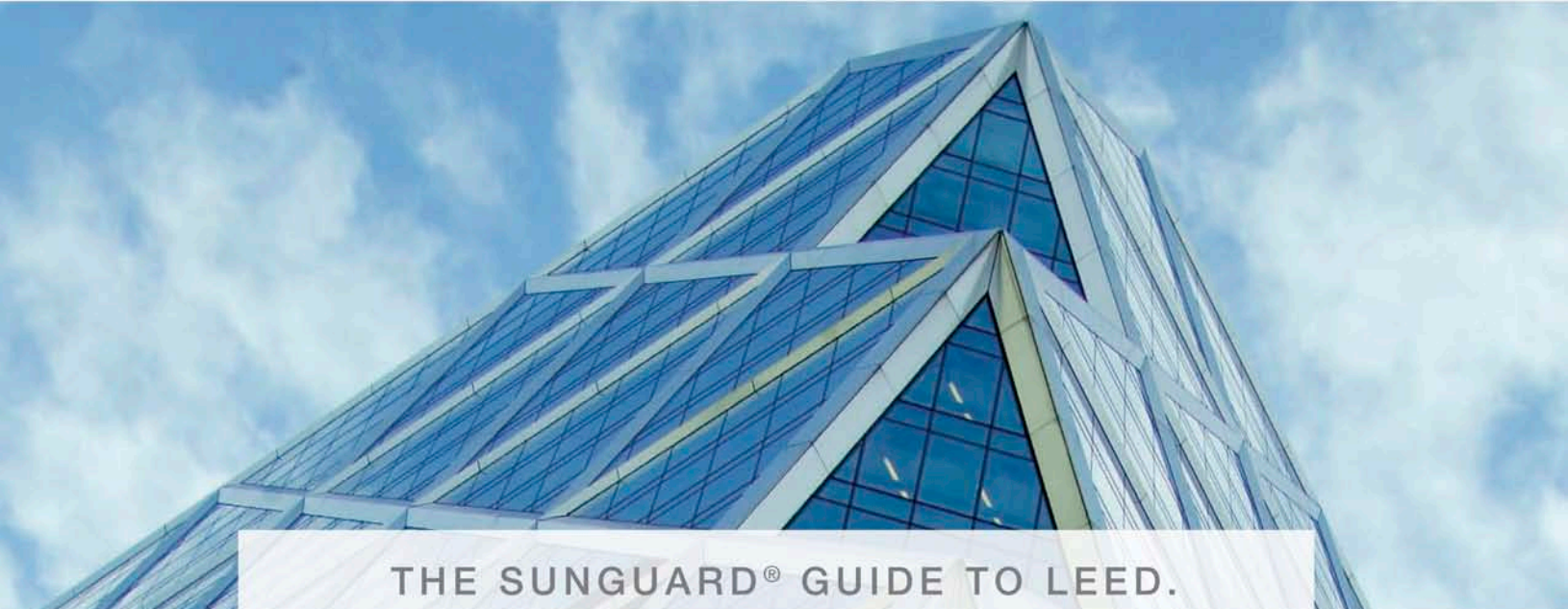


EARN LEED POINTS WHEN YOU BUILD WITH LIGHT.™



THE SUNGUARD® GUIDE TO LEED.

We make buildings greener. With Advanced Architectural Glass.



GUARDIAN INDUSTRIES CORP.





## 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 using recycled materials, reducing energy use (both during and after construction) and other ways of minimizing impact on the environment.

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 four of the six LEED categories. If you'd like more details, call Guardian at 1-866-GuardSG (482-7374).

### 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.



HEARST CORPORATION  
NEW YORK, NY USA

ARCHITECT: Foster and Partners  
GLAZIER: Permasteelisa  
FABRICATOR: Zadra  
GLASS: Guardian SunGuard SuperNeutral Series

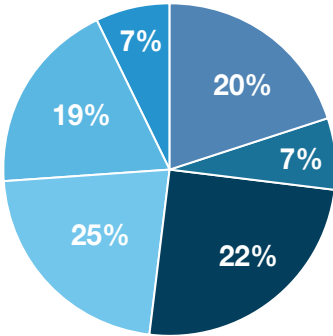
## SunGuard glass improves the environment – inside and out.

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 four categories.

LEED for New Construction v.2.2 is a voluntary standard for developing high-performance sustainable buildings. Using SunGuard glass can boost your LEED score in up to four 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**



- 7% Water Efficiency
- 7% Innovation and Design
- 19% Materials and Research
- 20% Sustainable Sites
- 22% Indoor Environmental Quality
- 25% Energy and Atmosphere

## The LEED scoring system.

To qualify as LEED-certified, a building must score at least 26 of 69 possible points. Higher levels of compliance are possible, as shown below.

LEVEL OF COMPLIANCE	LEED POINTS
CERTIFIED	26-32
SILVER	33-38
GOLD	39-51
PLATINUM	52-69

Although LEED does not certify a specific product, using SunGuard Advanced Architectural Glass can help you earn up to 20 LEED points.

LEED CATEGORY	LEED CREDIT	POSSIBLE POINTS
ENERGY AND ATMOSPHERE	Credit 1: Optimize Energy Performance	1-10
MATERIALS AND RESOURCES	Credits 4.1 and 4.2: Recycled Content  Credits 5.1 and 5.2: Regional Materials	1-4
INDOOR ENVIRONMENT	Credits 8.1 and 8.2: Daylight Views	1-2
INNOVATION AND DESIGN PROCESS	Credits 1.1 to 1.4: Innovation in Design	1-4
<b>GRAND TOTAL</b>		<b>UP TO 20</b>

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
<p><b>ENERGY &amp; ATMOSPHERE</b></p>	<p><b>Credit 1:</b> Optimize Energy Performance</p>	<p>1-10 LEED points.</p>	<p>To increase energy performance above the prerequisite standard, reducing the environmental impact of excessive energy use.</p>
<p><b>MATERIALS &amp; RESOURCES</b></p>	<p><b>Credit 4.1:</b> Recycled Content 10% (post-consumer + 1/2 pre-consumer).</p> <p><b>Credit 4.2:</b> Recycled Content 20% (post-consumer + 1/2 pre-consumer).</p>	<p>1 point per credit.</p>	<p>To increase demand for building products using recycled materials, reducing the need to extract and process new materials.</p>

Here are three ways to comply:

1) Reduce energy costs compared to baseline performance rating per ASHRAE/IESNA Standard 90.1-2004 (without amendments), as demonstrated by a whole-building 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 for Small Office Buildings 2004.

3) Comply with the Basic Criteria and Prescriptive Measures of the Advanced Buildings Benchmark™ Version 1.1 (with exceptions).

Our SuperNeutral,™ High Performance 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.

Choose from 11 types of SunGuard Advanced Architectural Glass. Most SunGuard Advanced Architectural Glass will meet the U.S. Department of Energy's "spectrally selective" definition: a light to solar gain (LSG) ratio of 1.25 or higher. SunGuard LSG ratios can approach 2.0.

SunGuard SuperNeutral 68 and SuperNeutral 54 are among the highest-performing coated glass products. With a visible light transmittance of 68% and 54%, respectively, SunGuard SuperNeutral 68 and SuperNeutral 54 can be used on the #2 surface for designs that call for a neutral appearance with maximum solar control. In addition, SuperNeutral 68 can be placed on the #3 surface in combination with a tinted or coated outboard lite for even more energy savings.

For varying degrees of color and solar heat gain coefficients, consider SunGuard's High Performance series: SunGuard Light Blue 63, SunGuard Royal Blue 40, SunGuard Neutral 61, SunGuard Neutral 50 and SunGuard Neutral 40. SunGuard AG 43 and SunGuard AG 50 combine energy-efficient performance with medium reflectivity and light transmission.

And, of course, all SunGuard Advanced Architectural Glass:

- Meets or exceeds local and/or national energy codes.
- Is available in clear or green substrates for a wider variety of color options. In addition, SuperNeutral Series coatings are available on low-iron UltraWhite glass.

Twenty-four choices in all. With so many coating options on different substrates, SunGuard Advanced Architectural Glass gives you the flexibility you need for both striking design and optimum LEED performance.

Use materials in such a way that the sum of post-consumer recycled content plus one-half of pre-consumer content equals at least 10% of the total value of materials in the project.

Use materials in such a way that the sum of post-consumer recycled content plus one-half of pre-consumer content equals at least 20% of the total value of materials in the project.

In a building with large amounts of architectural glass, using recycled glass can raise your LEED score.

Guardian float glass, including SunGuard Advanced Architectural Glass, contains an average of 20% recycled glass cullet (scrap glass), some of which is pre-consumer content. Under those rules, 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. To find the pre-consumer percentage for the Guardian factory nearest you, call 1-866-GuardSG (482-7374), or e-mail us at [sunguard@guardian.com](mailto:sunguard@guardian.com).

LEED CATEGORY	LEED CREDIT	LEED POINTS	THE INTENT
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**MATERIALS & RESOURCES**

**Credit 5.1:**  
Regional Materials: 10% extracted, processed and manufactured regionally.

**Credit 5.2:**  
Regional Materials: 20% extracted, processed and manufactured regionally.

1 point per credit.

To increase demand for building materials and products extracted or manufactured regionally, reducing the pollution caused by transporting them.

**INDOOR ENVIRONMENTAL QUALITY**

**Credit 8.1:**  
Daylight & Views: Daylight for 75% of spaces.

**Credit 8.2:**  
Daylight & Views: Views for 90% of spaces.

1 point per credit.

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.



Use building materials or products that have been extracted, harvested or recovered, as well as manufactured, within 500 miles of the project site for a minimum of 10% (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 region value.

Use building materials or products that have been extracted, harvested or recovered, as well as manufactured, within 500 miles of the project site for a minimum of 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 region value.

The primary raw material for architectural glass is silica sand. Most Guardian plants are within 500 miles of their sand supply, which reduces energy spent in transit – and can earn LEED points. Also, with our extensive network of independent SunGuard Select™ Fabricators, chances are excellent that there's one within 500 miles of your project – which can contribute to the 500-mile LEED credit. Guardian manufactures SunGuard coatings at multiple locations in the U.S. – which could also boost your LEED score. For a SunGuard Select Fabricator near you (there are over 50), call SunGuard at 1-866-GuardSG (482-7374) or visit [www.SunGuardGlass.com](http://www.SunGuardGlass.com).



To achieve daylight penetration to 75% of regularly occupied spaces. There are three ways to comply:

- 1) Achieve a minimum of 2% glazing factor by calculation method.
- 2) Computer simulation demonstrating a minimum daylight illumination level of 25 footcandles.
- 3) Records of indoor light measurements indicating a minimum of 25 footcandles.

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.

Achieve a direct line of sight to vision glazing for building occupants in 90% of all regularly occupied spaces. Exceptions include copy rooms, storage areas, mechanical plant rooms, laundry rooms and other low-occupancy support areas. Other exceptions will be considered on the merits of each individual case.

SunGuard Advanced Architectural Glass provides a wide range of thermal and light control, giving you maximum design flexibility. SunGuard SuperNeutral 68 and SunGuard SuperNeutral 54 allow a visible light transmittance of 68% and 54%, respectively, yet are also among the highest-performing coated glass products.

And, of course, SunGuard Advanced Architectural Glass:

- Meets or exceeds local and/or national energy codes.
- Is available on clear or green substrates.
- Meets the U.S. Department of Energy's "spectrally selective" definition with light to solar gain ratios of up to 1.93.

For more details, call a Guardian Architectural Sales Manager at 1-866-GuardSG (482-7374).





## 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. To find the Guardian Architectural Sales Manager nearest you, give Guardian a call at 1-866-GuardSG (482-7374) or visit [www.SunGuardGlass.com](http://www.SunGuardGlass.com).

## 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.

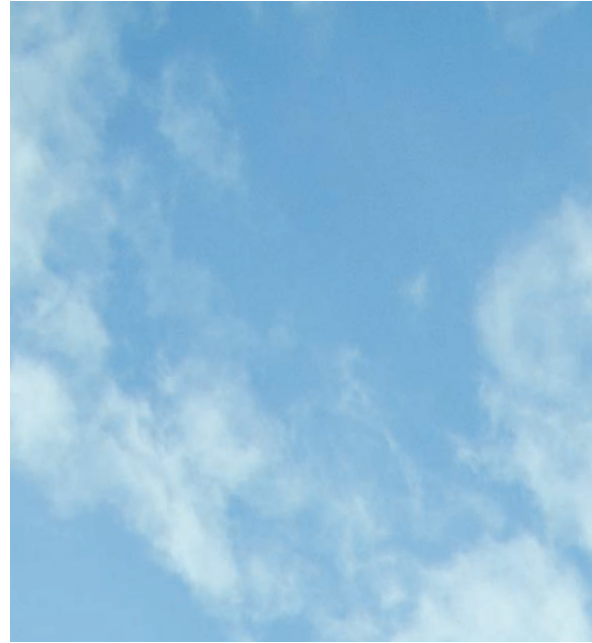
The Art Gallery of Ontario, Toronto, ON  
BioSquare D, Boston, MA  
Collaboration 3, Greenville, SC  
Fluor World Headquarters, Irving, TX  
Hearst Corporation, New York, NY  
Heifer International, Little Rock, AR  
National Business Park Building, Columbia, MD  
Shangri-La Hotel and Resort, Vancouver, BC  
USAA Campus, Phoenix, AZ  
Winrock, Little Rock, AR

In addition, the following LEED-certified buildings use Guardian low-iron UltraWhite™ glass.

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

### HEIFER INTERNATIONAL LITTLE ROCK, AR USA

ARCHITECT: WDSO  
GLAZIER: Ace Glass  
FABRICATOR: Wholesale Glass Distributors  
GLASS: Guardian SunGuard SuperNeutral 68



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