



MILAM ELEMENTARY SCHOOL ROOF REPLACEMENT

The subject facility is a functioning elementary school that was originally constructed in 1960's. The facility consists of four classroom wings and interconnected hallways and a cafetorium/kitchen structure. The existing roof on the classroom wings consisted of asphaltic shingles over plywood sheathing supported by open-web steel bar joists with a 6/12 slope. The roofs over the connecting hallways and the cafetorium/kitchen were low-sloped (1/4-inch per foot) assemblies consisting of gravel surfaced built-up roof membranes over rigid board insulation and fluted steel deck. As part of the renovation program instituted at the school and the budgetary development phase, a standing seam metal panel roof system was selected to be installed on the steep-sloped roof areas to provide not only a long-term serviceable roof system but also an aesthetically enhancing system. A torch-applied modified bitumen roof membrane over insulation board was selected for the low-slope roof areas.

The existing plywood sheathing was found to be severely deteriorated and believed to be the result of the lack of proper ventilation in the attic space located between the deck and the interior ceilings. As part of the roof replacement project, new plywood sheathing was installed and continuous ridge and soffit vents were installed. A self-adhering elastomeric underlayment was installed over the sheathing, clips fastened to the sheathing and continuous length, eave-to-ridge, pre-finished, Kynar 500 standing seam metal panels were secured to the clips. The BUR roof membrane was removed down to the steel deck, polyisocyanurate rigid board insulation loose-laid over the deck, and a fiberglass base sheet was mechanically attached on top of the insulation board and into the deck and a two-ply, torch-applied modified bitumen roof membrane was fully-adhered to the base color were installed on the purlins. Pre-finished sheet metal flashings, color to match the metal roof panels, were utilized on the low-slope roof.

Special details utilized and installed consisted of a venting-type ridge cap, venting-type details along the eaves and rakes, pre-manufactured curbs (color to match), pre-fabricated boot flashings at penetrations, gutters/downspouts and transitional flashings at the intersections of the steep slope to the low-slope roof areas. A manufacturer's twenty-year watertightness warranty was issued for the SSMR system and a full-system no-dollar-limit 20-year warranty was issued on the modified bitumen roof.

PROJECT TEAM

Owner: Houston Independent School District
Houston, Texas

Consultant: Price Consulting, Inc. (PCI)
Houston, Texas

Contractor: Gulf Star Roofing & Sheet Metal
Houston, Texas

Construction Value: \$233,560

Construction Schedule: October 1999 to January 2001

PCI Services: Development of Scope and Budget
Preparation of Drawings/Specifications
Construction Administration
Quality Assurance Inspection

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