Design-Build Solutions, Inc.®
DBS
A Subsidiary of Garland Industries

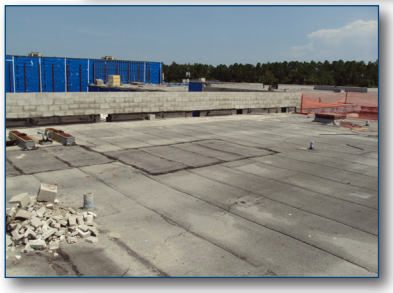
Success Story

Multi-Trade Metal Retrofit
Flagler County Public Schools, FL

Converting Flat Roof to Metal for Lasting Performance

The Challenge

When Flagler County Schools embarked on a multi-million dollar renovation of its Buddy Taylor Middle School, the original plan called for a new flat roof to replace the existing one. When a local representative of The Garland Company, Inc., suggested a metal retrofit to optimize waterproofing performance, district officials decided to investigate this alternative approach. After visiting similar retrofit projects, Flagler County Schools' administrators suggested that Design-Build Solutions, Inc. (DBS), the turnkey construction arm of Garland, submit a preliminary budget and design.



The Solution

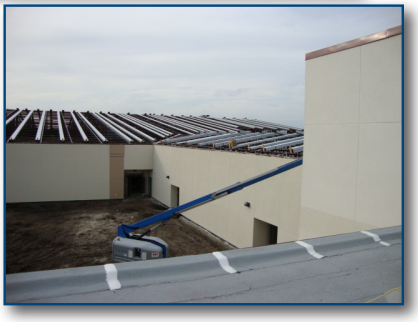
The recommended approach for the 141,000 square foot facility would involve multiple trades, including masonry, carpentry, structural steel, roofing, electrical, and HVAC.

PRE-CONSTRUCTION

The Garland/DBS team made multiple site visits to the middle school, enlisting the efforts of industry-leading consultants and engineers to comprehensively assess facility conditions. A formal proposal, including conceptual drawings and a Guaranteed Maximum Price was then submitted, and a contract to design and install the retrofit metal roofing system was signed. The roofing specification called for Garland's high-performance R-Mer® Span, 22-gauge 16-inch standing seam steel roofing in Colonial Red. The process called for DBS to handle the roofing modification in coordination with Elkins Constructors, the general contractor responsible for both exterior and interior project renovations. Bonding and insurance were secured and a build schedule submitted to Flagler County Schools.

CONSTRUCTION

The construction phase of this project presented several unusual requirements that were expertly resolved by the Garland/DBS team. Prior to the metal retrofit, an infrared scan was performed, identifying approximately 14,000 sq. ft. of wet insulation, which was replaced with a 3-inch poly-ISO fill, then capped with a torch-applied sheet.



One of the biggest challenges was draining the existing roof while the new roof was being installed. The team's solution was to create scuppers in the new masonry wall and permanently flash them, allowing for positive drainage throughout the project. The scuppers remained in place through project completion.

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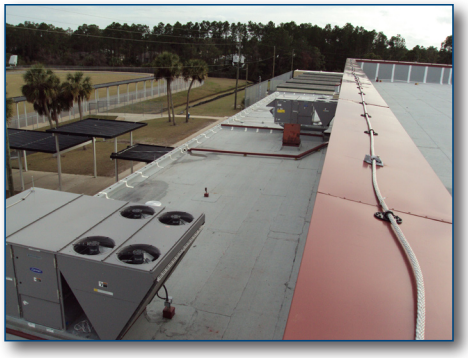


Interestingly, the complexity of the roof design created multiple areas requiring unique and complicated detailing work. According to DBS operations manager, Jamin Niederhofer, “Many of the standard Garland details were meticulously modified to ensure the water-tight integrity of the entire roof system.”

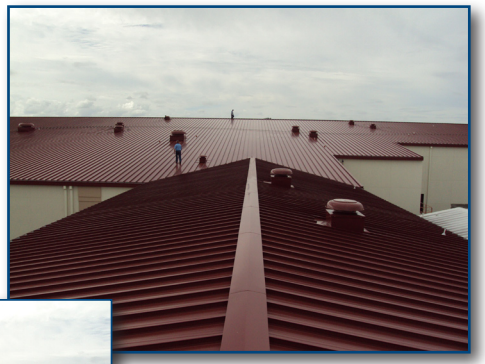
After the project was underway, the Garland/DBS team was notified that the customer had purchased a new HVAC system for the gym portion of the project. The $1.2 million HVAC system required installation directly on the roof’s surface, a requirement that was incompatible with the already specified metal roof system. The team then had to reconfigure a solution that would work with this new requirement without adding time or cost to the project. A 2-Ply modified bitumen system was recommended, which allowed the customer to complete the project prior to the students return to school, while netting the district savings in excess of $275,000, which represented over seven percent of its total roofing expenditure.

During construction, the owner asked DBS to work with Elkins to find an aesthetically appropriate solution for the exterior gable walls that had been created to accommodate the structural requirements of the new metal roof. It was determined that a stucco finish would be preferable to the originally specified metal wall panels, and a deduct was applied for this as well.

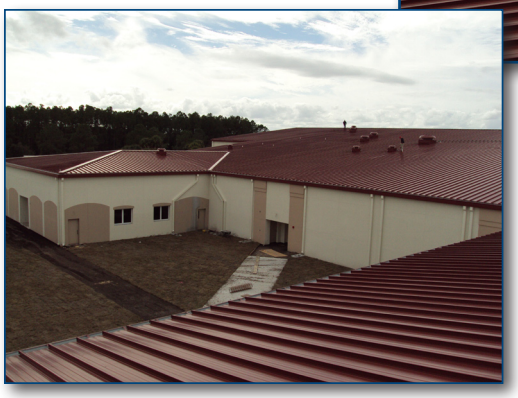
Despite the distractions of new work requirements, heavy rains, and the Christmas holiday, the project was completed within its originally scheduled nine-month period. The punch list was complied with and the building inspector and project architect gave their formal approvals to the completed project in February, 2010.

POST-CONSTRUCTION

From project inception through punch list, this project required over 75 inspections by local building officials. The Garland/DBS team passed every one of them, and was frequently complimented for the craftsmanship of the Saginaw, Texas based roofing installer, J Reynolds & Company, Inc.



The $3.8 million project was completed with the only change orders those requested by the owner. There were no deficiencies and no safety violations, from start to finish. ◆



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