Mark Twain Elementary School
Alvin Independent School District
Alvin, TX

Size: 102,000 SF
Cost: $13,800,000
Completed: 2012

PROJECT NARRATIVE

The existing Mark Twain Elementary School was the first elementary school to be built in Alvin ISD. While it served the district well for 47 years, a steadily increasing student population necessitated school growth as well. During Bond Planning it was determined a new Mark Twain Elementary School replacing the original building was the best strategy to increase the capacity from the current 600 students, to the necessary 800 students.

This new elementary school steps into uncharted design territory for the district as their first two story elementary school. This project ensures a smaller footprint, translating into less up front land costs, as well as lower roof expenditures for the lifetime of the building. Additionally, a two story design permits the majority of classrooms to have exterior windows, providing natural light and exterior views. This coupled with tubular skylights makes natural day-lighting a viable lighting solution. Geothermal ground source heat pumps will also serve to more efficiently heat and cool the building.

Another key element in the design is visible in the centrally located library. The library spans the full height of the building plus additional clerestory windows. Oriented along the N/S axis, clear glazing creates the exterior boundaries of the library. This transparency provides ample natural light and establishes a strong visual connection between the interior and exterior environments. By utilizing an open concept, the library’s interior boundaries are defined through subtle ceiling height and material changes; emphasizing the importance of the relationship with the school as a whole.

ENERGY USE

Annual purchased energy use (based on utility bills) 25.5kBTU/sf/yr
Actual Carbon Footprint 8.9lbs CO²/sf

57% energy use reduction compared to ASHRAE 2011 base model (57kBTU)
**DAYLIGHTING**
- tubular skylights
- exterior shading devices
- low-e coating
- self-adjusting classroom lighting

**WATER**
- low flow plumbing fixtures
- bio swales for parking run-off
- adapted plants and native species

**HVAC**
- geothermal for Admin suite
- energy recovery and Co2 monitoring
- energy budget and benchmarking
- split HVAC systems for community used space
TEAM

Architectural Design - SHW Group, now Stantec
Contractor - Gamma Construction Company
MEP - CMTA
Geothermal - CMTA
Structural - SHW Group, now Stantec
Acoustics - HFP Acoustical Consulting
Civil - Brooks and Sparks
Landscape - KGA/Deforest