

Progressive New School Protected by Innovative Waterproofing Technology

A Case Study

CARLISLE COATINGS & WATERPROOFING INCORPORATED



The Davis Street Arts Magnet School of New Haven, Connecticut offers students a unique experience that sets it apart from any school in the area. It is a “magnet school,” an interdistrict educational institution that focuses on providing specialized curricula and instruction. In the Davis Street School’s case, the curriculum focuses heavily on the liberal arts. However, like most of the buildings on Davis Street, by 2009 the 91-year-old brick building was falling apart. With \$45 million of stimulus money budgeted for the project, the school district had the room to be as creative as its students when designing the new school’s details.

A bit of that creativity rubbed off on the construction manager, A. Prete Construction Company of New Haven. The construction management, design-build and general contracting firm, which has been operating in Connecticut for more than a century, was no stranger to school construction – but the Davis Street structure was no average school. After demolition and extensive remediation, a new Energy Star-qualified 77,000 square foot structure (designed by local architect firm BL Companies) was to be built, featuring a performance theater, dance studio, art rooms, and media center – all in addition to the classrooms and cafeteria of a typical school. While the old structure only had room for grades K – 5, the new school would allow for students from Pre-K up to grade 8.

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Because the project was new construction, A. Prete Construction Company could ensure that quality products and quality installation were used literally from the ground up. Advanced Caulking was chosen to complete the below-grade waterproofing and they knew that Carlisle Coatings & Waterproofing, Incorporated (CCW) had recently developed a unique self-adhering blind-side waterproofing product called MiraPLY™.

CCW's MiraPLY, a self-adhering, blindside waterproofing membrane differs from traditional blindside waterproofing products because it combines two proven waterproofing technologies for superior performance and longevity: thermoplastic polyolefin (TPO) and butyl alloy. The fully adhered TPO composite is flexible, resistant to ultraviolet exposure, elastomeric, and has factory-applied tape for lap areas – the only product on the market that combines all these features. The outer face of MiraPLY is covered in an extremely tacky butyl alloy adhesive which bonds with the placed concrete to form the waterproofing layer.

The installation process was rather straightforward. A layer of extruded polystyrene insulation was applied over a crushed stone substrate. Sheets of MiraPLY-H, the product designed and manufactured specifically for horizontal installations, were rolled out beginning in the corner of the building. All overlapping seams were

bonded with Carlisle's Factory Applied Tape (FAT™) technology after the application of CCW-702LV, low-VOC adhesive. Hand rollers were used to ensure that the bonds were watertight. Once the liner was removed from the MiraPLY, the crew placed rebar over spacers and installed the concrete.

Since MiraPLY is manufactured using TPO, Advanced Caulking experienced greater flexibility in the critical areas that required detailing thus reducing the chance of water intrusion. Their 10 years of experience with and confidence in CCW products was evident as they used another reliable CCW waterproofing product, Barriseal™-S, to seal the side walls. This spray-applied liquid dries to form a flexible, monolithic membrane and serves as an air, vapor and water barrier.

As the school construction nears completion, students and teachers have plenty to look forward to. Although the new building will accommodate more students, the average class size will be only 22 students, affording each student individual attention from teachers. Thanks to CCW's waterproofing products used throughout the building, students and teachers will be able to thrive in the new creative environment, instead of worrying about water infiltration. Beginning in January, the theme-based instruction will take place in a state-of-the-art facility it deserves.



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