

Case study

Bernalillo County Courthouse

Albuquerque, New Mexico



Minimizing construction costs while building a safe, secure, efficient courthouse

Visitors to the Bernalillo County Courthouse enjoy daylit, open spaces and striking views of the Sandia Mountains. They don't see the sophisticated technology that keeps them safe and comfortable – and saves tax dollars – by integrating multiple building functions. The courthouse combines pleasant public areas with secure and efficient workplaces for judicial staff, while isolating both from detainees in the holding areas and jail.

A courthouse is a complex building: It must accommodate daily visitors, judges and their staffs, and people being detained – while keeping those groups separated. And it must operate efficiently to conserve tax dollars. Bernalillo County met those challenges with a new 8-story, 24 courtroom, 272,000-square-foot courthouse, which opened in August of 2001.

To ensure cost-effective construction and long-term building efficiency, the county selected Johnson Controls as a project development partner. Johnson Controls accepted responsibility for integrating the automated HVAC controls, the fire alarm system, the access control and security systems, and the communications infrastructure.

“Early on, Johnson Controls showed us the value of integration at the front end,” said Terry Nighbert, the county's real estate capital improvements project manager. “They were very knowledgeable and they worked with our consulting team for a year and a half before the initial bid.

“Our goal from the beginning was an integrated building management system. Design integration itself gave us a lot of economy. It also helped construction proceed with a minimum of labor scheduling conflicts, change orders and retrofits.”

PROJECT DESIGN TEAM

Design Architect	FMSM Design Group
Construction Architect	Custer Basarich Architects
General Contractor	Bradbury Stamm Construction
Technology Contractor	Johnson Controls, Inc.



Ample daylighting provides a pleasing interior environment.

"Johnson Controls showed us the value of integration at the front end."

TERRY NIGHBERT
REAL ESTATE CAPITAL
IMPROVEMENTS MANAGER
BERNALILLO COUNTY



The central atrium from above.

Security and comfort at an affordable cost

Built with two wings off a central atrium, the courthouse provides large open spaces, daylit from the northeast. Public areas include comfortable gathering places and courtroom waiting areas, decorated with more than \$1 million worth of art. Judicial quarters are card-access-controlled with private hallways, restrooms and coffee bars. Jail cells on the lower level and holding areas between courtrooms are highly secure.

"We have separate traffic patterns for each group," according to Nighbert. "There are separate corridors, elevators and stairways – and separate entrances to the courtrooms. The only place where the three entities meet is in the courtrooms."

Reliable, streamlined communications

The courthouse communication network consists of low-voltage, high-speed copper and fiber optic CAT6 cabling, laid in two-inch spaces beneath raised floors throughout the building. Johnson Controls coordinated network design, programming and connections. Distribution boxes installed in a grid system allow easy to use phone and data hookups. "When there is a need to relocate people, we can move telephones and computers around in hours, not days," says Nighbert.

Working behind lock and key

To meet special security needs for detention areas, the county chose an independent Detention Control System (DCS), controlled by a P2000 security management system. The DCS controls a wide range of security functions, including video cameras and monitors, parking gates, metal detection/x-ray stations (like those at airports), cell lockdown, security turnstiles, and automatic sliding doors. Touchscreen monitors with graphic floor plans are installed at strategic locations throughout the building; cells can be monitored from these stations.

Centralized control

The Metasys® building management system enables electronic monitoring and control of other security functions, plus fire alarms, indoor comfort, and energy conservation, all from a single workstation. Nighbert explains, "We control the building perimeter and interior with just two people – one at the security office and one off-post, roving throughout the property. The labor savings are significant."

Energy savings are also substantial. The Metasys system regulates the variable-air-volume HVAC system and lighting controls. "We know that with this control system we will be spending less per square foot on energy – probably about 25 percent less than in the old courthouse," Nighbert says.

"Through integration we have the ability to regulate both security and building comfort from a single station – one that is simple for our staff to use. We have a safe, comfortable environment at an economical cost. The economies we achieved will benefit the taxpayers of the county well into the future."