

Natural light.

Natural material.

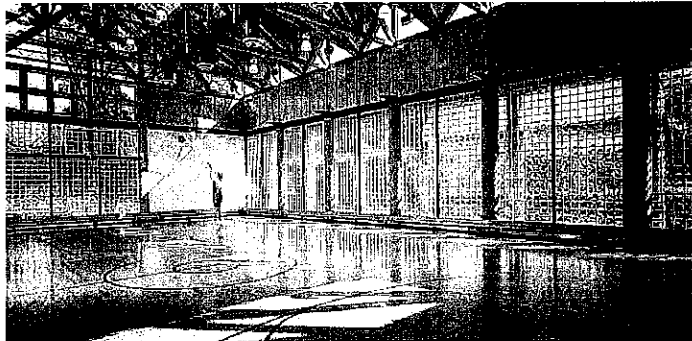
Naturally inspired.

Glass block in commercial space supports sustainable design and LEED® certification

What's more inspiring than form meeting function? Glass block, made largely from sand and limestone, is 100 percent recyclable, inert, low maintenance, and highly durable. Yet its dynamic relationship with light gives architects the opportunity to create both aesthetically pleasing and energy efficient spaces.

As a proven, natural material, glass block can add beauty and inspiration to a project while playing a significant role in sustainable design.

The LEED® (Leadership in Energy & Environmental Design) Green Building Rating System is the nationally accepted benchmark for the design and construction of high performance green buildings. While the use of no single construction material can earn LEED® points, Pittsburgh Corning's glass block can be part of an overall strategy to earn points in several categories:



Energy & Atmosphere

According to Architecture 2030, three-fourths of all electrical energy in the U.S. is used to operate buildings. Reducing energy use in buildings through improved energy performance and energy-saving strategies like daylighting helps reduce the impact buildings have on our atmosphere.

How glass block can help:

Prerequisite 2: Minimum Energy Performance

Glass block's daylighting properties can help achieve the required minimum energy performance for LEED® certification.

Credit 1: Optimize Energy Performance

Glass block can support various strategies, including passive solar designs, to reduce a given building's energy consumption. And because this credit includes interior lighting energy demands, glass block can improve energy performance even more.

Recent developments in glass block have significantly improved thermal performance. Pittsburgh Corning's Energy Efficient Glass Block demonstrates up to a 43% improvement in U value and up to a 52% improvement in Solar Heat Gain Coefficient when compared to the baseline performance ratings for glass block specified in ASHRAE/IESNA 90.1-2007.

Materials & Resources

The production and transport of building materials can impact our environment in many ways. Conserving resources, using local materials and reducing construction waste reduces that impact.

How glass block can help:

Credits 2.1 and 2.2: Construction Waste Management

Both glass block scrap and its packaging can be recycled, nearly eliminating waste.



Technical Information: Glass Block & LEED®

Credits 3.1 and 3.2: Resource Reuse

Salvaged glass block can be reused in some jurisdictions with careful consideration.

Credits 5.1 and 5.2: Regional Materials

Glass block manufactured in a facility within 500 miles of a project site can include that percent (by weight) of the raw materials that are also within 500 miles of the project site toward the calculation of the total regionally located content in all building materials.

With Pittsburgh Corning's glass block manufacturing facility in Port Allegany, PA, architects can achieve credits for projects in several major metropolitan areas, such as Chicago, New York, Philadelphia, Washington D.C., Charlotte, Cleveland, Indianapolis, Columbus.

Indoor Environmental Quality

The U.S. EPA estimates that the average American spends over 80 percent of his/her time indoors. It is important for our own wellbeing to create indoor spaces that are healthy and comfortable.

How glass block can help:

Credit 4: Low Emitting Materials

Glass block meets the intent of eliminating VOCs from the indoor environment when used as interior walls or floors.

Credit 8: Daylight and Views

Glass block provides daylight and views without sacrificing sound control, security and privacy.

Suggested Applications: The Solar Wall Tube by Pittsburgh Corning offers a unique and creative way to maximize natural light entering the building.

Innovation & Design

The LEED® Rating System, while comprehensive, is not complete. Other aspects of sustainable design, not covered in LEED®, are also important. These can be recognized in the Innovation in Design credit.

Suggested Applications: New LightWise® Architectural Systems from Pittsburgh Corning offer all of the benefits of glass blocks in easy-to-install windows and panels and can provide additional resistance to hurricane, blast, intruder or ballistic threats.

Glass Block and Sustainable Design

Pittsburgh Corning glass block not only supports LEED® building certification, it also contributes to sustainable design in other ways:

- 1. Safety and Security**
 - Glass block is non-combustible
 - Glass block combines visibility with security
- 2. Environmentally preferable materials and products**
 - Glass block is made largely from sand, an abundant raw material
 - Glass block is recyclable
 - Glass block is durable
 - Glass block has low construction waste
- 3. Visual Comfort**
 - Certain glass block products may help avoid glare

How glass block can help:

Credit 1 – up to three points

Glass block can help earn points for good acoustics, use of durable materials, and good indoor environmental quality (no VOC, no mold).

Regional Bonus Credits

Pittsburgh Corning will be happy to help you with glass block solutions that can be used to help fulfill specific regional credits. For example, the new LightWise® Architectural Hurricane Resistant window has been tested to the high-wind and large missile impact requirements of Dade County Florida.

Summary

It is important to recognize the value of a holistic approach to sustainable design, and to weigh social and economic considerations as well as environmental ones. Pittsburgh Corning is committed to helping architects and building planners design and construct projects that are both inspired and sustainable. To learn more about glass block applications and sustainable design, visit:





LEED for New Construction and Major Renovation 2009 Project Scorecard

Pittsburgh Corning Glass Block can contribute to those credits highlighted below:

Yes	?	No		26	Points
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sustainable Sites		

Y					
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Prereq 1 Construction Activity Pollution Prevention	Required	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 1 Site Selection	1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 2 Development Density & Community Connectivity	5	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 3 Brownfield Redevelopment	1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 4.1 Alternative Transportation, Public Transportation Access	6	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 4.2 Alternative Transportation, Bicycle Storage & Changing Rooms	1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 4.3 Alternative Transportation, Low-Emitting & Fuel-Efficient Vehicles	3	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 4.4 Alternative Transportation, Parking Capacity	2	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 5.1 Site Development, Protect or Restore Habitat	1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 5.2 Site Development, Maximize Open Space	1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 6.1 Stormwater Design, Quantity Control	1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 6.2 Stormwater Design, Quality Control	1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 7.1 Heat Island Effect, Non-Roof	1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 7.2 Heat Island Effect, Roof	1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 8 Light Pollution Reduction	1	

Yes	?	No		10	Points
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Water Efficiency		

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Prereq 1 Water Use Reduction, 20% Reduction	Required	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 1.1 Water Efficient Landscaping, Reduce by 50%	2	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 1.2 Water Efficient Landscaping, No Potable Use or No Irrigation	2	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 2 Innovative Wastewater Technologies	2	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 3.1 Water Use Reduction, 30% Reduction	2	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 3.2 Water Use Reduction, 40% Reduction	2	

Yes	?	No		35	Points
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Energy & Atmosphere		

Y					
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Prereq 1 Fundamental Commissioning of the Building Energy Systems	Required	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Prereq 2 Minimum Energy Performance: 10% New Bldgs or 5% Existing Bldg Renovations	Required	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Prereq 3 Fundamental Refrigerant Management	Required	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 1 Optimize Energy Performance	1 to 19	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12% New Buildings or 8% Existing Building Renovations	1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16% New Buildings or 12% Existing Building Renovations	3	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	20% New Buildings or 16% Existing Building Renovations	5	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24% New Buildings or 20% Existing Building Renovations	7	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	28% New Buildings or 24% Existing Building Renovations	9	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	32% New Buildings or 28% Existing Building Renovations	11	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	36% New Buildings or 32% Existing Building Renovations	13	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	40% New Buildings or 36% Existing Building Renovations	15	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	44% New Buildings or 40% Existing Building Renovations	17	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	48% New Buildings or 44% Existing Building Renovations	19	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 2 On-Site Renewable Energy	1 to 7	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1% Renewable Energy	1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5% Renewable Energy	3	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9% Renewable Energy	5	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13% Renewable Energy	7	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 3 Enhanced Commissioning	2	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 4 Enhanced Refrigerant Management	2	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 5 Measurement & Verification	3	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 6 Green Power	2	

(chart continued on next page)



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Yes	?	No			Materials & Resources	14	Points
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Y			Prereq 1	Storage & Collection of Recyclables	Required
			Credit 1.1	Building Reuse, Maintain 75% of Existing Walls, Floors & Roof	2
			Credit 1.2	Building Reuse, Maintain 95% of Existing Walls, Floors & Roof	1
			Credit 1.3	Building Reuse, Maintain 50% of Interior Non-Structural Elements	1
			Credit 2.1	Construction Waste Management, Divert 50% from Disposal	1
			Credit 2.2	Construction Waste Management, Divert 75% from Disposal	1
			Credit 3.1	Materials Reuse, 5%	1
			Credit 3.2	Materials Reuse, 10%	1
			Credit 4.1	Recycled Content, 10% (post-consumer + ½ pre-consumer)	1
			Credit 4.2	Recycled Content, 20% (post-consumer + ½ pre-consumer)	1
			Credit 5.1	Regional Materials, 10% Extracted, Processed & Manufactured Regionally	1
			Credit 5.2	Regional Materials, 20% Extracted, Processed & Manufactured Regionally	1
			Credit 6	Rapidly Renewable Materials	1
			Credit 7	Certified Wood	1

Yes	?	No			Indoor Environmental Quality	15	Points
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Y			Prereq 1	Minimum IAQ Performance	Required
Y			Prereq 2	Environmental Tobacco Smoke (ETS) Control	Required
			Credit 1	Outdoor Air Delivery Monitoring	1
			Credit 2	Increased Ventilation	1
			Credit 3.1	Construction IAQ Management Plan, During Construction	1
			Credit 3.2	Construction IAQ Management Plan, Before Occupancy	1
			Credit 4.1	Low-Emitting Materials, Adhesives & Sealants	1
			Credit 4.2	Low-Emitting Materials, Paints & Coatings	1
			Credit 4.3	Low-Emitting Materials, Flooring Systems	1
			Credit 4.4	Low-Emitting Materials, Composite Wood & Agrifiber Products	1
			Credit 5	Indoor Chemical & Pollutant Source Control	1
			Credit 6.1	Controllability of Systems, Lighting	1
			Credit 6.2	Controllability of Systems, Thermal Comfort	1
			Credit 7.1	Thermal Comfort, Design	1
			Credit 7.2	Thermal Comfort, Verification	1
			Credit 8.1	Daylight & Views, Daylight 75% of Spaces	1
			Credit 8.2	Daylight & Views, Views for 90% of Spaces	1

					Innovation & Design Process	6	Points
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			Credit 1.1	Innovation in Design: Provide Specific Title	1
			Credit 1.2	Innovation in Design: Provide Specific Title	1
			Credit 1.3	Innovation in Design: Provide Specific Title	1
			Credit 1.4	Innovation in Design: Provide Specific Title	1
			Credit 1.5	Innovation in Design: Provide Specific Title	1
			Credit 2	LEED® Accredited Professional	1

					Regional Bonus Credits	4	Points
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			Credit 1.1	Region Specific Environmental Priority: Region Defined	1
			Credit 1.2	Region Specific Environmental Priority: Region Defined	1
			Credit 1.3	Region Specific Environmental Priority: Region Defined	1
			Credit 1.4	Region Specific Environmental Priority: Region Defined	1

					Project Totals (Certification Estimates)	110	Points
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Not Certified Certified: 40-49 points Silver: 50-59 points Gold: 60-79 points Platinum: 80+ points



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