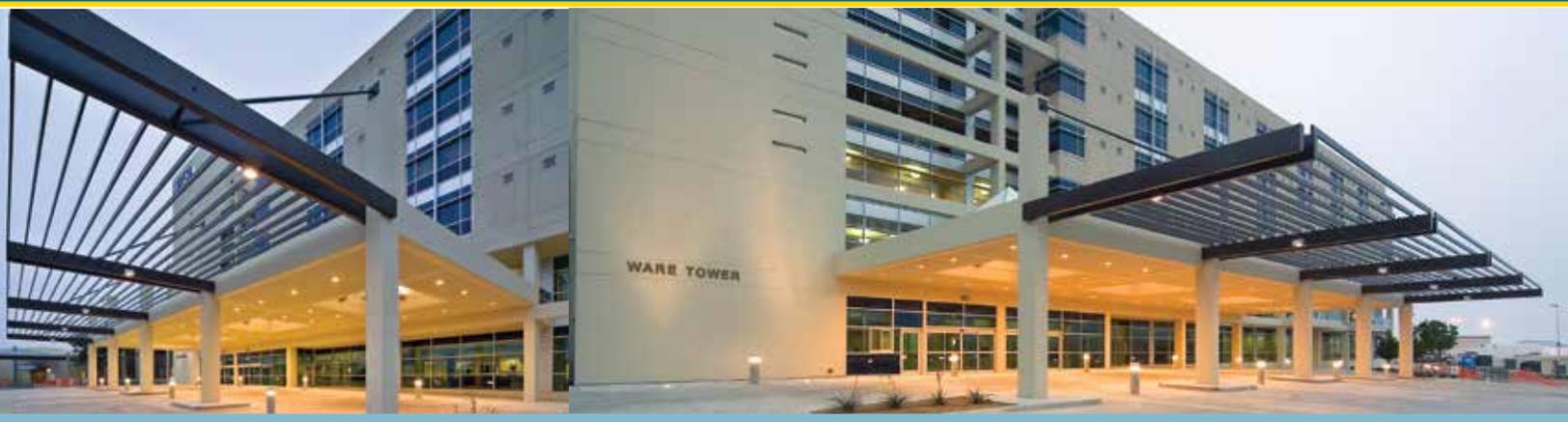


# Baptist St. Anthony's (BSA) Hospital Tower Addition

Amarillo, TX



## Team

### Owner:

Baptist St. Anthony Hospital  
Amarillo, TX

### Architect:

Dekker/Perich/Sabatini, Albuquerque, NM

### Structural Engineer:

Dekker/Perich/Sabatini, Albuquerque, NM

### General Contractor:

Page & Associates Contractors

### Reinforcing Bar Fabricator:

CMC Construction Services

### Total Project Cost:

\$46 million

### Total Project Size:

180,000 sq ft (6-stories)

### Photography:

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## STRUCTURAL FRAMING SYSTEM

Providing smooth circulation flow between structures and planning for the future were two key goals for administrators at Baptist St. Anthony's (BSA) Hospital when they added a six-story cast-in-place concrete tower alongside a structural steel tower. The addition was designed to accommodate two later stories while providing access via a six-level pedestrian bridge.

The tower's façade features exposed cast-in-place shear walls, precast concrete wall panels, and architectural curtain wall to create a dynamic, contemporary image. Perimeter edge beams support the exterior façade and provide additional structural integrity.

The tower's design is highlighted by an entry canopy with pyramidal skylights, which supports a trellis for additional shading. Exoskeleton framing members help express the structure at the front corners of the building, while an interior concrete staircase from the lobby to the second-floor cafeteria serves as a focal point, with a water feature below.

## UNIQUE DESIGN FEATURES

A flat-plate concrete floor system aided the requirement for low floor-to-floor heights, which were needed to match the existing hospital tower's levels. It also aided placement of columns where needed, rather than on a uniform basis, which was required because the building had a trapezoidal shape to conform to the site. Floor vibration also was a major concern due to the highly sensitive equipment.

The tower's structural gravity system consists of a 10-inch flat-plate slab with conventional reinforcement, supported by square, rectangular, and round columns. Lateral forces are resisted by cast-in-place concrete shear wall tubes enclosing three stair and two elevator shafts. The tubes behave as single cantilevered elements, reducing the total quantity of walls needed and alleviating boundary-zone reinforcing requirements.

## REASONS FOR CHOOSING REINFORCED CONCRETE

The tower's trapezoidal shape required a mat of top and bottom reinforcing be placed in each direction, establishing a baseline moment capacity. Each floor plate then was modeled with a finite element-analysis program to determine regions where the moment demand exceeded capacity, so supplemental reinforcement requirements could be provided as needed. This approach simplified the framing plans, making it easier for the contractor to fabricate and install the supplementary reinforcing steel.

***The reinforced concrete floor plate aided column placement throughout the building's trapezoidal shape.***