Flex FB Stops School Roof Leaks Cold

Cold-applied system answers demanding criteria for badly needed reroofing job.

Stained ceiling tiles and an array of well used buckets for collecting leaks are telling signs of a roof sorely in need of replacement. That was the case at three school buildings in the Athens Area School District in northern Pennsylvania.

Numerous leaks had maintenance personnel constantly scrambling with temporary patches on old roofs at the Harriet Child Elementary School, S.R.U. Secondary School, and Harlan Rowe Junior High School buildings. As everyone knows, however, finding leaks on a flat roof is difficult if not impossible since leaks migrate horizontally before drips appear inside the structure. After years of coping, the time for a new roof had definitely come.

Tom Salpino, Athens Area School District Superintendent, called on the Quad 3 Group, Wilkes Barre, PA, the architectural firm already responsible for the school district's Master Plan. Sam Scarantino, A.I.A., of Quad 3 Group, was asked to lead the reroofing project on an expedited basis because of the acute need.

School administrators had two specific requests: No flames, to avoid fire risk, and no odors, to keep neighborhood relations on a positive note.

The old problem roofs had well exceeded their expected life cycle. Core sections revealed a range of different roof systems on the various buildings, most of which were badly deteriorated. Some roof sections were gravel surfaced coal tar BUR (built up roof) over fiberglass insulation on a deck of form board with poured gypsum. Some sections were EPDM (single ply rubber material) adhered to foam insulation board with gravel ballast applied. In addition, inspection revealed that most of the old insulation would require replacement. Ponding water was also a problem because of insufficient slope on many sections.

"We looked at a number of roofing systems for the Athens schools," Scarantino said. "We selected the Flex system because the DuPont Elvaloy® ingredient makes it compatible with bitumen based products, and also helps the material remain workable for a long period of time. The material met all of our criteria, including the ability to use cold application techniques to avoid the use of flames and strong odors during application."

"Every roof is important," Scarantino remarked, "but with schools you are dealing with a high profile public facility. We look for proven systems, quality materials, experience of the manufacturer, and the expertise of the people we work with."

Quad 3 Group asked Dave Fredericks, technical sales representative with JRS Company, to provide technical information on the single ply Flex Roofing System. "The plan was broad in scope because of the wide range of existing roof systems we found. The Flex System allows for varied solutions in this type of situation," Fredericks said.

On sections where ponding water had been a problem, tapered polyisocyanurate roof insulation and a fiberglass recovery board were adhered to the deck utilizing a special two-component low rise polyurethane foam adhesive. Customized crickets (roof inclines built of insulation panels) were constructed in crucial areas to create a slope for positive drainage.

Flex FB (fleece backed) Elvaloy® Membrane was installed with Flex Substrate Adhesive over the roof insulation system. Wall flashings and other details were completed with Flex MF/R Reinforced Elvaloy® Flashing Membrane installed with Flex Flashing Adhesive.

Finger Lakes Roofing, Fishers, NY, was the roofing contractor. Finger Lakes president, Ken Kotwas, had used other PVC-based roofing products, but was especially impressed with the Flex system. "Flex is very user friendly, which helped us work at an efficient pace," he said. "It's easier to apply than similar systems we've used. The Elvaloy® ingredient gives it a slightly lower melting point for hot air welding. We welded seams at 12 to 15 feet per minute, which is impressive for this type of material. The welds were consistently top quality. Plus, we feel the Flex system has superior perimeter edge details that will help prevent future problems."

Flex Technical Representatives provided project start up assistance, on-site inspections, and final inspection services for warranty purposes. John Doyle, General Manager at Flex, explains other advantages the system provides. "Experience proves that schools can expect to save significantly on air conditioning costs due to the reflective surface, especially in warmer climates. For example, in hot weather a Flex roof can reduce the roof temperature by up to 100°F compared to a black asphalt roof. Depending on climate, air conditioning cost savings are anywhere from 10% to 50%. In urban areas reflective roofing like Flex helps offset the 'heat island' effect. Flex is an environmentally friendly roofing system, which is why we are part of the EPA Energy Star Partner program."

Teamwork helped the project move forward. "The JRS Company and Flex answered all our questions during the planning stage. And the roofing contractor did a tremendous job," Scarantino said.

Everyone involved in the project was pleased. "The job went very smoothly," reports Kotwas. "This is one of the finest applications we've ever done. It's picture perfect."

Fredericks appreciates the overall look as well as the functionality of the new roof. "This is a beautiful roof. It's clean, and the application was top quality in every detail. It's really a showcase project."

Superintendent Salpino agrees. "We owe it to the students to provide a reliable roof for the next couple of decades. We are using Flex for other roofing projects in our district because we think it's state of the art, one of the best roofing materials you can find today. We like its simplicity and how easily it can be repaired. And we don't have to worry about ballast anymore. The reflective roof will help reduce our energy consumption, which is a good demonstration of environmental responsibility to the community. We simply cannot imagine a better roofing system."

Total coverage on these three Athens Area School District campuses is 166,900 square feet.
