



**Pickett, Kelm & Associates, Inc.**  
Consulting Structural Engineers

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## **Wiley Middle School**

**PROJECT LOCATION:** LEANDER, TEXAS

**PROJECT OWNER:** LEANDER ISD

**ARCHITECT:** FIELDS & ASSOCIATES

**GENERAL CONTRACTOR:** AMERICAN CONSTRUCTORS

**COMPLETED:** 2006

**CONSTRUCTION COST:** \$22,700,000



**PROJECT DESCRIPTION:**

Pickett, Kelm & Associates, Inc. provided structural engineering for this tilt-up award winning two-story, 176,000 square foot middle school facility. The two-story classroom wing encloses 98,600 square feet of floor space for classrooms, laboratories, office space, restrooms and corridors. Approximately 10,500 square feet of mechanical mezzanine was provided above the second floor corridor and computer lab areas. The one-story administration/athletic wing includes 77,400 square feet of office, library, cafeteria, locker room and storage space, and two gymnasiums.



Site-cast, concrete tilt-up load-bearing wall panel construction was used extensively on the project to reduce the costs of exterior wall construction; reduce interior finish costs; eliminate concern about mold, which can occur in conventional stud wall construction; improve energy efficiency; and provide strong, durable wall surfaces. Additionally, the system requires few interior columns. Exterior panels are insulated sandwich-type wall panels with a 3" architectural cast-in brick or concrete facing, 2" of insulation and a structural wall thickness. Interior panels are uninsulated.

Concrete tilt-up wall panels are supported by concrete grade beams and drilled piers, and column loads are supported directly on drilled piers, founded in weathered limestone. First floor construction throughout consists of ground supported slabs.

The standing seam roof at the classroom wing is hipped and gabled. Roof framing consists of metal roof deck supported by a combination of gabled and parallel chord open-web steel bar joists, steel trusses and load-bearing tilt-up concrete wall panels, with steel beams at hips and valleys. The mezzanine floor consists of composite steel deck with concrete topping slabs supported by concrete tilt-up wall panels, with composite steel framing where deck spans exceed 10 feet. Upper floor framing consists of composite steel and concrete decks with composite steel beams and girders supported by a combination of steel columns and concrete tilt-up wall panels.

The roof framing at the administration/athletic wing consists primarily of parallel chord open web steel joists supported by load-bearing tilt-up wall panels, with trusses and steel hip beams at the gymnasium roofs. Gymnasiums use gabled and hipped Tectum decks, but all other areas use flat metal roof decks. At canopies with exposed structure, galvanized steel tubing with bolted connections are utilized. Mechanical mezzanines consist of composite steel and concrete deck supported by a composite steel beams and load-bearing concrete tilt-up wall panels.