



The Payne County Jail and Courthouse renovation project has been recognized by the Associated Builders and Contractors of Oklahoma for its innovative use of pre-cast concrete panels. The Payne County Board of Commissioners is shown with the award. Pictured: Project architect Bill Knowles, Commissioner Bill Deering, Commissioner Gloria Hesser, Commissioner Jim Arthur.

Journal photo by Michelle Charles

## Payne County Jail receives construction award

The Payne County Jail won an Excellence in Construction award at the Associated Builders and Contractors of Oklahoma banquet, held October 15.

Architect Bill Knowles, who designed the jail, said the project was recognized for its use of innovative materials in a high-rise building.

The building had to be five stories tall to accommodate 288 beds in the footprint allowed.

Knowles said the jail was built with about 1,000 pre-cast concrete panels, which were set in place with a huge crane, saving on framing and scaffolding costs.

Each panel was up to 12 feet wide by 35 feet tall and weighed as much as 40,000 pounds.

Thin slices of fired-clay brick were set directly into the panels, saving time and eliminating the need for brick masons, which can be difficult to find, Knowles said.

Some walls included insulated panels covered with several inches of concrete on each side.

Knowles said the thickness and strength of pre-cast concrete works well for jails.

The concrete in pre-cast wall panels is twice as strong as the concrete in an average driveway because it is made with more cement and goes through a steam curing process, he said.

The biggest challenge was designing for a high-rise structure that would meet building code requirements for seismic activity, he said.

Building codes across the country now weigh potential earthquake damage more heavily than damage from high winds, Knowles said.

Seismic risk is determined by taking a soil sample from 40 feet below the surface.

The weight of the building also affected its foundation design.

The building stands on concrete piers dug 30 to 35 feet deep to sit on a layer of limestone.

"It's one of the safest buildings in town," he said.

Knowles said designing the new jail to blend with the existing courthouse was another challenge.

He found it was easier to get good match for the limestone on existing sections of the courthouse using concrete than with new stone, he said.

Substituting concrete also saved a significant amount of money.

"This was by far the best material for the job," Knowles said.

Remaining courthouse renovations are expected to take six to seven more months to complete.

The total cost of the project is \$18.2 million.

Jail construction cost \$17 million and the remainder is budgeted for remodeling the west end of the courthouse.