Overcoming a Poor Design with a Metal Retrofit

Luling Independent School District | Luling, TX

EDUCATION

CHALLENGE

As with many new construction projects, the original metal standing seam roof on the Luling High School, in the Luling Independent School District of Texas, was given short window during the building's original construction in 1987. The roof's design includes many valleys, ridges, and hips with internal gutters that proved inadequate to accommodate drainage. As a result of poor drainage and design, the building was never completely leak-free during the original roof's 23-year life cycle. Things came to a head in 2008, during an especially heavy rainfall that cost the district $40,000 in damages and clean up. For a solution that would resolve the design flaws of the original assembly, the district turned to Sam Heffernan, locally based representative of high-performance roofing materials manufacturer, The Garland Company, Inc.

SOLUTION

After a thorough inspection, Heffernan recommended retrofitting with the R-Mer® Lite II insulated steel roofing system. He explains, "The sealed seam configuration of the R-Mer Lite II assembly allows for more waterproofing at crucial flashing junctures, and allowed us to fill the internal gutters with insulation before roofing over them. In the roof areas where the slope had been inadequate, the R-Mer Lite II system made it inexpensive to add tapered insulation to build up slope. The original design asked too much of a standing seam roof. There was no way to properly waterproof the internal gutters and valleys. With this retrofit solution, that roof should be trouble free for 30 years or longer."

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> **Pat Sullivan**
> Engineer
> QS Tech LLP

Since metal retrofits require a thorough evaluation by a structural engineer, the district requested the services of professional engineer Pat Sullivan of QS Tech LLP to calculate the additional weight to the underlying system. Sullivan explains, "Since R-Mer Lite II does not require a framing system, and the overall system weight is less than one pound per square foot installed, the retrofit proved to be a perfect solution for this difficult design." Heffernan recommended that the company's stucco-embossed, extra-strength R-Mer Wall Pan be installed around the building's four-foot fascia, with custom-engineered gutters and downspouts made of matching, pre-painted R-Mer metal fascia to complete the project.

In addition to the energy saving benefits of the added insulation, the roof comes with a highly reflective ENERGY STAR®* qualified coating system. Says Sullivan, "The white surface combined with the added insulation can save the owner up to $50,000 in energy costs annually…It's very hot in Texas. In 2009 alone, we had 65 days in a row over 100˚F (37.7˚C)."

Contractor for the project, Mark Rusch of Tri-Lam Roofing and Waterproofing, has installed more squares of R-Mer Lite than any other contractor in the nation. He reports, "It's a clean, light system that is easy and safe to work with. It goes down like a metal single ply, and is easy to cut, making it ideal of a job like this one where there are lots of angles, variations, and levels."

This was the first major roofing project overseen by the high school's business manager, Stephanie Timms, who comments, "Luling ISD is very comfortable with Garland. Almost all our campus buildings now have Garland roofs. We've had the same rep since the mid 1980's, and our school board has found Sam to be a very stable trustworthy partner."

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Project:	Luling Independent School District
Location:	Luling, TX
Garland Rep:	Sam Heffernan
Contractor:	Tri-Lam Roofing and Waterproofing
Materials:	R-Mer Lite® II

since 1895

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