

LEED v4 for Building Design & Construction

Summary of changes from LEED 2009

Prerequisite	Integrative Project Planning and Design (Healthcare Only)	<ul style="list-style-type: none"> • Credit language clarified. • Charrette requirement adjusted from 8 hours to 4 hours.
Credit	Integrative Process	<ul style="list-style-type: none"> • New credit. • Encourages early analysis of energy and water systems to inform design.
LOCATION AND TRANSPORTATION		
Credit	LEED for Neighborhood Development Location	<ul style="list-style-type: none"> • New credit. • Encourages selection of a LEED ND certified site. • Gives project teams a streamlined path to earn LT points.
Credit	Sensitive Land Protection	<ul style="list-style-type: none"> • Credit title renamed from “Site Selection”. • Credit language clarified. • Option for projects located on protected sites to earn credits through sensitive land best management practices.
Credit	High Priority Site	<ul style="list-style-type: none"> • Credit incorporates requirements from “Brownfield Remediation”. • Encourages selection of sites with development constraints.
Credit	Surrounding Density and Diverse Uses	<ul style="list-style-type: none"> • Credit title renamed from “Development Density and Community Connectivity”. • Multiple thresholds to reward different density levels and amounts of diverse uses. • Projects earn points in the density and the diverse uses options separately. • Warehouse and distribution center requirements added to encourage development near commercial or industrial sites or near transportation infrastructure.
Credit	Access to Quality Transit	<ul style="list-style-type: none"> • Credit title renamed from “Alternative Transportation—Public Transportation Access”. • Multiple thresholds to reward varying transit service levels. • Metric of radius changed to walk distance. • Frequency of transit included in metric.
Credit	Bicycle Facilities	<ul style="list-style-type: none"> • Credit title renamed from “Alternative Transportation—Bicycle Storage and Changing Rooms” • Added a requirement to be located at a bicycle-accessible site or bicycle network.
Credit	Reduced Parking Footprint	<ul style="list-style-type: none"> • Credit title renamed from “Alternative Transportation-Parking Capacity”. • Minimum parking requirements reference levels in the <i>ITE Transportation Planning Handbook</i>. • Option for No New Parking omitted.
Credit	Green Vehicles	<ul style="list-style-type: none"> • Credit title renamed from “Alternative Transportation—Low-Emitting and Fuel-Efficient Vehicles”. • 3% of parking spaces must be reserved for green vehicles. • An additional 2% of parking spaces must have refueling stations – electric vehicle charging or liquid, gas, or battery facilities. • Revised Schools requirements for buses and on-site vehicles • Warehouse and Distribution Centers requirement added for on-site vehicles and anti-idling measures.
Credit	Alternative Transportation	<ul style="list-style-type: none"> • Removed this previously Retail-specific credit and distributed its former options among the analogous D&C rating systems

SUSTAINABLE SITES		
Prerequisite	Construction Activity Pollution Prevention	<ul style="list-style-type: none"> Updated the EPA Construction General Permit version from 2003 to 2010.
Prerequisite	Environmental Site Assessment	<ul style="list-style-type: none"> No substantive changes.
Credit	Site Assessment	<ul style="list-style-type: none"> New credit. Encourages early analysis of site conditions to inform design.
Credit	Brownfield Remediation	<ul style="list-style-type: none"> Moved requirements to Location and Transportation Credit: High Priority Site. Combined options.
Credit	Site Development - Protect or Restore Habitat	<ul style="list-style-type: none"> Replaced setback requirements with preservation standards. Added option for financial support of off-site preservation.
Credit	Open Space	<ul style="list-style-type: none"> Credit renamed from "Site Development – Maximize Open Space" Added qualification that open space must be of beneficial use to the occupants or community. Clarified turf grass requirements and vegetated roof requirements.
Credit	Rainwater Management	<ul style="list-style-type: none"> Credit is a combination of "Stormwater Design—Quality Control" and "Stormwater Design—Quantity Control". Includes site-specific criteria for more frequent, low-intensity events. Added option for zero lot line, urban projects.
Credit	Heat Island Reduction	<ul style="list-style-type: none"> Credit is a combination of "Heat Island Effect—Nonroof" and "Heat Island Effect—Roof". Updated the roof SRI requirements. Changed paving materials metric to Solar Reflectance (SR). Included 3-year aged SRI and SR values. Included weighted SRI average calculation methodology. Increased threshold for parking spaces under cover.
Credit	Light Pollution Reduction	<ul style="list-style-type: none"> Removed the interior lighting requirements which are now addressed in the EA prerequisite. Included the BUG rating methodology as a prescriptive way to meet the exterior lighting requirements. Added Lighting Zone 0. Included exterior signage requirements. Added exemptions from exterior lighting requirements.
Credit	Site Master Plan (Schools)	<ul style="list-style-type: none"> Clarified requirements for projects with no future planned development.
Credit	Tenant Design and Construction Guidelines (Core and Shell)	<ul style="list-style-type: none"> Added "Storage and Collection of Recyclables" to the list of prerequisites and credits.
Credit	Places of Respite (Healthcare)	<ul style="list-style-type: none"> No substantive changes. Credit titled renamed from "Connection to the Outside World—Places of Respite".
Credit	Direct Exterior Access (Healthcare)	<ul style="list-style-type: none"> No substantive changes. Credit title renamed from "Connection to the Outside World—Direct Exterior Access for Patients".
Credit	Joint Use of Facilities (Schools)	<ul style="list-style-type: none"> Removed the requirements for separate entries.

WATER EFFICIENCY		
Prerequisite	Outdoor Water Use Reduction	<ul style="list-style-type: none"> • New prerequisite. • Requires a reduction in landscape water use by 30% using EPA's WaterSense Water Budget Tool or no irrigation.
Prerequisite	Indoor Water Use Reduction	<ul style="list-style-type: none"> • Credit title renamed from "Water Use Reduction". • WaterSense label required for certain fixtures and fittings • Appliance and process water uses addressed. • Basic cooling tower requirements from ASHRAE 189 added. • Additional appliance and process water requirements for Retail, Schools, Healthcare and Hospitality only.
Prerequisite	Minimum Potable Water Use for Medical Equipment Cooling (Healthcare)	<ul style="list-style-type: none"> • Prerequisite removed.
Prerequisite	Building-Level Water Metering	<ul style="list-style-type: none"> • New prerequisite. • Requires each project to be capable of measuring whole building water use.
Credit	Outdoor Water Use Reduction	<ul style="list-style-type: none"> • Credit title renamed from "Water Efficient Landscaping". • Requires a reduction in landscape water use by at least 50% using EPA's WaterSense Water Budget Tool or no irrigation.
Credit	Innovative Wastewater Technologies	<ul style="list-style-type: none"> • Credit removed. • Will be tested in Pilot Credit Library with new nutrient recovery option.
Credit	Indoor Water Use Reduction	<ul style="list-style-type: none"> • Credit title renamed from "Water Use Reduction". • WaterSense label required for certain fixtures and fittings. • Added Appliance and Process Water requirements. • Added more thresholds for achievement.
Credit	Cooling Tower Water Use	<ul style="list-style-type: none"> • New credit. • Encourages projects to analyze water source and maximize water cycles.
Credit	Water Metering	<ul style="list-style-type: none"> • New credit. • Rewards projects for submetering at least two water end uses.
ENERGY AND ATMOSPHERE		
Prerequisite	Fundamental Commissioning and Verification	<ul style="list-style-type: none"> • Credit title renamed from "Fundamental Commissioning of Building Energy Systems". • Modified intent to ensure project meets the owner's projects requirements related to energy, water, indoor environmental quality and durability. • Added requirement for preparing an Operations and Maintenance Plan. • Added requirement to engage a Commissioning Authority by the end of the design development phase. • Clarified language for who can be the commissioning authority. • Included requirements for a design review of the enclosure.
Prerequisite	Minimum Energy Performance	<ul style="list-style-type: none"> • Updated referenced standard to ASHRAE 90.1-2010. • Added requirements for data centers. • Added retail-specific process load requirements • Updated Advanced Energy Design Guides prescriptive option to 50% AEDG for Office, Retail, Schools, and Healthcare. • Updated Core Performance Guide prescriptive option to meeting core requirements plus six additional strategies.

Prerequisite	Building-Level Energy Metering	<ul style="list-style-type: none"> • New prerequisite. • Requires each project to be capable of measuring whole building energy use.
Prerequisite	Fundamental Refrigerant Management	<ul style="list-style-type: none"> • No substantive changes.
Credit	Enhanced Commissioning	<ul style="list-style-type: none"> • Added options for monitoring based commissioning and envelope commissioning. • Added requirements to prepare the building operators for the intended operation of building systems • Clarified language for who can be the commissioning authority.
Credit	Optimize Energy Performance	<ul style="list-style-type: none"> • Updated referenced standard to ASHRAE 90.1-2010. • Added requirements for data centers. • Added retail-specific process load requirements • Updated Advanced Energy Design Guides prescriptive option to 50% AEDG for Office, Retail, Schools, and Healthcare. • Updated Core Performance Guide prescriptive option to meeting core requirements plus six additional strategies.
Credit	Advanced Energy Metering	<ul style="list-style-type: none"> • New credit. • Requires all energy end-uses that represent 10% or more of the total energy consumption of the building to be metered. • Meters must be connected to the building automation system and log data at appropriate intervals. • Core and Shell projects required to address future tenant spaces.
Credit	Demand Response	<ul style="list-style-type: none"> • New credit. • Encourages projects to design and install systems necessary to participate in a demand response program. • Also available to projects located in areas without demand response programs. • Added requirement to include demand response processes in the commissioning scope.
Credit	Renewable Energy Production	<ul style="list-style-type: none"> • Credit title renamed from “On-Site Renewable Energy”. • Added provision for community-scale renewable energy systems. • Points adjusted significantly.
Credit	Enhanced Refrigerant Management	<ul style="list-style-type: none"> • Added retail-specific requirements.
Credit	Measurement and Verification	<ul style="list-style-type: none"> • Credit removed. • Installation of measurement and verification infrastructure addressed in Building-Level Energy Metering prerequisite and Advanced Metering credit.
Credit	Green Power and Carbon Offsets	<ul style="list-style-type: none"> • Credit title renamed from “Green Power”. • Credit based on total building energy usage. • Carbon offsets allowed for scope 1 or 2 emissions • Required contract length extended from 2 years to 5 years. • Eligible resources must have come online after January 1, 2005.
MATERIALS AND RESOURCES		
Prerequisite	Storage and Collection of Recyclables	<ul style="list-style-type: none"> • Added requirement to address batteries, mercury containing lamps, or electronic waste. • Added retail requirement to identify top 4 waste streams to provide recycling collection and storage.
Prerequisite	Construction and Demolition Waste Management Planning	<ul style="list-style-type: none"> • New prerequisite. • Requires setting a project target for waste management. • Require reporting waste diversion rates.

Prerequisite	PBT Source Reduction—Mercury	<ul style="list-style-type: none"> No substantive changes.
Credit	Building Reuse – Maintain Existing Walls, Floors, and Roof	<ul style="list-style-type: none"> Credit requirements moved to “Building Life Cycle Impact Reduction” credit.
Credit	Building Reuse – Maintain Interior Nonstructural Elements	<ul style="list-style-type: none"> Credit requirements moved to “Building Life Cycle Impact Reduction” credit.
Credit	Building Life Cycle Impact Reduction	<ul style="list-style-type: none"> Credit is a combination of “Building Reuse—Maintain Existing Walls, Floors, and Roof” and “Building Reuse—Maintain Interior Nonstructural Elements”. Added options for the reuse of historic and blighted buildings. Added option for a whole building life-cycle assessment of the project’s structure and enclosure.
Credit	Building Product Disclosure and Optimization—Environmental Product Declarations	<ul style="list-style-type: none"> New credit. Addresses transparency in environmental life-cycle impacts and selecting products with improved life-cycles. Structured into disclosure and optimization options. Rewards the use of products with Environmental Product Declarations. Rewards products that meet the local products criteria.
Credit	Materials Reuse	<ul style="list-style-type: none"> Credit requirements moved to “Building Life Cycle Impact Reduction”.
Credit	Recycled Content	<ul style="list-style-type: none"> Credit requirements moved to “Building Product Disclosure and Optimization—Sourcing of Raw Materials.”
Credit	Regional Materials	<ul style="list-style-type: none"> Credit requirements moved to the “Building Product Disclosure and Optimization” credits.
Credit	Rapidly Renewable Materials	<ul style="list-style-type: none"> Credit removed. Rapidly renewable materials addressed by “Building Product Disclosure and Optimization—Sourcing of Raw Materials”.
Credit	Certified Wood	<ul style="list-style-type: none"> Credit requirements moved to “Building Product Disclosure and Optimization—Sourcing of Raw Materials”.
Credit	Building Product Disclosure and Optimization—Sourcing of Raw Materials	<ul style="list-style-type: none"> New credit. Addresses transparency in raw material sourcing and selecting materials that have been appropriately sourced. Restructured into disclosure and optimization sections. Rewards products from manufacturers that have provided information on land use practices, extraction locations, labor practices, etc. Rewards products that meet the local products criteria.
Credit	Building Product Disclosure and Optimization—Material Ingredient Reporting	<ul style="list-style-type: none"> New credit. Addresses transparency in material ingredients and selecting products with optimized ingredients. Structured into disclosure and optimization options. Rewards the use of products with ingredient reporting in programs like Health Product Declaration, Cradle 2 Cradle, and others. Rewards products that meet the local products criteria. Third option for supply chain optimization.
Credit	PBT Source Reduction-Mercury (Healthcare)	<ul style="list-style-type: none"> No substantive change. Credit title revised.
Credit	PBT Source Reduction-Lead, Cadmium, Copper (Healthcare)	<ul style="list-style-type: none"> No substantive change.

Credit	Furniture and Medical Furnishings (Healthcare)	<ul style="list-style-type: none"> Updated referenced standards in option 2. Updated the criteria for option 3.
Credit	Resource Use-Design for Flexibility (Healthcare)	<ul style="list-style-type: none"> Credit renamed to "Design for Flexibility". Credit language clarified.
Credit	Construction and Demolition Waste Management	<ul style="list-style-type: none"> Added an option for waste reduction strategy. Requires waste diversion from multiple material types. Alternative daily cover no longer counted as diverted waste.
INDOOR ENVIRONMENTAL QUALITY		
Prerequisite	Minimum Indoor Air Quality Performance	<ul style="list-style-type: none"> Added requirements for outside air delivery monitoring Added requirements for residential projects addressing combustion appliances, CO monitors, and radon.
Prerequisite	Environmental Tobacco Smoke Control	<ul style="list-style-type: none"> Removed allowance for designated smoking areas inside the building for all projects but residential. Reduced the maximum allowable leakage rate for compartmentalized residential units. Prohibited smoking on the entire site for Schools projects.
Prerequisite	Minimum Acoustic Performance (Schools)	<ul style="list-style-type: none"> Harmonized ANSI & ASHARE standards. Added exterior noise control exceptions for projects located on quiet sites. Added exceptions for projects with limited renovation scopes or strict historic preservation requirements.
Credit	Outdoor Air Delivery Monitoring	<ul style="list-style-type: none"> Credit requirements moved to "Minimum Indoor Air Quality Performance" and "Enhanced Indoor Air Quality Strategies" credits.
Credit	Increased Ventilation	<ul style="list-style-type: none"> Credit requirements moved to "Enhanced Indoor Air Quality Strategies" credit.
Credit	Enhanced Indoor Air Quality Strategies	<ul style="list-style-type: none"> Credit is a combination of "Outdoor Air Delivery Monitoring", "Increased Ventilation", and "Indoor Chemical and Pollutant Source Control" credits. Added additional options for mathematical modeling, additional sensors, and mixed mode systems.
Credit	Low-Emitting Materials	<ul style="list-style-type: none"> Credit is a combination of the "Low-Emitting Materials" credits. Requirements based on VOC emissions rather than VOC content. Systems approach to emissions within a space. Added requirement for TVOC disclosure. Modified requirements for formaldehyde.
Credit	Construction Indoor Air Quality Management Plan	<ul style="list-style-type: none"> Credit title renamed from "Construction Indoor Air Quality Management Plan—During Construction". No substantive changes.
Credit	Indoor Air Quality Assessment	<ul style="list-style-type: none"> Credit title renamed from "Construction Indoor Air Quality Management Plan—Before Occupancy". Added a maximum temperature limit for flush outs. Expanded the list of contaminants for which to test under Option 2. Clarified that furniture must be installed.
Credit	Indoor Chemical and Pollutant Source Control	<ul style="list-style-type: none"> Credit requirements moved to "Enhanced Indoor Air Quality Strategies" credit.
Credit	Controllability of Systems—Lighting	<ul style="list-style-type: none"> Credit requirements moved to "Interior Lighting" credit.
Credit	Thermal Comfort	<ul style="list-style-type: none"> Credit title renamed from "Thermal Comfort—Design". Updated reference standard to ASHRAE 55-2010.

		<ul style="list-style-type: none"> • Credit removed from Core and Shell.
Credit	Interior Lighting	<ul style="list-style-type: none"> • New Credit. • Incorporates controls requirements from “Controllability of Systems—Lighting” credit. • Added an option that addresses lighting quality.
Credit	Daylight	<ul style="list-style-type: none"> • Credit title renamed from “Daylight and Views—Daylight”. • Removed prescriptive option. • Added option for spatial daylight autonomy. • Changed units from footcandles to lux. • Added a timing requirement to measurement option.
Credit	Quality Views	<ul style="list-style-type: none"> • Credit title renamed from “Daylight and Views—Views”. • Added requirement for quality view, defined by the LEED 2009 exemplary performance criteria. • Added provisions for interior atria.
Credit	Acoustic Performance	<ul style="list-style-type: none"> • New credit except in Schools and Healthcare. • Added requirements for room noise levels, speech privacy and sound isolation, reverberation time, and paging, masking, and sound reinforcement systems. • Harmonized ANSI and ASHRAE standards.
Credit	Mold Prevention (Schools)	<ul style="list-style-type: none"> • Credit requirements moved to “Thermal Comfort” credit.