2025

SYNERGIES BETWEEN SMART SURFACES & LEED V5

SMART SURFACES COALITION

LEED

Smart Surfaces and LEED are two complementary systems aimed at implementing proven strategies and technologies in the built environment to improve quality of life. These strategies improve water management, increase vegetation, reduce excess heat, and save money, while creating opportunities for a deeper connection with nature.

This guide serves to identify the synergies between LEED v5 and Smart Surface technologies and how they may be applied in your new construction projects.

APPLICATION

The LEED Rating system is a comprehensive approach to sustainability that is applied to your building project and the site, while Smart Surfaces are specific strategies and/or materials that can be used at various scales, from a building or site, to a neighborhood or campus, to a city.

The tables below are designed to help identify opportunities for Smart Surfaces as a part of LEED certification efforts. These tables outline which Smart Surfaces can be implemented to contribute to completion of certain LEED credits. Each of these LEED credits come with their own additional requirements which can be explored further in the LEED BD+C v5 Reference Guide.

SMART SURFACES

The following pages briefly define each Smart Surface strategy, including how they work and the benefits they provide. To learn more about these technologies, visit **Smart Surfaces Coalition**.

REFLECTIVE ROOFS & PAVEMENT	Solar-reflective roofs, walls, and pavement that are engineered to reflect more sunlight, reducing the heat gain of buildings and outdoor air.
COOL WALLS	A cool wall is an exterior wall surface that stays cool in the sun by reflecting sunlight and efficiently emitting thermal infrared radiation. Just like a cool roof, a cool wall should exhibit both high solar reflectance (also known as “albedo”) and high thermal emittance.
POROUS PAVEMENT	Pavements that allow rain to recharge groundwater, reducing water pollution, stormwater runoff, and flood risk. Pervious pavement technologies include porous concrete, permeable pavers, and porous grid pavers with turf or gravel.
GREEN ROOFS	Living, breathing roof systems that absorb rainwater, reduce heat absorption, and improve air quality. Vegetated roofs cool buildings, manage stormwater runoff, and provide urban plant and wildlife habitats while maintaining longer effective lifespans than traditional dark roofs.

SMART SURFACES *(CONT.)*

GREEN CONCRETE	Through the process of integrating CO2 into new concrete, concrete can be carbon neutral or even carbon negative. Additionally, carbon-sequestering concrete has a relatively high albedo, or solar reflectance.
TREES	Urban trees turn CO2 into oxygen, remove pollutants from the air, and reduce flood risk. Trees also reduce ambient temperature through shading and evapotranspiration, lowering reliance on energy-intensive air conditioning.
SOLAR PV	Solar PV converts sunlight into renewable energy and provides shading for buildings, parking lots, and other public areas. Solar surfaces can help cities cut emissions while reducing air pollution and energy costs.
BIORETENTION (BIOSWALES & RAIN GARDENS)	Bioretention systems such as rain gardens or bioswales improve urban drainage by collecting and filtering stormwater runoff, promoting biodiversity, and adding aesthetic value. In addition, the vegetation in these systems cools the surrounding environment through evapotranspiration.
URBAN MEADOWS	Urban meadows are planted areas of native grasses and herbaceous flowering plants that can take the spot of vacant lots and turfgrass lawns in urban areas. Urban meadows are a cost-effective and low-maintenance strategy to manage stormwater runoff while providing significant community and aesthetic benefits.

SMART SURFACES & LEED BD+C V5

LEED V5: SUSTAINABLE SITES (SS)

Earn any of the following LEED Sustainable Sites (SS) credits by implementing the corresponding Smart Surfaces into a new development and meeting any additional requirements.

Smart Surfaces	LEED BD+C v5 Credit	LEED v5 Impact Area	Notes
• Rain Garden • Urban Meadow	SSc1: Biodiverse Habitat (1-2 points)	✓ Ecological Conservation & Restoration	Requires protection of healthy greenfield areas, restoring disturbed vegetation and soils with non-invasive native plants, and providing a designated zone for pollinator habitat.
• Urban Meadow	SSc2: Accessible Outdoor Space (1 point)	✓ Quality of Life ✓ Ecological Conservation & Restoration	Space must comply with specified targeted elements in LEED SSc2.
• Porous Pavement • Green Roof • Rain Garden	SSc3: Rainwater Management (1-3 points)	✓ Ecological Conservation & Restoration	LEED awards points based on increasing thresholds for the percentage of runoff managed on-site, with additional points if someone collects and reuses rainwater.
• Reflective Roof • Reflective Pavement • Green Roof • Trees	SSc5: Heat Island Reduction (1-2 points)	✓ Decarbonization ✓ Quality of Life ✓ Ecological Conservation & Restoration	Roofing materials must meet the Weighted nonroof and roof calculation requirements specified in LEED SSc5.

LEED V5: INTEGRATIVE PROCESS, PLANNING, AND ASSESSMENTS (IP)

Earn any of the following LEED Integrative Process, Planning, and Assessments (IP) credits by implementing the corresponding Smart Surfaces into a new development and meeting any additional requirements.

Smart Surfaces	LEED BD+C v5 Credit	LEED v5 Impact Area	Notes
• Reflective Roof • Cool Walls • Green Roof • Green Concrete • Trees • Solar PV	IPp3: Carbon Assessment (Required)	Decarbonization	Smart Surfaces can be used to reduce energy consumption and meet carbon requirements.

LEED V5: WATER EFFICIENCY (WE)

Earn any of the following LEED Water Efficiency (WE) credits by implementing the corresponding Smart Surfaces into a new development and meeting any additional requirements.

Smart Surfaces	LEED BD+C v5 Credit	LEED v5 Impact Area	Notes
• Rain Garden • Bioswale • Green Roof	WEc2: Enhanced Water Efficiency (1-8 points)	Decarbonization	Most suitable for LEED Option 6 where the primary goal is water reuse.

LEED V5: ENERGY & ATMOSPHERE (EA)

Earn any of the following LEED Energy & Atmosphere (EA) credits by implementing the corresponding Smart Surfaces into a new development and meeting any additional requirements.

Smart Surfaces	LEED BD+C v5 Credit	LEED v5 Impact Area	Notes
• Reflective Roof • Cool Walls • Green Roof • Green Concrete • Trees • Solar PV	EAp1: Operational Carbon Projection and Decarbonization Plan (Required)	Decarbonization	Smart Surfaces can be used to reduce energy consumption and meet minimum energy requirements.
• Reflective Roof • Cool Walls • Green Roof • Green Concrete • Trees • Solar PV	EAp2: Minimum Energy Efficiency (Required)	Decarbonization	Smart Surfaces can be used to reduce energy consumption and meet minimum energy requirements.
• Reflective Roof • Green Roof • Trees	EAc2: Reduced Peak Thermal Loads (1-5 points)	Decarbonization	Smart Surfaces can be used to achieve reduced peak heating and cooling loads outlined in EAc2.
• Reflective Roof • Green Roof • Porous Pavement • Trees	EAc3: Enhanced Energy Efficiency (1-10 points)	Decarbonization	Smart Surfaces can be used as part of the solution to achieving energy efficiency metrics in EAc3.
• Solar PV	EAc4: Renewable Energy (1-5 points)	Decarbonization	

LEED V5: MATERIALS & RESOURCES (MR)

Earn any of the following LEED Materials & Resources (MR) credits by implementing the corresponding Smart Surfaces into a new development and meeting any additional requirements.

Smart Surfaces	LEED BD+C v5 Credit	LEED v5 Impact Area	Notes
• Green Concrete	MRc2: Reduced Embodied Carbon (1-3 points)	✓ Decarbonization	Eligible for Path 2: Materials-Type Approach.
• Green Concrete	MRc3: Low-Emitting Materials (1-2 points)	✓ Quality of Life	See MRc3 for more information on types of materials excluded from this credit.
• Green Concrete	MRc4: Building Product Selection and Procurement (1-5 points)	✓ Quality of Life ✓ Ecological Conservation & Restoration	To achieve a point, the project must demonstrate they meet or exceed the threshold for each product category.

LEED V5: INDOOR ENVIRONMENTAL QUALITY (IEQ)

Earn any of the following LEED Indoor Environmental Quality (IEQ) credits by implementing the corresponding Smart Surfaces into a new development and meeting any additional requirements.

Smart Surfaces	LEED BD+C v5 Credit	LEED v5 Impact Area	Notes
• Green Concrete • Reflective Roof • Trees	EQc1: Enhanced Air Quality	✓ Decarbonization	Eligible for use in Option 2: Enhanced Indoor Air Quality Design.

This guide highlights how Smart Surfaces can be utilized not only in new buildings and construction projects but also in existing structures and locations. This versatility facilitates the development of smart cities that align with sustainability goals and objectives in the built environment. Consequently, Smart Surfaces are acknowledged in the USGBC's **LEED for Cities**, demonstrating that the synergy between these systems can extend sustainability from individual buildings to the broader scale of entire cities and communities.

ADDITIONAL RESOURCES

U.S. GREEN BUILDING COUNCIL

U.S. Green Building Council Website ..... usgbc.org/
LEED Rating System ..... usgbc.org/leed
LEED Credit Library ..... usgbc.org/credits
USGBC Membership ..... usgbc.org/membership
LEEDv5 BD+C Reference Guide usgbc.org/leed-v5
LEED for Cities ..... usgbc.org/leed/leed-for-cities

SMART SURFACES COALITION

Smart Surfaces Coalition Website ..... smartsurfacescoalition.org/
SS Technologies & Definitions ..... smartsurfacescoalition.org/smart-surfaces
Cities for Smart Surfaces..... smartsurfacescoalition.org/cities-for-smart-surfaces
Analytical Tools ..... smartsurfacescoalition.org/tools