

# Case Study



## Manassas Park Elementary School

MANASSAS PARK, VA

### Owner

Manassas Park City Schools

### Architect/Designers

VMDO Architects  
Charlottesville, VA

### Vitro Products

Solarban® 70 glass

### Glazing Fabricators

Del-Ray Glass Co., Inc.  
Alexandria, VA

### Glazing Contractor

Del-Ray Glass Co., Inc.  
Alexandria, VA

## PROJECT BACKGROUND

An award-winning, 140,000-square-foot elementary school in suburban Virginia is teaching more than the traditional reading, writing and arithmetic. Students are learning to be environmentally responsible by studying the building itself and by seeing, first-hand, the effects of energy conservation, sustainability, recycling and water conservation.

Manassas Park Elementary School + Pre-K (MPES) is the first green school in Manassas, and it is designed around the fundamental premise that people, especially children, cannot be expected to preserve or protect something they do not understand. A key element in making the school green was the selection of Solarban® 70 glass (formerly Solarban® 70XL glass) by Vitro Architectural Glass (formerly PPG glass), a solar control, low-e glass that offers the industry's best combination of visible light transmittance and solar control, together with a clear glass appearance.

"This building is 100 percent efficient," said Wyck Knox, the VMDO architect who designed MPES. "Every space serves an environmental and educational mission.



MPES, the first green school in Manassas, was designed with Solarban® 70 glass by Vitro Architectural Glass (formerly PPG glass) to maximize visible light transmittance and solar control





The first LEED®-certified building in Manassas, MPES was also recognized by AIA Committee on the Environment as one of the country's top green building projects of 2009.

Inside and out, sustainable design is integrated with the elementary curriculum. Design decisions were made with the expressed goal of showcasing as many teachable moments as possible.”

With everything from rainwater harvesting and geothermal well fields to solar tubes, recycling stations, and even reserved parking spots for alternative fuel cars, the school provides hands-on learning opportunities at every turn.

“Students spend a lot of time looking outside,” said Knox. “And that’s the whole idea – to bring the outdoors in and the indoors out.”

Bringing the “outdoors in” was readily accomplished by specifying *Solarban*® 70 glass, which has visible light transmittance (VLT) of 64 percent and a solar heat gain coefficient (SHGC) of 0.27. The resulting light to solar gain (LSG) ratio of 2.37 is among the highest in the architectural glass

industry. “We have specified *Solarban*® 70 glass in the past, and for this project it met our design requirements for both visibility and heat gain,” added Knox. “We are pleased with its performance to date.”

The school’s design takes advantage of direct and diffused daylight in the classrooms, break-out areas and stair towers. Classroom ceilings are sloped to optimize penetration of natural light entering through light louvers. Lighting studies helped provide glare-free teaching walls. The combined effect of all these green building strategies is reflected in the MPES’s utility bills, which are 29 percent lower than an adjacent elementary school constructed nine years earlier.

The new building quickly expanded dialogue about sustainability issues within the school and community. MPES created the first green cleaning program, first recycling program, and first meadow landscape in the municipality.

The many environmental lessons are reinforced by a comprehensive signage program offering teachable moments that highlight green building facts, demystify sustainable building systems and describe flora and fauna easily visible in the adjacent woodlands.

“Our common goals are achieving educational and architectural excellence,” said Bob Moje, principal, VMDO Architects. “The innovative design for Manassas Park encourages students to become future environmental stewards.”

The Manassas Park Elementary School was the first LEED® certified building in Manassas and was recognized by American Institute of America’s (AIA) Committee on the Environment (COTE) as one of the country’s top green building projects in 2009.

To learn more about *Solarban*® 70 glass and other high-performance glass products by Vitro Glass, visit [vitroglazings.com](http://vitroglazings.com) or call 1-855-VTRO-GLS (887-6457).