

## PROJECT PROFILE

City of Tucson  
Fire Central  
Tucson, Arizona



“We want to work with reliable people who do what they say they are going to do and do it well. I’m not a structural engineer. I count on these guys knowing what to do.” — Paul Mickelberg, WSM Architects

Architect:  
WSM Architects

Contractor:  
Sundt

Structural Engineer:  
Schneider Structural  
Engineers

### CITY OF TUCSON FIRE CENTRAL

The City of Tucson’s \$38.8 million Fire Central Project offered structural engineering challenges from the ground up. The downtown site is located close to the Santa Cruz wash with shifting sandy soil and very near a high-pressure waste line. Our engineers used drilled piers and slipform caissons to stabilize the ground so it would support two below-grade parking garages and a two-story 66,000-square-foot fire station with a 16-bed dormitory, 6 apparatus bays, administrative offices and a museum for fire department equipment, including trucks.

### FIRE STATION OFFERED CHALLENGES FROM GROUND UP

- Innovative use of materials and systems helped achieve a LEED® Gold certification for this project.
- Excavating the narrow building site was a structural challenge. We used a system of H-piles placed at the limits of construction and temporary shotcrete as shoring for the excavation. This enabled the contractor to work within the site limitations and still stage the equipment and materials needed for construction.
- One of the below-grade garages was designed to have fire engines parked on display at the finish grade. This required that both garages be constructed of concrete to handle that weight load.
- Above ground, we used steel transfer beams in the apparatus bays to maximize space and minimize the number of interior columns.
- We used architecturally exposed structural steel for the unique bell tower and observation patio, which required a higher level of fabrication and detailing. This area displays the city’s historic “five-mile” bell cast in the 1880s. This bell tolled to alert volunteers when there was a fire. It could be heard five miles away.
- This station houses the fire department’s history museum, which required numerous art niches to display everything from axes, helmets, picks and uniforms to a 1909 horse-drawn Nott steamer and a restored 1929 Ahrens Fox fire truck.
- The overall structural system was a mix of steel, masonry and concrete.



“Technically they’re very professional. We’ve discovered unique structural solutions because of their expertise and depth of knowledge.”

— Paul Mickelberg, WSM Architects