LEED v4.1
Our Mission

To transform the way buildings and communities are designed, built and operated, enabling an environmentally and socially responsible, healthy and prosperous environment that improves the quality of life.
2.4 MILLION+ SQUARE FEET DAILY
167 COUNTRIES
EVOLUTION OF LEED

LEED v1.0-2.2
1998 - 2009
Strategy based

LEED 2009
2009
Analytically weighted

LEED v4
November 2013
Outcome oriented

LEED v4.1 beta
January 2019
(BD+C ID+C)
Timely updates

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LEED v4.1
Technical Development Goals

ENSURE LEADERSHIP

INCREASE ACHIEVABILITY

EXPAND THE MARKET

IMPROVE PERFORMANCE
LEED v4.1
Technical Development Goals

ENSURE LEADERSHIP
LEED v4.1
Technical Development Goals

INCREASE ACHIEVABILITY
CREATIVE TENSION

MARKET

URGENCY
## LEED v4 CREDIT ACHIEVEMENT

### LOCATION AND TRANSPORTATION
- LT Credit: Sensitive Land Protection
- LT Credit: High-Priority Site
- LT Credit: Surrounding Density and Diverse Uses
- LT Credit: Access to Quality Transit
- LT Credit: Bicycle Facilities
- LT Credit: Reduced Parking Footprint
- LT Credit: Green Vehicles

### SUSTAINABLE SITES
- SS Credit: Site Assessment
- SS Credit: Site Development—Protect or Restore Habitat
- SS Credit: Open Space
- SS Credit: Rainwater Management
- SS Credit: Heat Island Reduction
- SS Credit: Light Pollution Reduction

### WATER EFFICIENCY
- WE Credit: Indoor Water Use Reduction
- WE Credit: Outdoor Water Use Reduction
- WE Credit: Cooling Tower Water Use
- WE Credit: Water Metering

### ENERGY AND ATMOsphere
- EA Credit: Enhanced Commissioning
- EA Credit: Advanced Energy Metering
- EA Credit: Optimize Energy Performance
- EA Credit: Demand Response
- EA Credit: Renewable Energy Production
- EA Credit: Enhanced Refrigerant Management
- EA Credit: Green Power and Carbon Offsets

### MATERIALS AND RESOURCES
- MR Credit: Building Life-Cycle Impact Reduction
- MR Credit: Building Product Disclosure and Optimization—Environmental Product Declarations
- MR Credit: Building Product Disclosure and Optimization—Sourcing of Raw Materials
- MR Credit: Building Product Disclosure and Optimization—Material Ingredients
- MR Credit: Construction and Demolition Waste Management

### INDOOR ENVIRONMENTAL QUALITY
- EQ Credit: Enhanced Indoor Air Quality Strategies
- EQ Credit: Low-Emitting Materials
- EQ Credit: Construction Indoor Air Quality Management Plan
- EQ Credit: Indoor Air Quality Assessment
- EQ Credit: Thermal Comfort
- EQ Credit: Interior Lighting
- EQ Credit: Daylight
- EQ Credit: Quality Views
- EQ Credit: Acoustic Performance
LEED v4.1
Technical Development Goals

EXPAND THE MARKET
LEED v4.1
Technical Development Goals

IMPROVE PERFORMANCE
LEED v4.1
WAYS TO PARTICIPATE

Register a LEED v4.1 project

Upgrade a LEED v4 project

Substitute LEED v4.1 credits
LEED v4.1
Energy & Atmosphere
Minimum/Optimize Energy Performance
Prerequisite and credit

ASHRAE 90.1-2016

On-site renewables contribute to prerequisite compliance

New metrics: Energy cost and greenhouse gas emissions

New off-site renewables contribute to GHG emissions metric
**METRICS:**

ENERGY COST + GREENHOUSE GAS EMISSIONS

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Renewable energy
Credit

Combination of Renewable Energy Production credit and Green Power and Carbon Offsets credit

Includes more types of renewable energy procurement:
Tier 1: On-site
Tier 2: New off-site in desirable location
Tier 3: New off-site
Tier 4: Green-e RECs
Tier 5: RECs
<table>
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**Tier 1:** On-site renewable energy generation

**Tier 2:** Off-site renewable energy produced by a generation asset(s) built within the last 5 years, or contracted to be operational within one year of building occupancy, and generated by either:
- an asset(s) in the project’s grid subregion
- an asset(s) in a grid subregion with higher greenhouse gas emissions rates**

**Tier 3:** Off-site renewable energy that is produced by a generation asset(s) built within the last 5 years or contracted to be operational within one year of building occupancy

**Tier 4:** Off-site renewable energy that is Green-e Energy certified or equivalent

**Tier 5:** Off-site renewable energy that is produced by a generation asset(s) that meet Green-e’s certification criteria (or equivalent) for eligible renewables, has a mechanism to prevent double counting in place, and is third-party certified to an ecolabel standard.
SINGLE ATTRIBUTES
MULTIPLE ATTRIBUTES
Building life-cycle impact reduction

Credit

Option 4. Whole-Building Life-Cycle Assessment

Path 1: Conduct a life cycle assessment of the project’s structure and enclosure (1 point)

Path 2: 5% reduction (2 points)

Path 3: 10% reduction (3 points)

Path 4: 20% reduction (GWP) + 10% reduction + reuse (4 points)
Building product disclosure and optimization – environmental product declarations

Credit

Option 1. Environmental Product Declaration (EPD)

Product-specific Type III EPD (third-party certified) = 1.5 products

All other product LCAs or EPDs = 1 product
Building product disclosure and optimization – environmental product declarations

Credit

Option 2. Multi-Attribute Optimization

Cost requirement lowered from 50% to 10%

OR Option for # of products (10 for all project types)
Building product disclosure and optimization – environmental product declarations

Credit

Option 2. Multi-Attribute Optimization

i. Action Plan: Reward manufacturer progress towards optimization by analyzing product lifecycle impacts and publicly committing to reductions (50% of cost or ½ product)

ii. Life Cycle Impact Reductions in Embodied Carbon:
   
i. reduction in GWP: compared to industrywide EPD, product-specific LCA, or Type III EPD (100% of cost, or 1 products)

ii. 10% reduction in GWP: compared to industrywide EPD, product-specific LCA, or Type III EPD (150% or 1.5 products)

iii. 20% reduction in GWP: considered exemplary; must be compared against type III EPDs only; must also include 5%+ reduction in two additional categories (200% or 2 products)
Building product disclosure and optimization – sourcing of raw materials

Credit

Removed Option 1: Sourcing and Extraction Reporting

- Lack of uptake and clear pathways of compliance
- Will be refined as a Pilot Credit
Building product disclosure and optimization – sourcing of raw materials

Credit

Option 2 is now worth up to 2 points: Incremental achievement rewarded for selecting compliant products (all project types):

- 20% by cost: 1 point
- 40% by cost: 2 points
Building product disclosure and optimization - sourcing of raw materials

Credit

Option 2:

- Reuse now valued at 200%
- Extended Producer Responsibility
- Recycled content
- FSC Wood
- Biobased materials
Building product disclosure and optimization - material ingredients

Credit

Option 1. Material Ingredient Reporting
Choose 20 products for 1 point
(10 products for ID+C, Core & Shell, and Warehouse/Distribution Centers)

Third party verified disclosures count for 1.5 products
Building product disclosure and optimization - material ingredients

Credit

Option 2. Material Ingredient Optimization

i. **Action Plan**: Reward manufacturer progress towards optimization following the principles of green chemistry (50% of cost or ½ product)

ii. **Advanced Screening & Assessment**: Avoid known hazards from most of the product (GHS Cat-1 and GS BM-1s); resolve data gaps (unknowns) and make assessments public; 3rd party verification (100% of cost, or 1 products)

iii. **Full Assessment**: Full inventory and assessment of at least 95% of ingredients by weight; avoid known hazards and CMRs; 3rd party verification (150% or 1.5 products)
LEED v4.1

Indoor Environmental Quality
Environmental Tobacco Smoke Control
Prerequisite

Teams determine best way to communicate no smoking policy

Updated definition of indoor smoking: Includes tobacco smoke, cannabis, electronic smoking devices

ID+C:
Prohibit smoking in project space

Smoking prohibited in all common areas used by project occupants and served by the same HVAC system

Ensure ETS cannot migrate by mechanical or natural ventilation into project space
INCREASE ACHIEVABILITY

Low-emitting materials Credit

Restructured credit around product categories
- Paints and coatings
- Adhesives and sealants,
- Flooring
- Walls
- Ceilings
- Insulation
- Furniture
- Composite wood

Lowered thresholds: 90/100% to 75%

Simplified international requirements for VOC emissions
Indoor air quality assessment

Credit

Option 2: Air testing
   Path 1, PM and inorganic gases (4 compounds)
   Path 2, Reduced list of VOCs (12 compounds)

No concentration limit for TVOC

Added more options to allow monitoring instruments and test methods
Daylight Credit

Removed 10% threshold for Annual Sunlight Exposure

Adjusted thresholds and points for all options

Option 3, Measurement option, only requires one measurement
Acoustic Performance Credit

Reduced scope, 2 of 3:
- Sound transmission
- HVAC background noise
- Reverberation

Updated requirements for sound transmission
Flexibility in classifying spaces

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LEED v4.1
Location & Transportation
INCREASE ACHIEVABILITY

High priority site
Credit

Option 1: High Priority Site
Removed ‘Priority Designations’ (Opportunity Zones, etc.) and added criteria to define economically disadvantaged communities
- Household income below 80% AMI
- 20% of population below poverty line
- Unemployment 150% of state average

Added Option 2: Equitable Development
- Path 1: Equity and community benefits
- Path 2: Affordable housing
Access to quality transit

Credit

- Adjustments to weekend minimums
- Added intermediate thresholds
- Clarified privately-run shuttle eligibility
INCREASE ACHIEVABILITY

Bicycle facilities

Credit

Adjusted storage requirements from 30% to 15% of occupants for residential projects

Bike share stations can count towards up to 50% of storage requirements

Adjusted shower requirements for high-occupancy projects

Distance from storage to entrance increased

Clarified bike network definition

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INCREASE ACHIEVABILITY

Reduced parking footprint

Credit

Removed cases
Simplified threshold for all projects
Removed carpool requirement

Four options for compliance:
• No Off-Street Parking
• Reduce Parking
• Car share
• Unbundling Parking
Electric vehicles
Credit

Switched from green vehicles to electric vehicles

Reward installation of electric vehicle infrastructure

Removed preferred parking requirements and ACEEE ratings
LEED v4.1
Water Efficiency
Cooling tower and process water use

Credit

Adjust thresholds: two points can be earned for increasing maximum cycles by 25%

New option: No cooling tower

New option: Process water use
Core and Shell: Revised point allocations

Points re-allocated from Indoor water use reduction to Outdoor water use reduction and Cooling tower and process water
LEED v4.1
Sustainable Sites
Rainwater management
Credit

Thresholds for percentile reductions adjusted

Clarified acceptable low impact development (LID) techniques
LEED v4.1
WAYS TO PARTICIPATE

1. Register a LEED v4.1 project
2. Upgrade a LEED v4 project
3. Substitute LEED v4.1 credits

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FORMS & LEED ONLINE

LEED Online
Streamline your LEED project management experience, organize your work, and engage with your whole team.
Now available for LEED v4 and LEED 2009 projects.

LOG IN
Email
Password
This Note is required.

CREATE AN ACCOUNT

NO USGBC ACCOUNT?
No problem—just fill in some basic information and a USGBC login will be yours in a flash.

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RESOURCES

NEW.USGBC.ORG/LEED-V41

LEED v4.1 BUILDING DESIGN AND CONSTRUCTION
Getting started guide for beta participants
January 2019

LEED v4.1 INTERIOR DESIGN AND CONSTRUCTION
Getting started guide for beta participants
January 2019

LEED v4.1 Ask the Experts

LEED v4.1.1 Ask the Experts Recordings
Published on February 12, 2019

Registration is now open for LEED v4.1.1 Ask the Experts Recordings. This program will feature four sessions covering key topics in LEED v4.1.1, and will provide valuable information for those interested in learning more about this updated version of the LEED rating system.

Introduction to LEED v4.1 for Design and Construction

This interactive course walks through the key changes in LEED v4.1 from LEED v4. The course is divided into six modules, each covering a different aspect of the LEED v4.1 rating system. It is ideal for architects, engineers, and other professionals who are interested in learning more about the updated LEED rating system.

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Questions?