduction	5
			Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
			Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
			Credit	Building Product Disclosure and Optimization - Material Ingredients	2
			Credit	Construction and Demolition Waste Management	2
0	0	0	Indoor Environmental Quality		16
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
			Credit	Enhanced Indoor Air Quality Strategies	2
			Credit	Low-Emitting Materials	3
			Credit	Construction Indoor Air Quality Management Plan	1
			Credit	Indoor Air Quality Assessment	2
			Credit	Thermal Comfort	1
			Credit	Interior Lighting	2
			Credit	Daylight	3
			Credit	Quality Views	1
			Credit	Acoustic Performance	1
0	0	0	Innovation		6
			Credit	Innovation	5
			Credit	LEED Accredited Professional	1
0	0	0	Regional Priority		4
			Credit	Regional Priority: Specific Credit	1
			Credit	Regional Priority: Specific Credit	1
			Credit	Regional Priority: Specific Credit	1
			Credit	Regional Priority: Specific Credit	1
0	0	0	TOTALS		Possible Points: 110

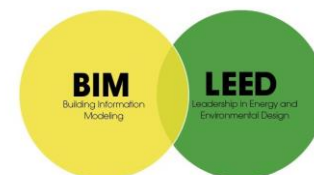
Certified: 40 to 49 points, Silver: 50 to 59 points, Gold: 60 to 79 points, Platinum: 80 to 110



Credit categories

Example: LEED BD + C: New Construction

Category	Points
Location and Transportation	16
Sustainable Sites	10
Water Efficiency	11
Energy and Atmosphere	33
Materials and Resources	13
Indoor Environmental Quality	16
Total	100
Bonus Points	
Innovation	6
Regional Credit	4
Total	110



Credit categories

Example: Operations & Maintenance

Category	Points
Location and Transportation	15
Sustainable Sites	10
Water Efficiency	12
Energy and Atmosphere	38
Materials and Resources	8
Indoor Environmental Quality	17
Total	100
Bonus Points	
Innovation & Design	6
Regional Credit	4
Total	110



Prerequisites and credits

Within each credit category are credits and/or prerequisites.

A fundamental of every LEED Rating System are the **prerequisites**. Prerequisites do not earn your project any points because they are required for the project to be considered. Prerequisites are the minimum requirements that all buildings under a certain rating system must meet.

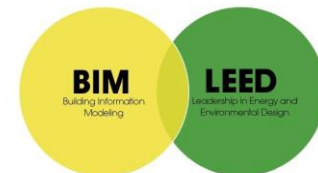
Each credit category has a group of **credits** that defines a particular sustainability goal.

Each LEED rating system has slightly different credits.

Your project does NOT have to achieve all credits. Credits are optional elements.

Each credit/prerequisite will have one or more requirements that must be met.

The higher the total points a project earns, the higher the level of LEED certification that will be awarded.



Project Certification

There are *four levels* of LEED certification:

- Certified: 40-49 points
- Silver: 50-59 points
- Gold: 60-79 points
- Platinum: 80+ points

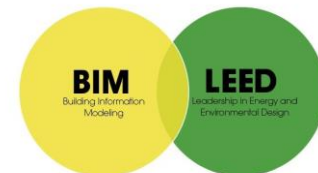


Two Gold rated buildings may use completely different systems and strategies.

As mentioned, there are 100 total points allocated to the credits under each rating system.

A project must satisfy *three requirements* for certification:

1. Meet the Minimum Program Requirements
2. Satisfy all Prerequisites
3. Satisfy a combination of Credits that achieve a certain number of points for the desired certification level.



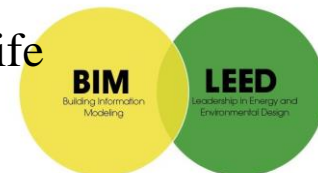
Point allocation process

Points are available in each of the LEED credit categories, and the points are weighted to best address the social, environmental, and economic outcomes identified by USGBC.

LEED credits have different weightings depending on their ability to impact different environmental and human health concerns.

The LEED impact categories answer the question: What should a LEED project accomplish? and they are the key elements that every LEED project aims to accomplish, consisting of 7 items:

- Reverse Contribution to Global Climate Change
- Enhance Individual Human Health and Well-Being
- Protect and Restore Water Resources
- Protect, Enhance and Restore Biodiversity and Ecosystem Services
- Promote Sustainable and Regenerative Material Resources Cycles
- Build a Greener Economy
- Enhance Social Equity, Environmental Justice, and Community Quality of Life



Project Resources

Reference Guides

Each LEED rating system has its own reference guide. Make sure the latest version of the reference guide is used.

Case Studies

USGBC provides a searchable database of case studies to learn from.

Customer Support

USGBC has customer support for LEED projects.

LEED Online

LEED Online is the repository for all LEED project documentation.

LEED Scorecard

The score card (also called the LEED checklist) lists all of the credits for the specific rating system and helps the project team track which ones are ideal for the project to attempt and those that are ‘maybes’ and need to be further investigated.



Project Resources

Credit Interpretation Rulings (CIR)

One feature that is available through LEED Online is Credit Interpretation Requests and Rulings (referred to as “CIRs”). CIRs are used to clarify a single question the project team may have and can be submitted any time after project registration.

The CIR and ruling process is used for technical and administrative guidance on how LEED credits apply to their projects and vice versa and they are not applicable to other projects.

CIRs are administered by GBCI.

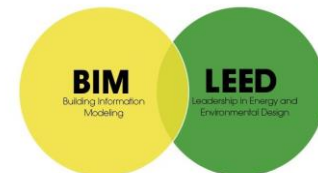
LEED Interpretations

Similar to CIRs, LEED interpretations can be issued to ask for clarification using LEED Online. However, LEED interpretations are precedent-setting. The clarification made in the LEED interpretation will be incorporated into the whole LEED rating system.

LEED interpretations are administered by USGBC.

Addenda

Each LEED rating system is updated with addendas, combining all the updates made.



Project Resources

If a question on a credit does come up, follow these steps:

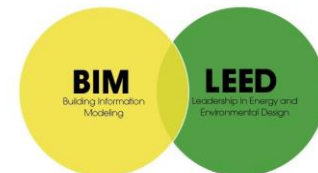
1. Consult the reference guide for a detailed description of the credit intent, requirements, and calculations.
2. Contact LEED customer service to see if the question can be answered.
3. Submit a formal CIR. There is a fee of to submit each CIR (220\$).

Only project teams with registered projects have access to submit CIRs.

When submitting a CIR, only one credit should be referenced in the request.

CIRs are for clarification, not for changes

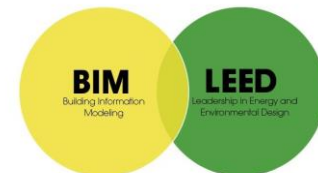
Example: A team wants to meet the requirement of individual temperature/comfort control with air diffusers. These are not mentioned in the requirement. So the team goes through Step1, checks the reference guide, Step 2, searches for a previous CIR that fits, Step 3 contacts customer service for an answer, and then finally submits the question of whether the air diffusers would be accepted. They are, and the team is able to achieve that point.



LEED certification process

For LEED BD+C and LEED ID+C projects:

1. Registration
2. Application
3. Review
4. Certification or denial



Phases of the Certification Process

Registration



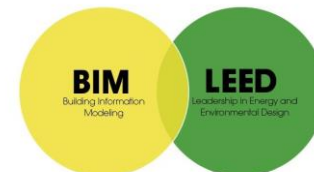
Projects are registered online at leedonline.com.

The registration fees are:

- \$900 for members
- \$1,200 for non-members

Registration during the pre-design phase is highly recommended.

Building Design and Construction Fees	ORGANIZATIONAL LEVEL OR NON-MEMBERS	SILVER, GOLD AND PLATINUM LEVEL MEMBERS	MEMBER SAVINGS
REGISTRATION	\$1,200	\$900	\$300
PRECERTIFICATION REVIEW (optional, LEED CS only)			
Flat fee (per building)	\$4,250	\$3,250	\$1,000
Expedited review (reduce from 20-25 business days to 10-12, available based on GBCI review capacity)	\$5,000		
COMBINED REVIEW: DESIGN & CONSTRUCTION			
Project gross floor area (excluding parking): less than 50,000 sq ft	\$2,750	\$2,250	\$500
Project gross floor area (excluding parking): 50,000-500,000 sq ft	\$0.055/sf	\$0.045/sf	\$0.01/sf
Project gross floor area (excluding parking): more than 500,000 sq ft	\$27,500	\$22,500	\$5,000
Expedited review (reduce from 20-25 business days to 10-12, available based on GBCI review capacity)	+\$10,000		
SPLIT REVIEW: DESIGN			
Project gross floor area (excluding parking): less than 50,000 sq ft	\$2,250	\$2,000	\$250
Project gross floor area (excluding parking): 50,000-500,000 sq ft	\$0.045/sf	\$0.04/sf	\$0.005/sf
Project gross floor area (excluding parking): more than 500,000 sq ft	\$22,500	\$20,000	\$2,500
Expedited review (reduce from 20-25 business days to 10-12, available based on GBCI review capacity)	\$5,000		



Phases of the Certification Process

Registration

The project administrator has several responsibilities, including:

- Setup of the project team members
- Entering team member assignments for credits
- Submitting the application for review

Team members are responsible for the documentation of the credits they have been assigned in LEED Online.



Phases of the Certification Process

Application

After project registration, the project team and project administrator can collect the information needed for the credit submittals.

LEED Online is a central repository for all project information. This tool allows team members to:

- Submit all documentation online, including documents and pictures.
- Update credit templates
- View and submit Credit Interpretation Requests (CIRs)
- Contact customer service
- View and respond to reviewer comments

Review fees change according to the gross floor area of the project and membership status. Once the review fees are received, GBCI will start the project review process.



Phases of the Certification Process

Review

Project teams have the option of a combined design & construction review or a split design & construction review.

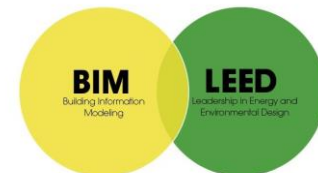
The combined design & construction review is just that – all documentation for the LEED project is submitted and reviewed at one time.

A split review allows project teams to submit some of the project documentation during the design phase.

document early, document often

During the project review process credits/prerequisites are updated with one of the following statuses:

- Anticipated – the project team can reasonably assume the credit will be achieved
- Clarify – more information is needed
- Awarded – the credit/prerequisite requirements have been met and points are earned
- Denied – the credit/prerequisite has not met the requirements



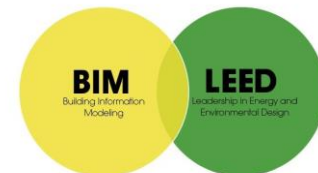
Phases of the Certification Process

Review

Project teams have the option of a combined design & construction review or a split design & construction review.

No credits are earned and no points are awarded during the design phase. Points can only be earned AFTER the construction phase.

- ~~Clarity – more information is needed~~
- Awarded – the credit/prerequisite requirements have been met and points are earned
- Denied – the credit/prerequisite has not met the requirements



Phases of the Certification Process

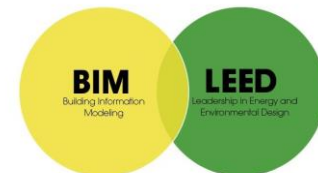
Review

Under the combined review, the review phases are as follows.

1. Preliminary review
- 2. Preliminary review response (clarifications)**
3. Final review
- 4. Accept or appeal**

When a split design & construction review is done the review phases are:

1. Preliminary design phase review
- 2. Preliminary design phase response (clarifications)**
3. Final design-phase review
- 4. Accept or Appeal**
5. Preliminary construction-phase review
- 6. Preliminary construction-phase response (clarifications)**
7. Final construction-phase review
8. Accept or Appeal



Phases of the Certification Process

Certification or denial

GBCI issues the final certification report, which will show the level of LEED certification awarded. Then the project will be deemed “closed-out”.

The total number of earned points will determine the level of LEED certification, assuming all the prerequisites and MPRs are met.

There are four levels of LEED certification:

- Certified: 40-49 points
- Silver: 50-59 points
- Gold: 60-79 points
- Platinum: 80+ points



This point system applies to all the rating systems in LEED.



Phases of the Certification Process

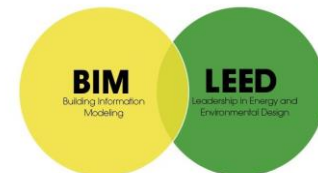
Registration

Some projects may involve several buildings being constructed or planned at once.

The Volume program is for organizations planning to certify an entire portfolio (uniform design) of building projects (25 or more) using the BD+C and O+M rating systems (e.g. coffee shop chain).

The Campus Program is for organizations planning to certify multiple buildings on a single campus site and under the control of a single entity (e.g. university).

These programs are used to pay lower certification fees and streamline the certification process.



USGBC Policies

"LEED certification" with lowercase "c" is used to describe the certification process.

"LEED-certified" with lowercase "c" is used to describe a project that has been certified.

"LEED Certified" with capital "C" (and no hyphen) is used to describe a project that has been certified to the base level: Certified.

When a project is certified, the correct wording is "project 'A' is LEED Silver" or "project 'A' is LEED certified to the Silver level" or "project 'A' is LEED Silver certified." Due to repetition, the wording "project 'A' is LEED Certified certified" is not recommended. "Certified" to reference both certification and level is sufficient.

USGBC Name: The official organization name is the U.S. Green Building Council.

