Project Profile

Project
Smoky Row Elementary School
Carmel, Indiana

Owner
Carmel Clay Schools

Roofing Consultant
Roof Tech Inc.
Merrillville, Indiana

Roofing Contractor
Midland Engineering Company, Inc.
South Bend, Indiana

Roofing System
Décor Roof System, using 60 mil Sarnafil® G410 feltback membrane in custom pewter grey color

Project Size
93,500 square feet

Completed
September 2007

Décor Roof System a Star Performer at Smoky Row Elementary School

In most school systems, poor performance results in failure. The Smoky Row Elementary School in Carmel, IN, discovered this also applies to roofing systems, as they witnessed the failure of the metal roof that was installed on the building in 1992. "The metal roof was an ongoing irritation to teachers," explained Ron Farrand, Jr., director of facilities and transportation for Carmel Clay Schools. "There were leaks in the classrooms, and rain and wind would come in and damage school materials."

The school district knew that it would have to do its homework in order to ensure the next roofing system on the building would be a star performer, so it called on Roof Tech Inc. of Merrillville, IN to research and recommend the best roofing system for their needs.

Michael H. Cardwell, RRO, RRC and president of Roof Tech, agreed the original roof was not making the grade. "It was not uncommon for the school to have 25 to 30 leaks at the same time," he remarked. Cardwell's assignment was to find a roofing system that would not leak, allow an upgrade to the roof's insulation, meet external fire ratings, and resist wind uplift. Roof Tech hired Mays Consulting and Evaluation Services of Delaware, OH, to perform engineering calculations, and Moisture Management of Fishers, IN to provide architectural input and drawings for the project.

Another equally important consideration was finding a roof system that could handle the different configurations of the roof and still be aesthetically pleasing. "The basic roof design was a two-way gable interrupted by pods covered by two-way gables running in the opposite direction," Cardwell explained. "There was also a barrel roof over the multi-purpose room."

In addition, the outside perimeter included gutters at the eaves and a short parapet wall at the gable ends. The gutters created a design challenge because they were attached to a Dryvit clad wall that extended about seven inches above the low point of the deck. "The wall and gutter would either have to be lowered — a huge and expensive task — or an alternative method developed to allow drainage to the gutters," Cardwell stated.

The school considered a single-ply or modified bitumen system, but that would

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drastically alter the look of the school. Installing plywood and shingles was another option, until it was determined that the building wouldn't be able to support the additional weight. And a new metal roof was out of the question, since the school had been so unhappy with the original metal roof.

Fortunately, Cardwell knew of a roofing system that would meet all the school's criteria: The Sika Sarnafil Décor Roof System, which utilizes Sika Sarnafil's time-tested vinyl membrane, and is the only roofing system of this type that includes warranty coverage for the system's hot-air welded ribs that give the roof the metal appearance.

"We had a similar situation recently with a client that wanted to replace a metal roof without changing the look of the roof, and we recommended the Décor Roof System," Cardwell stated. "In addition to giving the appearance of a metal roof, the Décor Roof System's membrane is very flexible, making it easier to do flashing details and in this case, cover the many elevation changes, valleys and roof configurations. I also like that it has hot-air welded seams, which make the membrane watertight."

Another advantage to the Décor Roof System was that Sika Sarnafil could custom color the membrane to match a newer portion of the metal roof that was not going to be replaced. "The school was insistent that the new roof mimic the color of the remaining existing grey metal roof, and I was quite impressed with how well Sika Sarnafil matched the color," Cardwell said.

A Timed Test

Steve Unrue, project manager at Midland Engineering Company, Inc. of South Bend, IN said the biggest challenge in installing the new roof was dealing with Smoky Row Elementary School's time constraints. "We wanted to get as much done as we could during the summer while the students were out of school," he explained. "Fortunately, we had experience with the Décor Roof System and find it easy to work with. It also goes down much faster than a standing seam roof."

The flexibility inherent in the Décor Roof System made the job of Midland Engineering, the roofing contractor, easier when faced with the many flashing details, elevation changes, valleys and roof configurations at the Smoky Row School.

Installation included removal of the metal roof and purlins, followed by installation of two layers of Sarnatherm isocyanurate insulation, which was topped with ¼ inch of gypsum roof board. The Décor system was then installed.

The height difference at the gutters was addressed by changing the slope at the bottom eight feet of the rafter length with a layer of tapered insulation between the two other layers of insulation. A sheet of the custom-color Sika Sarnafil membrane was also installed on two leaking Dryvit-covered knee walls, thus making them watertight.

"Midland Engineering did a remarkable job working under the compressed schedule, especially since they were doing a lot of metal work with gutters, downspouts and wall caps," Cardwell stated. "They also did a great job of laying out the seams."

"For the complexity of the job it went very smoothly," Unrue said. "Everyone worked very well together and the school was very accommodating. And Mike Cardwell was great — he's one of the best consultants we've ever worked with."

A High Performing Roof

Today the Décor roof is garnering accolades. "The Décor system is the best on the market for emulating a metal roof," Cardwell said. "In many ways it is a better option than metal because it is easier to keep watertight." Cardwell added that he has a personal reason that he is happy the roof is performing well — his grandson is a student at the school.

"The appearance of the roof is very good and we've had no problems with it," Farrand said. "In fact, I have another school with a metal roof and when it is time to replace that roof I'm definitely going to consider using the Décor Roof System." Once again, the Décor Roof System earns high honors by being a proven performer.

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