



Is Your Campus **ACHIEVING SUSTAINABILITY?** We Can Help You Keep Your LEED® Certification

SPATIAL SYSTEMS ASSOCIATES, INC.
Integrated Facilities Management Solutions

The USGBC booklet, *LEED for Existing Buildings: Operations & Maintenance Recertification Guidance*, establishes performance criteria to be met in order to certify existing buildings (those not newly constructed or for which major renovations are not anticipated). Following certification of newly constructed buildings, those buildings become eligible for recertification under the Operations and Maintenance program when recertification is required. In effect, all buildings that continue to maintain active certification status eventually need to be recertified under the Building Operations and Maintenance guidelines.

Recertification is a process that requires owners to demonstrate that previously certified buildings are eligible for continued certification. As a general rule, certified buildings are expected to obtain recertification at least every five years, though they may receive recertification as often as annually. Project teams may register for recertification once a project's initial certification is completed and accepted. **For organizations who are involved in the LEED certification process, recertification is an opportunity to build an ongoing relationship with a building owner, and thereby recurring revenue.**

Under the recertification program, building owners are requested to supply information verifying that their building is performing as was expected during the original certification process. To the extent possible, projects will be held to the re-

quirements of the version of the rating system that is open for registration on the date the project registers for recertification. Assuming that newer certification criteria continues to be more stringent than previous certification criteria, the implication is that existing buildings will have to meet ever-more stringent criteria to retain a given certification level.

USGBC refers to two periods during a building's lifespan—Establishment and Performance. The **Establishment** period is that time during which the building is originally qualified for LEED certification, whether as a new building or as an existing building. During the **Establishment** period, the building infrastructure is assessed, policies are established, and procedures are put into place to monitor/manage the operations of the building. The **Performance** period begins upon initial certification and lasts for the life of the building. The **Performance** period requires continuous implementation of the strategies under which the original certification was granted. Performance monitoring requires both specific actions and ongoing tracking.

Specific actions relate to LEED credits that require surveys, audits and periodic testing. Tracking relates to ongoing monitoring of building operations that relate to LEED credits for such items as water use, energy use, purchasing of supplies and handling of waste. During recertification, USGBC wants to see that both the specific actions and ongoing tracking have been achieved during the Performance period.

Spatial Systems Associates, Inc. has been working on development of software and systems that can be implemented to store information related to both the specific actions and tracking data requirements. Our **SpatialOperations** product, for example stores information on contracts, purchase orders, surveys, and operational data related to indoor environment, water use, and energy use. This operational data, continuously and automatically collected and stored, forms the basis for the information required by USGBC for recertification consideration. Further, the SpatialOperations system alerts operations personnel when monitored characteristics fall outside of acceptable ranges, thus helping building managers to not only comply with USGBC LEED requirements, but also to operate the building in the most efficient manner possible.

The following table identifies Credit Compliance requirements for LEED recertification as identified in USGBC's publication, *LEED for Existing Buildings: Operations & Maintenance Recertification Guidance* and identifies opportunities for the use of SpatialOperations for compliance monitoring:

USGBC LEED® Recertification Guidelines SpatialOperations Compliance		Establishment Requirements	Performance Requirements	SpatialOperations Compliant	Can Be Made Available Via SpatialOperations
SUSTAINABLE SITES					
SSc1	LEED-Certified Design and Construction	Building components and site infrastructure Show that building was previously certified under Design & Construction or Operations & Maintenance rating system.	Ongoing tracking For projects previously certified under any version of LEED for Existing Buildings, confirm that ongoing performance has been tracked during entire recertification performance period.	X	
SSc2	Building Exterior and Hardscape Management Plan	Policy Establish building exterior and hardscape management plan.	Ongoing tracking Employ plan. Provide documentation of environmentally preferred practices from most recent 25% of recertification performance period.	X	
SSc3	Integrated Pest Management, Erosion Control and Landscape Management Plan	Policy Establish integrated pest management, erosion control, and landscape management plan.	Ongoing tracking Employ plan. Provide documentation of environmentally preferred practices from most recent 25% of recertification performance period.	X	
SSc4	Alternative Commuting Transportation	N/A	Perform commute survey at least once every 5 years. Compliance is based on results of most recent survey.	X	
SSc5	Site Development—Protect or Restore Habitat	Building components and site infrastructure Establish native and adapted vegetation on-site and/or off-site.	Maintain areas of native and adapted vegetation and/or have in place off-site area contract for duration of recertification performance period.	X	

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SSc6	Stormwater Quantity Control	Building components and site infrastructure Establish stormwater management plan.	Perform annual inspection of all stormwater management facilities.	X	
SSc7.1	Heat Island Reduction— Nonroof	Building components and site infrastructure Establish shading, high-SRI materials, or open-grid paving to reduce heat islands from nonroof surfaces.	Implement maintenance program to ensure that high-SRI surfaces are cleaned at least once every 3 years.		X
SSc7.2	Heat Island Reduction— Roof	Building components and site infrastructure Establish green roof or high-SRI materials to reduce heat island from roof surfaces.	Implement maintenance program to ensure that high-SRI surfaces are cleaned at least once every 3 years.		X
SSc8	Light Pollution Reduction	Building components and site infrastructure Establish lighting that minimizes light trespass from building.	N/A		
WATER EFFICIENCY					
WEp1	Minimum Indoor Plumbing Fixture and Fitting Efficiency	Building components and site infrastructure Have in place indoor fixtures and fittings that reduce potable water use.	N/A	X	
WEc1.1	Water Performance Measurement—Whole Building	Building components and site infrastructure Have in place water meters that measure total potable water use for entire building and grounds.	Ongoing tracking Maintain continuous manual or data-logged meter readings. Provide at least weekly meter readings from most recent 25% of recertification performance period. A data logging meter may be used to achieve the credit per LEED Interpretation 5190.	X	

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WEc1.2	Water Performance Measurement— Submetering	Building components and site infrastructure Have in place meters for one or more water subsystems.	Ongoing tracking Maintain continuous manual or data-logged meter readings. Provide at least weekly meter readings or weekly trend analysis from most recent 25% of recertification performance period.	X	
WEc2	Additional Indoor Plumbing Fixture and Fitting Efficiency	Building components and site infrastructure Have in place indoor fixtures and fittings that reduce potable water use.	N/A		X
WEc3	Water Efficient Landscaping	Building components and site infrastructure Have in place landscaping and/or irrigation systems that reduce use of potable water for irrigation. If project does not have irrigation water meter, demonstrate reduction through theoretical calculations.	Ongoing tracking If project has irrigation water meter and is pursuing Option 1, track irrigation water use. Compare irrigation baseline with building's actual irrigation potable water use. Using same set of months as in baseline calculation, provide metered data from most recent set in recertification performance period.	X	
WEc4.1	Cooling Tower Water Management—Chemical Management	Policy Establish and implement water management plan for cooling towers.	N/A		
WEc4.2	Cooling Tower Water Management—Non- potable Source	N/A	Ongoing tracking Use makeup water that consists of at least 50% nonpotable water and have in place measurement program that verifies makeup water quantities. Provide meter readings from most recent 25% of recertification performance period.	X	

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ENERGY AND ATMOSPHERE					
EAp1	Energy Efficiency Best Management Practices— Planning, Documentation, and Opportunity Assessment	Establish building operating plan and preventive maintenance schedule. Perform preliminary ASHRAE Level 1 walk-through.	Primarily action Perform ASHRAE Level I walk-through assessment at least once every 5 years. Follow building operating plan and preventive maintenance schedule. If more than two years old, update the ASHRAE Level I report to reflect current operating practices, systems, and energy costs.	X	
EAp2	Minimum Energy Efficiency Performance	Building components and site infrastructure Have in place energy meters that measure all energy use.	Ongoing tracking Track building's energy use. Provide energy performance rating for most recent 12 months and annual summaries from preceding years. If energy performance rating for most recent 12 months does not meet minimum requirement, use average rating based on each year in recertification performance period.	X	
EAp3	Fundamental Refrigerant Management	Building components and site infrastructure Use zero CFC-based refrigerants. If CFC refrigerants are used, establish phase-out plan and perform economic analysis for conversion.	Action Continue or complete phase-out plan. Conduct new economic analysis at least once every 5 years if CFC-based refrigerants are still used.		X
EAc1	Optimize Energy Performance	Building components and site infrastructure Have in place energy meters that measure all energy use.	Ongoing tracking Track building's energy usage. Provide energy performance rating for most recent 12 months and annual summaries from preceding years.	X	

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EAc2.1	EB Cx—Investigation and Analysis	Establish ongoing commissioning plan and conduct investigation and analysis phase. Alternatively, perform preliminary ASHRAE Level II audit.	Primarily action Conduct investigation and analysis phase at least once every 5 years. Alternatively, perform ASHRAE Level III Energy Audit once every 5 years. If more than two years old, update the ASHRAE Level II report to reflect current operating practices, systems, and energy costs.	X	
EAc2.2	EB Cx—Implementation	N/A	Action Implement all no and low cost operational improvements and add newly identified capital measures. No and low cost measures that were implemented in the previous certification do not contribute towards credit achievement.		X
EAc2.3	EB Cx— Ongoing Cx	Establish and implement ongoing commissioning program with 24-month cycle.	Primarily action Follow ongoing commissioning plan with 24-month cycle. EAp1 and EAc2.1 will be automatically awarded if EAc2.3 was achieved in the previous certification and is achieved in the recertification (with at least one full ongoing commissioning cycle), and building operating plan and preventive maintenance schedule are followed and updated as needed.		X
EAc3.1	Performance Measurement—BAS	Building components and site infrastructure Have in place computer-based building automation system that monitors and controls major building systems.	Ongoing tracking Use BAS to inform decisions regarding changes in building operations and energy-saving investments. Describe decisions made as result of BAS output.	X	

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EAc3.2	Performance Measurement—System- level Metering	Building components and site infrastructure Have in place system- level energy meters.	Ongoing tracking Compile monthly and annual summaries of meter results for each energy subsystem. Provide monthly and annual meter data for most recent 25% of recertification performance period.	X	
EAc4	On-site and off-site renewable energy	N/A	Ongoing tracking Meet some of building's total energy use with on- site or off-site renewable energy systems. Provide renewable energy data for the entire recertification performance period.		X
EAc5	Enhanced Refrigerant Management	Building components and site infrastructure Use refrigerants and equipment that reduce overall refrigerant impact of project.	Ongoing tracking Track amount of refrigerant and date it was added to each piece of refrigerant-containing equipment over recertification performance period. Update refrigerant impact calculations using information from last refrigerant addition for each piece of refrigerant- containing equipment.		X
EAc6	Emissions Reduction Reporting	N/A	Action Report greenhouse gas emissions using third-party voluntary reporting or certification program at least once per year.	X	
MATERIALS AND RESOURCES					
MRp1	Sustainable Purchasing Policy	Policy Establish and implement sustainable purchasing policy.	N/A	X	

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MRp2	Solid Waste Management Policy	Policy Establish and implement solid waste management policy.	N/A	X	
MRc1	Sustainable Purchasing— Ongoing Consumables	N/A	Ongoing tracking Track all sustainable ongoing consumables purchases. Provide data for most recent 25% of recertification performance period.		X
MRc2	Sustainable Purchasing— Durable Goods	N/A	Ongoing tracking Track all sustainable durable goods purchases. Provide data from entire recertification performance period.		X
MRc3	Sustainable Purchasing— Facility Alterations and Additions	N/A	Ongoing tracking Purchase sustainable construction materials for facility alterations and additions. Provide data from entire recertification performance period. Any alterations that occur during recertification performance period must be included in credit calculations.		X
MRc4	Sustainable Purchasing— Reduced Mercury in Lamps	Policy Establish lighting purchasing plan.	Ongoing tracking Purchase lamps with low picogram per lumen hour value. Provide data for most recent 25% of recertification performance period.		X
MRc5	Sustainable Purchasing— Food	N/A	Ongoing tracking Purchase sustainable food. Provide data for most recent 25% of recertification performance period.		X

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MRC6	Solid Waste Management—Waste Stream Audit	Perform preliminary waste audit.	Action Perform a waste audit every year. If MRC7: Solid Waste Management — Ongoing Consumables has been achieved, perform waste audit once every 5 years.		X
MRC7	Solid Waste Management—Ongoing Consumables	N/A	Ongoing tracking Divert ongoing consumables waste from landfills and incineration. Provide data for most recent 25% of recertification performance period.		X
MRC8	Solid Waste Management—Durable Goods	N/A	Ongoing tracking Divert durable goods waste from landfills and incineration. Provide data for most recent 25% of recertification performance period.		X
MRC9	Solid Waste Management—Facility Alterations and Additions	N/A	Ongoing tracking Divert construction waste from landfills and incineration. Provide data from entire recertification performance period. Any alteration that occur during recertification performance period must be included in credit calculations.		X
INDOOR ENVIRONMENTAL QUALITY					
EQp1	Minimum Indoor Air Quality Performance	Building components and site infrastructure Establish minimum ventilation rates.	Action Take outside air measurements and perform exhaust fan testing at least once every 5 years. Confirm that project meets minimum ventilation rates.	X	

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EQp2	ETS Control	<p>Policy and/or building components and site infrastructure</p> <p>Prohibit smoking in building and on property within 25 feet of openings. For projects with residential space or smoking rooms, meet applicable design requirements.</p>	N/A	X	
EQp3	Green Cleaning Policy	<p>Policy</p> <p>Establish and implement green cleaning policy.</p>	N/A		X
EQc1.1	IAQ BMP—IAQ Management Program	Perform preliminary IAQ audit. Resolve any issues that are found.	<p>Primarily action</p> <p>Perform IAQ audit at least once every 5 years. Resolve any issues that are found.</p>	X	
EQc1.2	IAQ BMP—Outdoor Air Delivery Monitoring	Establish and use monitoring systems for outdoor airflow.	N/A	X	
EQc1.3	IAQ BMP—Increased Ventilation	Establish minimum ventilation rates.	<p>Action</p> <p>Take outside air measurements and perform exhaust fan testing at least once every 5 years and confirm that outside air rates for project are 30% above minimum required rates.</p>	X	
EQc1.4	IAQ BMP—Reduced Particulates in Air Distribution	<p>Building components and site infrastructure</p> <p>Have in place MERV 13 filters in all mechanical ventilation equipment.</p>	Follow schedule for filtration media replacement.	X	

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EQc1.5	IAQ BMP—IAQ Management for Facility Alterations and Additions	Policy Establish IAQ management plan for construction and occupancy phases.	Action Follow IAQ management plan for all facility alterations and additions. Provide photographs highlighting IAQ management practices that were implemented during construction activities, along with details of flush-out processes.		X
EQc2.1	Occupant Comfort— Occupant Survey	NA	Action Conduct occupant comfort survey at least once every 2 years.	X	
EQc2.2	Controllability of Systems—Lighting	Building components and site infrastructure Establish lighting system that allows occupants high level of control.	N/A	X	
EQc2.3	Occupant Comfort— Thermal Comfort Monitoring	Establish and use system for continual tracking of indoor comfort conditions.	Ongoing tracking Continue to monitor air temperature and humidity. Measure air speed and radiant temperature annually, alternating between heating and cooling seasons each year.	X	
EQc2.4	Daylight and Views	Building components and site infrastructure Establish daylight and views for occupants according to required thresholds.	N/A		X
EQc3.1	Green Cleaning—High Performance Cleaning Program	Policy Establish and implement high performance green cleaning program.	N/A		X

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EQc3.2	Green Cleaning— Custodial Effectiveness Assessment	N/A	Action Conduct cleanliness audit at least once every 2 years.		X
EQc3.3	Green Cleaning— Purchase of Sustainable Cleaning Products and Materials	N/A	Ongoing tracking Track green cleaning product purchases. Provide data for most recent 25% of recertification performance period.		X
EQc3.4	Green Cleaning— Sustainable Cleaning Equipment	N/A	Ongoing tracking Purchase and use sustainable cleaning equipment. Provide purchasing data from entire recertification performance period.		X
EQc3.5	Green Cleaning—Indoor Chemical and Pollutant Source Control	Building components and site infrastructure Have in place permanent entryway systems at all public entry points to building.	Maintain entryway systems.		X
EQc3.6	Green Cleaning— Indoor Integrated Pest Management	Policy Establish indoor integrated pest management plan.	Ongoing tracking Follow plan. Provide pesticide application logs for most recent 25% of recertification performance period.		X
INNOVATION IN OPERATIONS					
IOc1	Innovation in Operations	Establish innovation in operations strategy.	Follow innovation in operations strategy.		X
IOc2	LEED Accredited Professional	Have LEED-accredited professional on project team.	N/A		X
IOc3	Documenting Sustainable Building Cost Impacts	N/A	Ongoing tracking Track all operating costs. Provide cost data from entire recertification performance period.		X

