

Willow Creek Elementary School

Fleetwood, Pennsylvania

“Precast is built to last. The owners toured the precast producer’s plant and another precast school while it was under construction, and were satisfied they were getting better value with precast insulated wall panels.”



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Justin H. Istenes
Project Architect
AEM Architects, Inc.



The two-story, 108,000 sq. ft. Willow Creek Elementary School was built in response to increased enrollments at the elementary school level. The school opened for the 2009-2010 academic year, and features 44 classrooms, a cafeteria, gymnasium, library, computer labs, art and music classrooms for an estimated 700 students.

Three inches of rigid extruded polystyrene (XPS) foam sandwiched between the 3” exterior wythe and 4” interior wythe provide a composite R-value of 16. The wythes are connected by low thermal conductivity shear trusses. The exterior loadbearing precast walls are fully structurally composite, meaning that the interior and exterior wythes act together to resist gravity, lateral and seismic forces. The design enabled the walls to be thinner than other systems, preserving usable floor space for occupants. The precast facade was panelized to 14’ widths to minimize the number of joints and to optimize shipping efficiency.

Interior walls are also structural precast which allowed the project to flow more smoothly during erection rather than having steel and block make up the structure on the building’s interior. Conduit for exterior lighting and fixtures was cast into the interior wythe of the panels for aesthetics and durability over time. In addition to the precast facade, floors are precast slab on grade and Hollowcore plank on the second floor.

“With precast, everyone was forced to think about what they’re doing,” says Istenes. “On block projects contractors often will rush in before everyone has put their heads together, then they’re working on top of each other. This project was efficient and organized. Once the panels were in place we had little masonry work.” Architect Justin Istenes notes that the project timeframe with its late fall and winter construction schedule would have been a challenge with block and brick.

The facade is broken up by buff-pigmented insulated precast wall stair towers and accents on the library, large group instruction and office areas. Cut stone-like reveals on the panel faces, 22” on center vertically and horizontally, bring a classic element that creates contrast while conveying substance. The finish is a light sandblast.

“R-value isn’t a perfect indication of energy efficiency because of thermal bridging. These concrete mass walls provide continuous insulation because the wythe connectors minimize potential energy loss.”

“Traditional [building] methods require refreshing sooner. Voids and cracks of traditional block and brick make it less efficient over time.”

Justin H. Istenes



Architect: AEM Architects, Inc.

Engineer: Multani Associates

Contractor: Wohlsen Construction