



UPDATED FOR LEED VERSION 3

THE SUNGUARD® GUIDE TO LEED

WE MAKE BUILDINGS GREENER – WITH ADVANCED ARCHITECTURAL GLASS



EARN LEED POINTS WHEN YOU **BUILD WITH LIGHT™**



When you're looking at LEED, look to SunGuard® from GUARDIAN.

LEED means leadership in greener buildings.

Building design that enhances the indoor environment while protecting the natural environment – that's the goal of the Leadership in Energy and Environmental Design (LEED) rating system, developed by the U.S. Green Building Council.

The LEED system promotes sustainable buildings, awarding points for reducing energy use, improving indoor environmental quality and promoting a whole-building approach to sustainability.

In most cases, LEED compliance is voluntary, although more and more public- and private-sector clients are making it mandatory. In either case, we believe that ecologically responsible building is simply the right thing to do.

This brochure shows you how SunGuard® Advanced Architectural Glass can help you earn credit points in five of the seven LEED categories.

Committed to the environment.

GUARDIAN is proud to be a member of the U.S. Green Building Council, a coalition of building-industry leaders that promotes and creates environmentally responsible structures. GUARDIAN is also part of the federal ENERGY STAR program, aimed at increasing energy efficiency and reducing greenhouse-gas emissions.



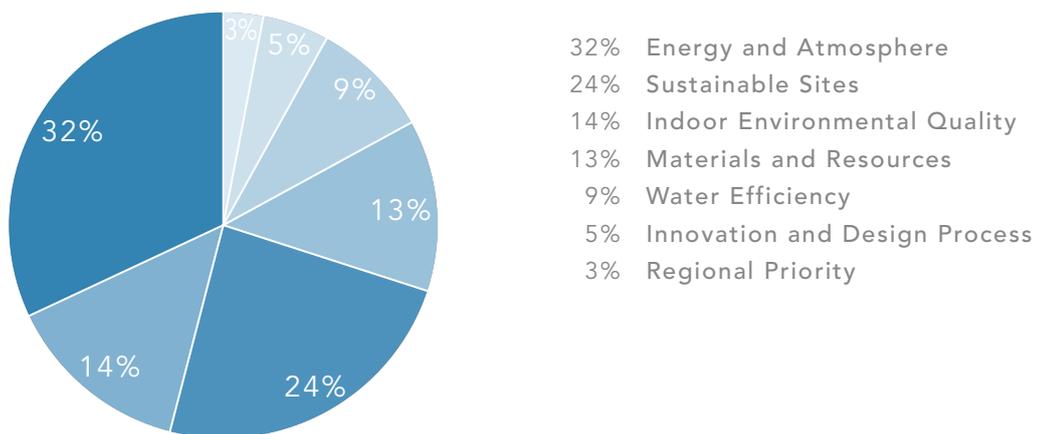
SunGuard® glass improves the environment – inside and out.

Few materials can make a building greener faster than high-performance glass. And as one of the world's leading producers of architectural glass, no one is better qualified to help your project earn LEED points than GUARDIAN. Our SunGuard® products offer the largest selection of post-temperable sputter-coated glass in the world, giving you the striking appearance you want, while delivering the comfort, functionality and energy savings you need.

Earning you LEED points in five categories.

LEED 2009 for New Construction v.3.0 is a voluntary standard for developing high-performance sustainable buildings. Using SunGuard® glass can boost your LEED score in up to five categories. Some are very apparent; others you may not think of at first. But all of them can help you maximize your building's appearance without compromising its energy performance.

Point Distribution by LEED Category



The LEED scoring system.

To qualify as LEED-certified, a building must score at least 40 of 110 possible points. Higher levels of compliance are possible, as shown below.

Level of compliance	Leed points
Certified	40-49
Silver	50-59
Gold	60-79
Platinum	80-110

Although LEED does not certify a specific product, SunGuard® Advanced Architectural Glasses can provide up to 34 LEED points.

Leed category	Leed credit	Possible points
Energy and Atmosphere	Credit 1: Optimize Energy Performance	1-19
Materials and Resources	Credit 4: Recycled Content	1-4
	Credit 5: Regional Materials	
Indoor Environmental Quality	Credit 8.1 and 8.2: Daylight and Views	1-2
Innovation and Design Process	Credit 1: Innovation in Design	1-5
Regional Priority	Credit 1: Regional Priority*	1-4
Grand total		Up to 34

* Only projects in the U.S.A. are eligible for Regional Priority credits.

The charts on the following pages further illustrate the LEED categories, and credits as well as SunGuard® Solutions for complying with LEED standards.

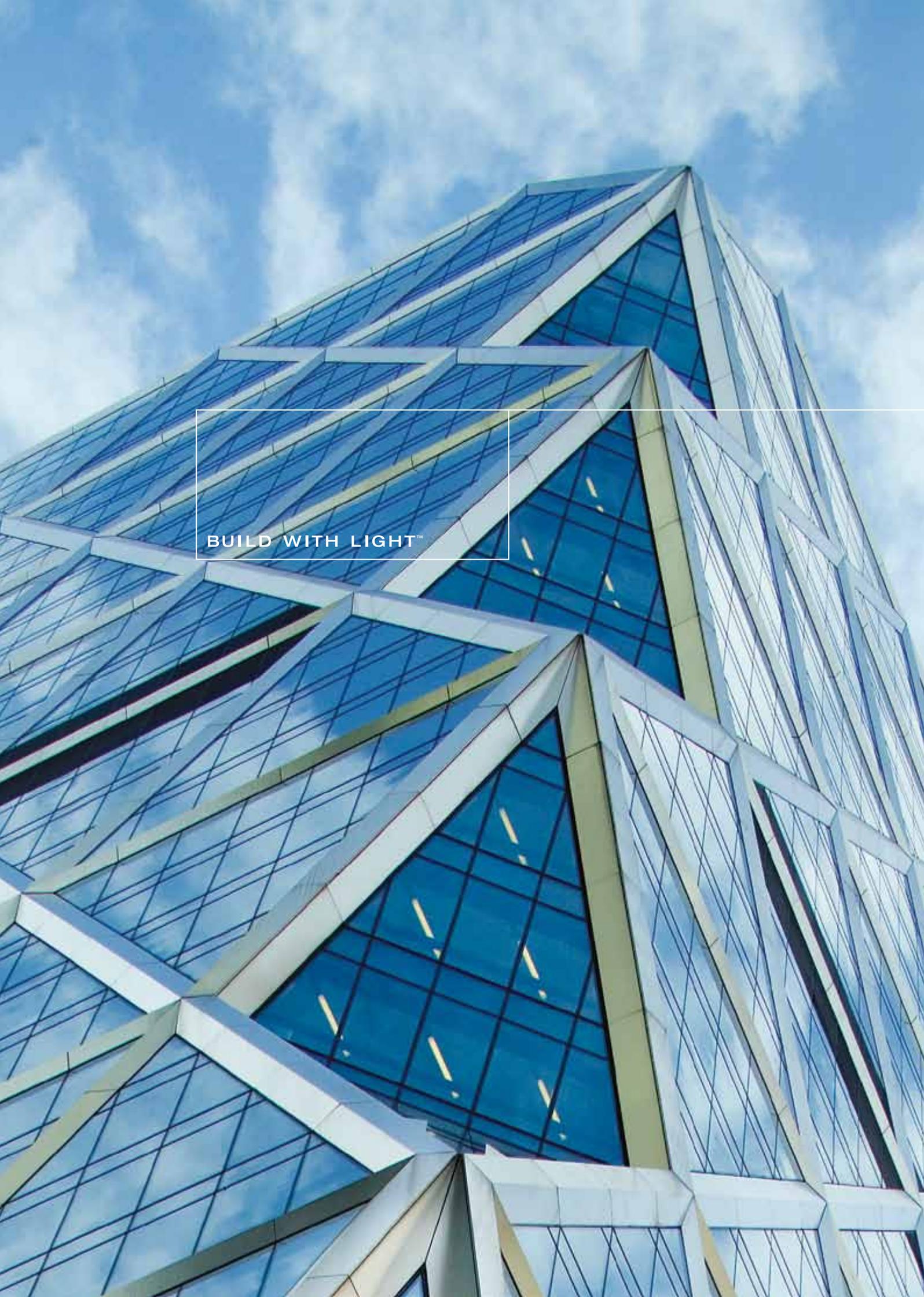
Leed category	Leed credit	Leed points	The intent
Energy and Atmosphere	Credit 1: Optimize Energy Performance	1-19	To increase energy performance above the prerequisite standard, reducing the environmental impact of excessive energy use.
Materials and Resources	Credit 4: Recycled Content 10% - 20% (post-consumer + 1/2 pre-consumer).	1-2	To increase demand for building products using recycled materials, reducing the need to extract and process new materials.
	Credit 5: Regional Materials: 10% - 20% extracted, processed and manufactured regionally.	1-2	To increase demand for building materials and products extracted or manufactured regionally, reducing the pollution caused by transporting them.

The requirements	GUARDIAN SunGuard® solutions
<p>Here are three ways to comply:</p> <ol style="list-style-type: none"> 1) Reduce energy costs compared to baseline performance rating per ANSI/ASHRAE/IESNA Standard 90.1-2007, as demonstrated by a wholebuilding simulation using the Building Performance Rating Method in Appendix G of the Standard. 2) Comply with the prescriptive measures of the ASHRAE Advanced Energy Design Guide appropriate to the project scope. 3) Comply with the prescriptive measures identified in the Advanced Buildings™ Core Performance™ Guide developed by the New Buildings Institute. 	<p>Our High Selective SN & SNX, HP and Solar Series give you a wide spectrum of beautiful, energy-saving choices, with varying degrees of light transmission and reflectivity. So you're truly able to BUILD WITH LIGHT™.</p> <p>Choose from the many types of SunGuard® Advanced Architectural Glass.</p> <p>SunGuard® High Selective SN 70/41, SN 70/37 and SN 62/34 are among the highest-performing coated glass products. With a visible light transmittance of 70% and 62%, respectively, SunGuard® High Selective SN 70/41, SN 70/37 and SN 62/34 can be used on the #2 surface for designs that call for a neutral appearance with maximum solar control. In addition, SN 70/41 and SN 70/37 can be placed on the #3 surface in combination with a tinted or coated outboard lite for even more energy savings.</p> <p>For varying degrees of color and solar heat gain coefficients, consider SunGuard®'s HP series. Light Blue 62/52, Royal Blue 41/29, Neutral 60/40, Neutral 50/32 and Neutral 41/33, combine energy- efficient performance with medium reflectivity and light transmission.</p> <p>And, of course, all SunGuard® Advanced Architectural Glass:</p> <ul style="list-style-type: none"> • Meets or exceeds European energy codes. • Is available on ExtraClear™ or green substrates for a wider variety of color options.
<p>Use materials in such a way that the sum of post-consumer recycled content plus one-half of pre-consumer content constitutes at least 10% or 20%, based on cost, of the total value of materials in the project.</p>	<p>GUARDIAN float glass, including SunGuard® Advanced Architectural Glass, contains recycled glass, of which a small amount is pre-consumer content. Under LEED guidelines, only scrap glass brought in from other manufacturing facilities can qualify as pre-consumer, so the percentage varies depending on the location of the factory and available supply.</p> <p>All products provided by the European GUARDIAN plants contain recycled material. For more information, please contact your local GUARDIAN representative.</p>
<p>Use building materials or products that have been extracted, harvested or recovered, as well as manufactured, within 800 km of the project site for a minimum of 10% or 20% (based on cost) of the total materials value. If only a fraction of a product or material is extracted/harvested/recovered and manufactured locally, then only that percentage (by weight) shall contribute to the regional value.</p>	<p>The primary raw material for architectural glass is silica sand. Most GUARDIAN plants are within 800 km of their sand supply, which reduces energy spent in transit – and can earn LEED points. Also, with our extensive network of independent fabricators, chances are excellent that there's one within 800 km of your project – which can contribute to the 800 km-LEED credit. GUARDIAN manufactures SunGuard® coatings at multiple locations in Europe.</p>

Leed category	Leed credit	Leed points	The intent
Indoor Environmental Quality	Credit 8.1: Daylight and Views: Daylight for 75% of spaces.	1	To provide a building's occupants with a connection between indoor and outdoor spaces, by allowing daylight into, and providing views from, regularly occupied spaces in the building.
	Credit 8.2: Daylight and Views: Views for 90% of spaces.	1	
Innovation and Design Process	Credit 1: Innovation in Design	1-5	To provide design teams and projects the opportunity to be awarded points for exceptional performance above LEED-NC requirements and/or innovative performance in Green Building categories not specifically addressed by the LEED-NC Green Building Rating System.
Regional Priority	Credit 1: Regional Priority*	1-4	To provide design teams and projects the opportunity to be awarded bonus points for achieving existing credits that USGBC chapters and regional councils have designated as important environmental issues facing the region in which the project is located.

* Only projects in the U.S.A. are eligible for Regional Priority credits.

The requirements	GUARDIAN SunGuard® solutions
<p>To achieve daylight penetration to 75% of regularly occupied spaces. There are four ways to comply:</p> <ol style="list-style-type: none"> 1) Computer simulation demonstrating a minimum daylight illumination level of 25 footcandles (269 lux). 2) Use a combination of side-lighting and/or top-lighting to achieve a total daylighting zone that is at least 75% of all the regularly occupied spaces. 3) Records of indoor light measurements indicating a minimum of 25 footcandles (269 lux). 4) Any of the above calculation methods may be combined. <p>Some spaces are excluded from these requirements, such as copy rooms, storage areas, mechanical plant rooms, laundry rooms and other low-occupancy support areas. Exceptions can also be made for areas where daylight could actually hinder tasks. Decisions are made based on the merits of each individual case.</p> <p>Same as above but achieve a direct line of sight to vision glazing for building occupants in 90% of all regularly occupied spaces.</p>	<p>SunGuard® Advanced Architectural Glass provides a wide range of thermal and light control, giving you maximum design flexibility. SunGuard® High Selective SN 70/41, SN 70/37 and SN 62/34 allow a visible light transmittance of 70% and 62%, respectively, yet are also among the highest-performing coated glass products.</p> <p>GUARDIAN also offers a variety of other SunGuard® coated glass products with light transmission from 8% to over 60%.</p> <p>And, of course, SunGuard® Advanced Architectural Glass:</p> <ul style="list-style-type: none"> • Meets or exceeds European energy codes. • Is available on ExtraClear™ or green substrates.
<p>In writing, identify the intent of the proposed innovation credit, the proposed requirement for compliance, the proposed submittals to demonstrate compliance and the design approach (strategies) that might be used to meet the requirements.</p>	<p>SunGuard® Advanced Architectural Glass products can provide energy performance that substantially exceeds energy code requirements. Please contact your GUARDIAN Architectural Sales Manager for more information on the right product for your project.</p>
<p>Implement green building strategies that address the important environmental issues facing the region in which the project is located. There are six LEED credits that are prioritized, based on the environmental issues for each region and a project can be awarded as many as four extra points, one point each for achieving up to four of the six priority credits.</p>	<p>SunGuard® Advanced Architectural Glass products can provide high transmittance of light with low solar heat gain to achieve priority credits.</p>



BUILD WITH LIGHT™

We'll help you BUILD WITH LIGHT™.

And build LEED points, too.

Nobody offers more post-temperable sputter-coated glass options than GUARDIAN. And our specialists are always available to help you find the best products and techniques to raise your LEED score.

Just some of the LEED-certified buildings using GUARDIAN glass.

SunGuard® Advanced Architectural Glass is improving the indoor and outdoor environments at these buildings, which have received or applied for LEED certification.

Arundel Preserve, Hanover, MD
BioSquare D, Boston, MA
Collaboration 3, Greenville, SC
Cyan/PDX, Portland, OR
Ebeid Hospice Residence, Sylvania, OH
Fluor World Headquarters, Irving, TX
GVSU JC Kennedy Hall of Engineering, Grand Rapids, MI
Heirst Corporation, New York, NY
Heifer International, Little Rock, AR
Kalamazoo Middle School, Kalamazoo, MI
National Business Park Building, Columbia, MD
Peregrine Financial, Waterloo, IA
Terrazzo, Nashville, TN
The Burnham Institute, Orlando, FL
The Proximity Hotel, Greensboro, NC
USAA Campus, Phoenix, AZ
Westminster Center South, New Westminster, BC
Winrock, Little Rock, AR
Hochhaus Süddeutscher Verlag, Munich, Germany

In addition, the following LEED-certified buildings use GUARDIAN low-iron UltraClear™ glass.

Clinton Library, Little Rock, AR
Seven World Trade Center, New York, NY

SunGuard® Products are available at several locations situated throughout Europe from GUARDIANs independent network of Processors. Please contact your local GUARDIAN representative for further information.

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MOTIF:
PROJECT:
LOCATION:
ARCHITECT:
PRODUCT NAME:

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GKK+ Architekten
SG Solar Neutral 67

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