



PROJECT AT A GLANCE

Project:

HVAC, lighting, and centralized systems control

Location:

Wichita, Kansas, USA

Property:

42 buildings

Equipment:

- 51 process control units,
- 16 expansion modules,
- 29 micro regulators,
- 4 micro controller interfaces,
- 1,200 control points

City of Wichita

Always mindful of how it spends taxpayer dollars, the City of Wichita seized an opportunity to significantly reduce energy costs by retrofitting HVAC and lighting systems in 42 municipal buildings.

THE CHALLENGE

The facilities staff is responsible for 42 buildings scattered throughout the city. Municipal sites include a 13-story City Hall, a convention center, various maintenance facilities, an art museum, police and fire stations, transit and recreation centers, and a State office building.

City council wanted to implement an effective energy solution to reduce maintenance and operating costs across all municipal sites. Achieving that objective required upgrading aging mechanical and lighting equipment and installing a reliable, centrally controlled building automation system with remote access.

The project entailed retrofitting more than 10,000 fixtures in 42 buildings and adding building controls at 36 of those sites. During the project, all buildings would be occupied. The project also involved coordinating the activities of city personnel, multiple vendors and engineers, and various utility companies.

The city wanted a systems solution with backward and forward compatibility, as well as expandability for the future. So it turned to TAC's Energy Solutions Group and a TAC® Partner, Sandifer Engineering, to help the City achieve its objectives.

CUSTOMER BENEFITS

- Dramatic energy savings
- Centralized and remote system access
- Flexibility to expand systems
- Graphics of floor plans, DDCs, air flow, piping

City of Wichita

THE SOLUTION

Sandifer Engineering partnered with TAC's Energy Solutions group to deliver a comprehensive energy savings solution that included a performance contract showing how the City of Wichita could generate a positive cash flow over a 10-year period.

Achieving the desired results involved replacing a cooling tower and pumps at the City Hall site, implementing a free-cooling retrofit of the convention center's physical plant, and installing new building controls and high-efficiency lighting equipment throughout most of the buildings.

Sandifer retrofitted City Hall with DDCs in Phase 1 of the project. Phase 2 added DDCs to an additional seven buildings and then connected 36 buildings to a centralized system, enabling facilities staff to monitor operations from a single workstation located in City Hall. Remote dial-up access is also available. Some sites, such as the art museum, also maintain local control to assure a proper environment.

New enable/disable zone controls in 29 buildings allow existing thermostats to regulate temperatures and to schedule systems operation after hours. Adding a free-cooling accessory to an existing 800-ton centrifugal chiller maximizes cooling capacity without running the compressor during cooler weather, providing as much as 40 percent of chiller design tonnage.

The hot-deck damper solution optimizes system efficiency by delivering hot air only when and where it is needed. Large AHUs and variable speed drives minimize air movement to condition a building's environment.

THE BOTTOM LINE

The City of Wichita achieved a 14 percent reduction in utility costs, which translates into energy savings of \$306,990 annually.

Systems controlled now include the chiller plant, a free-cooling solution, boilers, pumps, variable speed drives, AHUs, lighting, VAV boxes, and hot deck dampers.

TAC's I/NET™ system enables remote sites to automatically report alarms (e.g., out-of-temperature conditions or equipment failure) to the centralized workstation.

GOVERNMENT PROFILE

For government facilities, a building solution that delivers energy efficiency, comfort and security is critical and necessary. TAC's proven solutions and reliable service provide government officials with a controlled, dependable indoor environment backed by savings that help protect the investment of taxpayers.

TAC has proven experience in working with government agencies to take advantage of building management solutions that maximize energy efficiency and performance. This is all part of Building IT solutions for government facilities – designed for economy, operational efficiency and the flexibility to address future needs.

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