

Pre-Engineered Green Power with New Angles



**U.S. Environmental Protection Agency (EPA)
New England Regional Laboratory
North Chelmsford, Massachusetts
by Acquest Development, Buffalo, New York**
ARCHITECT
Bernard Johnson Young, Inc., Rockville, Maryland
GLAZING CONTRACTOR
Hanover Glass Company, Pembroke, Massachusetts
PHOTOGRAPHER
© Gordon Schenck

Architects and building owners increasingly recognize the need for green building products and solutions that improve energy efficiency and enhance building performance without compromising aesthetics. Kawneer has responded to this challenge by designing 1600 PowerShade™ Sun Shade System, a BIPV (building-integrated photovoltaic) sunshade that generates solar power while also providing optimal shade in a total system/single-source solution.

The result is a classically designed sunshade that both conserves and generates energy to reduce building operating costs. Fully tested and factory fabricated, this pre-engineered sunshade blends solar photovoltaic technology with sleek design, easy installation and simple maintenance. In addition, 1600 PowerShade™ is engineered to meet rigorous structural loads while minimizing material requirements.

SINGLE-SOURCE RESPONSIBILITY AND DUAL-POSITION OPTIMIZATION

1600 PowerShade™ can be seamlessly integrated into Kawneer's 1600 Wall System™1 and is based on the innovative and successful curtain wall platform. It is designed to effectively reduce solar heat gain with its exclusive dual-position pivot system, which provides optimal angle and extension for shading a façade in almost any geographic location. A first non-articulating pivot point joins the two components of the strut assembly, enabling a wide range of extension from the façade – from 33" to 47". In view of the 25° latitude differential in the United States, 1600 PowerShade™ is capable of shading an extremely wide range of commercial window conditions.

A second non-articulating pivot point is located at the connection of the PV louver blade and the strut arm. This pivot point allows the PV cells to be optimally positioned to maximize the generation of electricity from the sun – 75 watts per bay at peak performance.



U.S. Environmental Protection Agency (EPA)
New England Regional Laboratory
North Chelmsford, Massachusetts
by Acquest Development, Buffalo, New York
Photography: © Gordon Schenck

ENERGY SAVINGS

1600 PowerShade™ reduces solar heat gain on the glazing, thus lowering building cooling costs. The International Energy Conservation Code (IECC) considers this a benefit of exterior shading devices. The projection factor (PF), a function of the horizontal projection and height of the window, takes into account the shading effect, thereby reducing the dependence on the glass coatings alone to manage solar heat gain.

EASY INSTALLATION AND MAINTENANCE

1600 PowerShade™ requires little maintenance since there are no moving parts. While it is unlikely that the glass PV laminate will require replacement, the intelligent design nonetheless allows for easy replacement without having to disassemble the sunshade or remove it from the building.

Glazing contractors have found installation of 1600 PowerShade™ easy using standard glazing procedures and equipment. Pre-fabricated bay assemblies are efficiently and quickly erected on site. Attachment is achieved by using a centering pin and traditional bolts. All electrical components are isolated from the installation process and are handled independently by an electrical contractor.

AESTHETICS

The clean lines of 1600 PowerShade™ complement curtain wall aesthetics as well as contemporary architectural applications. Laminates with crystalline PV cells are structurally glazed into the aluminum louvers or blades. The finish is high performance and designed to endure for the life of the building. Classic, yet not domineering, 1600 PowerShade™ makes a statement about the building, the owner and the architect. Architects and owners can realize their green goals in a simple, direct visual presentation for all to see. A simple sunshade helps convey interest in conservation, but 1600 PowerShade™ goes further and demonstrates a commitment to innovation by also providing clean energy – for today and the future.

LEED® CREDITS

1600 PowerShade™ can help a project secure potential Leadership in Energy and Environmental Design (LEED®) credits associated with Optimize Energy Performance and On-site Renewable Energy in the Energy & Atmosphere category.

Additionally, credits are given for providing building occupants a connection between the indoors and outdoors through the introduction of daylight and views into occupied areas of the building. 1600 PowerShade™ can assist in achieving maximum daylight while minimizing direct sunlight penetration and solar heat gain.

FOR THE FINISHING TOUCH

Permanodic™ anodized finishes are available in Class I and Class II in seven different colors.

Painted finishes, including fluoropolymer, that meet AAMA 2605 are offered in many standard choices and an unlimited number of specially designed colors.

Solvent-free powder coatings add the “green” element with high performance, durability and scratch resistance that meet the standards of AAMA 2604.