

Chicago Public Schools



CUSTOMER BENEFITS

- Guaranteed savings
- Reduced energy consumption and costs
- Improved comfort levels
- Local and remote system access
- Flexibility to expand

PROJECT AT A GLANCE

Project Type:

Energy Performance Contract

Location:

Chicago, Illinois, USA

Number of Buildings:

1 (20 stories [503,000 sq.ft.])

Projected Annual Savings:

\$1.5 million

Energy Conservation Measures:

- BAS with DDC
- On-site chiller system
- Energy-efficient lighting
- Occupancy sensors
- Insulated double-pane windows



This fiscally responsible school district renovated its central administration building by leveraging a performance contract to pay for improvements with energy savings.

The Challenge

Chicago Public Schools (CPS) serve 435,000 students and operate 600 sites, making this the nation's third largest school district.

Focused on preparing its students for the future, the CPS system has become a national model for urban school reform, as well as fiscal policy. Spending less than 5 percent of its operating budget for administration has earned the district upgraded bond ratings from Moody's and Standard & Poor's, and a certificate of excellence from the Government Finance Officers Association.

By 2007, the CPS Administration Center faced a number of challenges at its 20-story headquarters in downtown Chicago. Rising energy costs and constant maintenance of aging systems led officials to look for a creative solution that would allow CPS to finance much-needed improvements at this site.

Environmental Facts:

Enhanced system performance has had a positive environmental impact that translates into ...

- Releasing 7,500 fewer tons of greenhouse gases and other pollution into the atmosphere annually
- Removing 800 cars from the roads for a year
- Planting 600,000 trees to help restore the ecosystem balance

Eight companies responded to a CPS request for solution proposals that would improve operations, comfort levels and energy efficiency at the Administration Center. After careful review, CPS awarded the \$17.6 million performance contract to Schneider Electric.

A performance contract provides a turnkey solution that incorporates system design, construction and commissioning along with guaranteed energy savings. In the event those savings are not realized, Schneider Electric agrees to pay the difference.



Schneider Electric faced some of the typical challenges for a project like this. For instance, the building was occupied throughout the renovation. Staging equipment and supplies in a busy downtown area required permits to shut down streets and sidewalks at various intervals. Furthermore, other projects for the building's roof and sidewalks were going on at the same time.

The Solution

The former building automation system (BAS) at the CPS Administration Center consisted primarily of pneumatic controls. Schneider Electric replaced this antiquated system with a new BAS and direct digital controls (DDC) to provide greater operational control.

Schneider Electric installed new steam boilers to replace an oversized manual boiler setup. In addition, Schneider Electric designed and installed a dedicated chiller plant that translated into savings from unused capacity and eliminated reliance on the districtwide system. Re-piping the building to make chilled water available closer to where it's needed also increased operating and energy efficiencies.

Renovation of the lighting system involved replacing inefficient T12 lamps and magnetic ballasts with more energy-efficient T8 bulbs and electronic ballasts. A new, state-of-the-art control system connects lighting to the BAS, making it possible to automatically turn lights off at night.

Occupancy sensors save energy throughout the building because the facilities staff can schedule operations differently, bringing in fresh air based on the number of people in the building.

This project also involved replacing all antiquated windows. Newly installed double-hung, double-pane windows save energy and reduce noise levels to provide a more comfortable work environment.

CPS will continue to reap the benefits of improved performance through Schneider Electric's Performance Assurance Support Services (PASS) offering. PASS provides remote monitoring and technical support along with a complete analysis and reporting of energy use, guaranteeing energy savings and project performance after the initial installation.

“Energy performance contracting gives us a tool not only to make the improvements without diverting capital money, but it also allows us to lead by example as we reduce the district’s overall energy usage.”

Joseph Clair
Former Managing Engineer
Chicago Public Schools

The Bottom Line

CPS officials chose Schneider Electric for its expertise, approach to energy savings, creative scope of work, and successful outcomes on similar projects.

District officials anticipate a 50 percent reduction in utility costs and energy use at the Administration Center while improving the building’s operating efficiency.

Employees at the CPS headquarters benefit from a more comfortable work environment. Finally, the property management firm that operates this site expects the improvements to increase the overall building value.

