

LEED® v5

How can glass contribute to LEED® v5 certification

How advanced glazing can support your project's certification goals

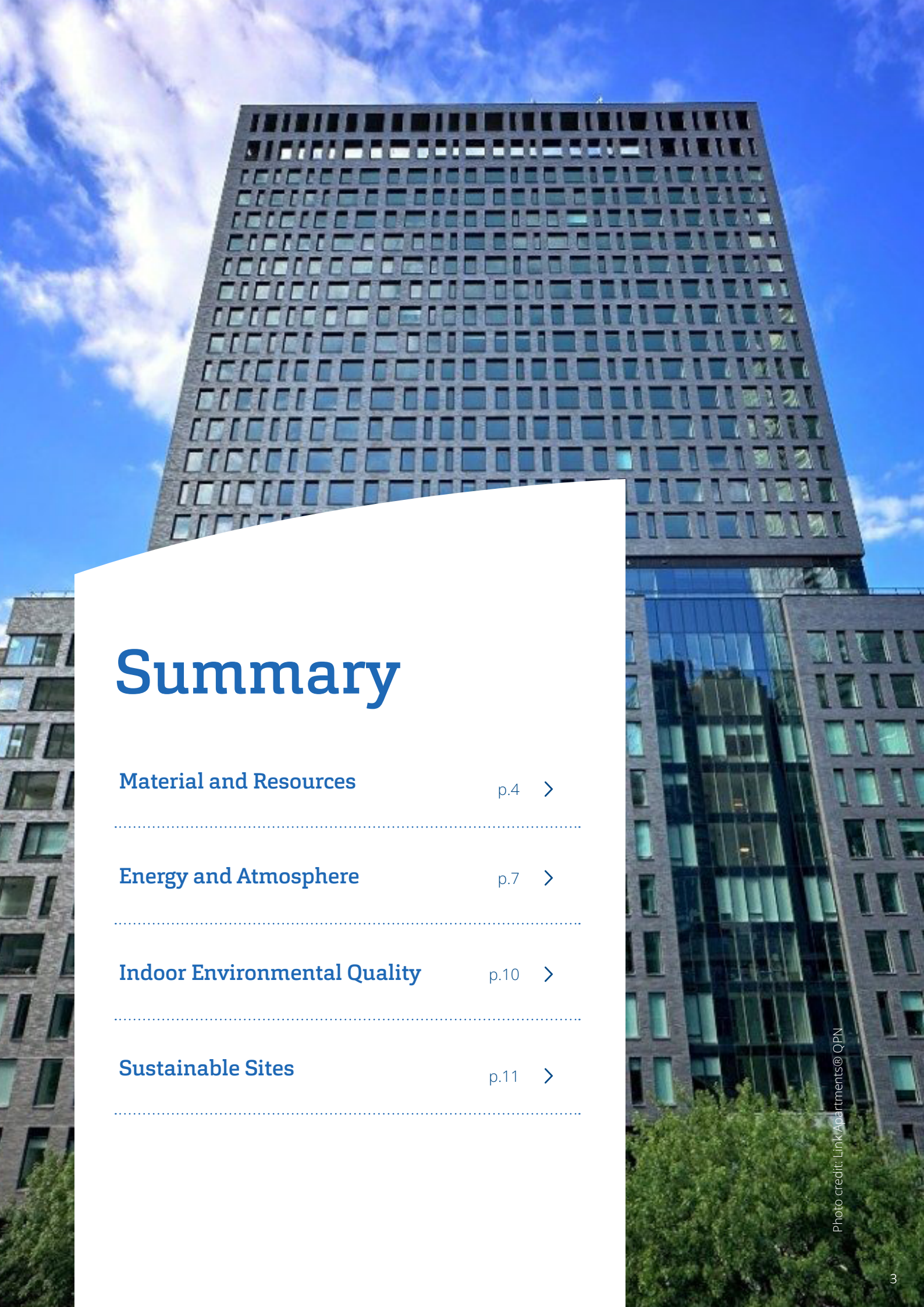
Environmental certification for buildings can be achieved through several recognized assessment methods. One of the most widely used is the Leadership in Energy and Environmental Design (LEED®) rating system, developed by the U.S. Green Building Council.

LEED v5 introduces updated requirements, placing emphasis on three impact areas:

- **Decarbonization**
- **Quality of Life**
- **Ecological Conservation and Restoration**

Rather than focusing solely on individual credits, LEED v5 promotes a **holistic, performance-driven approach** to building design.

Guardian Glass' wide range of products supports architects and designers in addressing these key areas through **high-performance glazing solutions**.



Summary

Material and Resources

p.4 >

Energy and Atmosphere

p.7 >

Indoor Environmental Quality

p.10 >

Sustainable Sites

p.11 >



Materials and Resources (MR)

LEED Prerequisite

Quantify and Assess Embodied Carbon (MRp2)

LEED v5 Impact Area Alignment

Decarbonization

Intent*

To quantify the embodied carbon impacts of the structure, enclosure, and hardscape of a project and assess the top sources of embodied carbon.

Guardian Glass solution

Environmental Product Declarations (EPDs)

- Guardian Glass supports material transparency through **Type III EPDs**, providing third-party verified data on the **lifecycle environmental attributes** of a product.
- LEED makes these declarations mandatory for certain materials used in the building enclosure, for which glass is one of the elements that must be included at a minimum.



Materials and Resources (MR)

LEED Credit

Construction and Demolition Waste Diversion (MRc5)

LEED v5 Impact Area Alignment

Decarbonization; Ecological Conservation and Restoration

Intent*

To reduce construction and demolition waste disposed of in landfills and incineration facilities and pollution to the environment. To reduce the environmental impacts and embodied carbon of manufacturing new materials and products. To delay the need for new landfill facilities that are often located in frontline communities. To create green jobs and materials markets for building construction services.

Guardian Glass solutions

Glass cullet

- Glass is a recyclable material that can be reintroduced into **float glass production** when quality allows, or recycled into other products such as glass bottles, insulation materials or road aggregates. In the production of float glass, the **use of 1 ton of cullet saves approximately 1.2 tons of virgin raw materials** such as sand, dolomite, soda ash and limestone.

Building renovation and façade retrofit projects

- Guardian Glass can support the assessment of existing glazing to **identify recycling opportunities** and, where available, connect project teams with specialized companies to dismantle glazing on site, process it into cullet (broken glass) and, when appropriate, reintroduce it into our production to manufacture new float glass.



Materials and Resources (MR)

LEED Credit

Reduce Embodied Carbon (MRc2)

LEED v5 Impact Area Alignment

Decarbonization

Intent*

To track and reduce embodied carbon of major structural, enclosure, and hardscape materials from construction processes on new construction and renovation projects.

Guardian Glass solution

Lower carbon glass

- **Guardian NEXA™** is a range of lower carbon glass solutions designed to help reduce the embodied carbon of architectural façades. It enables measurable reductions compared to standard glass while maintaining the same optical quality and performance.
- Guardian NEXA glass products are supported by **Environmental Product Declarations (EPDs)** with third-party verified embodied carbon values.
- The range can be combined with **high-performance SunGuard™ coatings** to help meet a project's energy efficiency requirements.



Energy and Atmosphere (EA)

LEED Prerequisite

Operational Carbon Projection and Decarbonization Plan (EAp1)

LEED v5 Impact Area Alignment

Decarbonization

Intent*

To enable building stakeholders to visualize how their current design decisions will impact their project's long-term operational carbon emissions and to ensure that stakeholders are planning for low-carbon outcomes from the project's inception.

Guardian Glass solutions

Guardian Glass **digital tools** can support **early-stage energy assessment**.

The Performance Calculator (part of the Glass Analytics™ suite)

- Allows users to evaluate the thermal and optical performance of multiple glazing configurations. It provides key performance data such as the U-value and solar factor, helping project teams evaluate how glazing can influence the demand on HVAC systems and thus a building's operational carbon, supporting evaluation of design options through simplified energy modeling.

The Building Energy Calculator (where regionally available)

- Uses the glazing make-ups created in the Performance Calculator to estimate and compare energy consumption, costs and payback across climate zones.



Energy and Atmosphere (EA)

LEED Prerequisite

Minimum Energy Efficiency (EAp2)

LEED v5 Impact Area Alignment

Decarbonization

Intent*

To promote resilience and reduce the environmental and economic harms of excessive energy use and greenhouse gas emissions by achieving a minimum level of energy efficiency.

Guardian Glass solutions

Guardian SunGuard™ high-performance glass

- It can help meet or exceed glazing performance targets aligned with ASHRAE 90.1-2022 by supporting building energy efficiency through **optimized thermal insulation, solar control, and natural daylighting**. When combined with advanced warm-edge spacer technologies in insulating glazing units, high-performance coated glass can further reduce heating and cooling loads, while maintaining high levels of natural daylight transmission.

The Performance Calculator

- Enables project teams to compare glazing configurations using verified thermal and optical data, such as U-value, Solar Heat Gain Coefficient (SHGC), and Visible Light Transmission (VLT), and to understand their contribution to overall energy performance, supporting informed decision-making and alignment with LEED requirements.



Energy and Atmosphere (EA)

LEED Credit

Enhanced Energy Efficiency (EAc3)

LEED v5 Impact Area Alignment

Decarbonization

Intent*

To design buildings that minimize energy use to reduce the environmental damage caused by resource extraction, air pollution, and greenhouse gas emissions and to facilitate the transition to a clean energy future.

Guardian Glass solutions

Guardian SunGuard high-performance coated glass

- It can contribute to building energy performance by **selectively transmitting daylight while limiting solar heat gains and providing thermal insulation**, helping to reduce demand on HVAC systems and artificial lighting.

The Building Energy Calculator (where available regionally)

- Allows project teams to **estimate and compare energy consumption** for different glazing options across a range of climate zones. This schematic design tool is based on hourly simulations using glazing configurations, building parameters and project location.

Comprehensive analysis using LBNL Window software

- Guardian Glass provides comprehensive analysis using LBNL Window software, a widely used tool for **fenestration performance assessment**. It enables the analysis of products made from combinations of glazing layers, gas fills, frames and spacers under different environmental conditions and orientations. The software includes algorithms consistent with ASHRAE for calculating U-values and Solar Heat Gain Coefficient (SHGC).
- This supports a detailed performance evaluation, helping project teams assess glazing and window system options where **incremental improvements contribute to meeting high-level certification targets**.



Indoor Environmental Quality (EQ)

LEED Credit

Occupant Experience (EQc2)

LEED v5 Impact Area Alignment

Quality of Life; Ecological Conservation and Restoration

Intent*

To move beyond neutral or sufficient spaces toward human-centered design that supports customization, enjoyment, and emotional connections between people and the building, thus increasing the likelihood of consistent satisfaction and ongoing stewardship.

Guardian Glass solutions

Integrated biophilic design

- By allowing daylight penetration and maintaining a visual connection to nature or the urban context, glazing can support design strategies aligned with biophilic principles.

Quality views

Guardian SunGuard high-performance glass with VLT above 40 %

- Contributes to occupant experience by enabling consistent access to daylight and views of the outdoor environment. SunGuard glass solutions with visible light transmittance (VLT) above 40% support compliance with LEED requirements for quality views. They enable these daylight and view requirements to be achieved without compromising energy performance.

Acoustic criteria for indoor spaces

Laminated glass

- Laminated glass, particularly when incorporating an acoustic interlayer such as Guardian LamiGlass™ Acoustic (where available regionally), reduces sound transmission through the glazing. This can limit noise from external sources as well as from adjacent interior spaces, contributing to improved acoustic comfort for occupants.

The Acoustic Assistant (part of the Glass Analytics suite)

- This online tool allows users to estimate the acoustic performance of glazing configurations, supporting the assessment of indoor acoustic conditions and helping demonstrate that the acoustic expectations defined for interior spaces are met.



Sustainable Sites (SS)

LEED Credit

Biodiverse Habitat (SSc1)

LEED v5 Impact Area Alignment

Ecological Conservation and Restoration

Intent*

To conserve existing natural areas, enhance biodiversity, restore damaged areas, and provide thriving habitats for local wildlife.

Guardian Glass solution

- **Guardian Bird1st** is a range of bird-friendly glass solutions that achieve a **Threat Factor below 30**, as measured by the American Bird Conservancy, in line with LEED v5 requirements.

* Source : U.S. Green Building Council, www.usgbc.org



Guardian Glass supports architects and designers throughout the design process with dedicated tools and expertise that help inform early design decisions and **evaluate façade performance**, including energy efficiency and material impact.

The Performance Calculator enables users to model the thermal and optical properties of glazing configurations while also providing an **estimate of the embodied carbon equivalent**.

Guardian Glass also provides support through its **LEED Accredited Professionals** (Building Design + Construction), who bring up-to-date knowledge of LEED requirements and building practices, and can assist project teams in addressing specific LEED® criteria.

GET IN TOUCH →

Contact us to receive tailored recommendations from our experts based on your project's certification goals.

Guardian, the G Logo, Guardian Glass, Guardian NEXA, SunGuard, Guardian LamiGlass, and Bird1st, and Glass Analytics are trademarks of Guardian Industries LLC and/or its affiliates. USGBC® and the related logo are trademarks owned by the U.S. Green Building Council® and are used with permission.

©2026 Guardian Glass