

A Green Lite for your LEED® Project

The Building Green GreenSpec® Directory designates SageGlass® glazing as a green product – and one that can help your project earn LEED® credits in these categories:

ENERGY AND ATMOSPHERE:

Credit 1: Optimize Energy Performance

(1-19 points possible)

Intent: “To achieve increasing levels of energy performance beyond the prerequisite standard to reduce environmental and economic impacts associated with excessive energy use.”

Lawrence Berkeley National Lab estimates up to 20% cooling energy savings, up to 60% lighting reduction, and up to 30% reduction in peak demand with the use of SageGlass glazing. Less fossil fuel burned means fewer carbon emissions, which is good for the environment, and lower operating costs, which is good for the building owner.

INDOOR ENVIRONMENTAL QUALITY:

Credit 7.1: Thermal Comfort – Design

(1 point possible)

Intent: “To provide a comfortable thermal environment that promotes occupant productivity and well-being.”

SageGlass glazing can be tinted to stop solar heat gain without blocking the view. In winter, the glazing can be kept in its high transmission state when maximum solar light and heat are desired, and the low-emissivity electrochromic coating helps keep the heat inside the building.

ENERGY AND ATMOSPHERE:

Prerequisite 2: Minimum Energy Performance (Required)

Intent: “To establish the minimum level of energy efficiency for the proposed building and systems to reduce environmental and economic impacts associated with excessive energy use.”

Dynamic SageGlass glazing reduces by as much as 26% the energy consumed in buildings. With more efficient window stock, buildings use less energy (so cause less pollution) and cost less to operate. In many cases they also cost less to build because smaller HVAC systems are required, and the mechanical solar control features such as blinds and sunshades aren’t needed.

INDOOR ENVIRONMENTAL QUALITY:

Credit 8.1: Daylight and Views – Daylight

(1 point possible)

Intent: “To provide for the building occupants with a connection between indoor spaces and the outdoors through introduction of daylight and views into the regularly occupied areas of the building.”

The beauty of SageGlass windows is that you can control the sun’s energy without blocking the view. SageGlass glazing is always transparent, even in its darkest state, so you can always see through the glass. In an evaluation carried out by the Department of Energy, people greatly preferred to be in a room with SageGlass windows over one with static, low-e windows.

SUSTAINABLE SITES:

Credit 8: Light Pollution Reduction

(1 point possible)

Intent: “To minimize light trespass from the building and site, reduce sky-glow to increase night sky access, improve nighttime visibility through glare reduction and reduce development impact from lighting on nocturnal environments.”

When in their tinted state (which transmits only 3.5 percent visible light) during the night, SageGlass glazing dramatically reduces light trespass.

INDOOR ENVIRONMENTAL QUALITY:

Credit 6.2: Controllability of Systems – Thermal Comfort

(1 point possible)

Intent: “To provide a high level of thermal comfort system control by individual occupants or groups in multi-occupant spaces (e.g. classrooms or conference areas) and promote their productivity, comfort and well-being.”

Windows and skylights with SageGlass glazing are highly programmable and can be set up to operate individually or in zones, by single users or for multi-occupant spaces to meet group needs.

*The Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ is a third-party certification program and the nationally accepted benchmark for the design, construction and operation of high-performance green buildings. To earn LEED certification, a building project must meet certain prerequisites and performance benchmarks (“credits”) within each category. (Source: LEED website www.usgbc.org)



What makes SageGlass a sustainable building product?

WHAT MAKES SAGEGLASS GREEN?

People love windows. However, along with the views and outdoor connection that windows provide, they are also a source of energy waste and cause glare and thermal discomfort for building occupants. Historically, building designers have attempted to mitigate the sun's negative effects by incorporating such features as oversized cooling systems, mechanical shading systems, and exterior sunshades. With SageGlass, there is no longer a need to compromise. SageGlass is significantly more energy efficient than static glazing, and it provides a comfortable interior for the occupants while allowing them to keep their view. SageGlass can be operated manually or integrated into a building's energy management system, further optimizing the building's efficiency.

WHAT'S NOT GREEN ABOUT STATIC WINDOWS?

Buildings are the largest source of energy consumption in the world, and energy lost through today's inefficient windows accounts for ~30% of the building heating and cooling energy consumed in the U.S.

SAGEGLASS PRODUCTS: THE BEST OF BOTH WORLDS

Because it can be tinted when it's hot and sunny and clear when it's cloudy, SageGlass provides a daylighting solution that does not require additional shading and blind systems. A building even partially glazed with SageGlass can be designed to take advantage of natural light without compromising the connection to the outdoors.

WHAT HAPPENS AT THE END OF THE PRODUCT'S LIFE?

SageGlass can be disposed of like any static coated glass products (such as low-e).

HOW MUCH ELECTRICITY IS NEEDED TO POWER THE GLAZING?

SageGlass is very energy efficient to operate. In fact, it takes less electricity to control 2,000 square feet of SageGlass glazing than it does to power a 60-watt incandescent light bulb.

The features of SageGlass that lend themselves to sustainable building design:

Benefits of Installing SageGlass Products	Conservation of Natural Resources	Energy Savings	Healthier Indoor Environment	Economic Benefits
Smaller HVAC systems required, resulting in lower power usage by equipment	Equipment cycles less frequently, so it has to be replaced less often and maintenance is lower	Lawrence Berkeley Nat'l Lab estimates peak demand reduction of up to 30%	Decreased volume of airborne particulates from power plants	Lower capital and operating costs
Need for shades, blinds and sunshades eliminated	Elimination of manufacturing and packaging material for these items that need frequent replacement	Fuel used to make and transport replacement products is eliminated	Building occupants derive benefits of true glare and heat control without losing the view	Installation and transportation costs of replacement products eliminated
Windows allow interactive control of heat and light while always maintaining the view and connection to the outdoors	Lower energy translates to a reduction of dependency on oil, natural gas and coal	Lawrence Berkeley Nat'l Lab estimates cooling savings of up to 20% and lighting reduction up to 60%	Improved well-being and outlook for building occupants	Improved productivity, reduced absenteeism, lower medical costs, increased retail sales
In tinted state, windows block 98% of the solar radiation that causes fading	Reduced frequency of replacement of interior materials such as carpets and wall coverings	Less frequent replacement means less fuel is used to make and transport materials	Lessens people's exposure to harmful radiation	Reduced cost for replacing furnishings

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SAGE Electrochromics is the world's leading manufacturer of advanced dynamic glass that tints or clears on demand to optimize daylight and improve the human experience in buildings. SAGE was founded in 1989 and is headquartered near Minneapolis-St. Paul, Minn., in the heart of "the Silicon Valley of the window industry." SAGE is a wholly owned subsidiary of Saint-Gobain of Paris, the world's largest building materials company.

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