



PowerLogic™ in Buildings

University of Chicago saves money and justifies funding with PowerLogic system

Application:

- Allocate energy costs to departments or processes
- Measure efficiency, reveal opportunities and verify savings
- Leverage existing infrastructure capacity and avoid over-building
- Reduce peak demand surcharges

PowerLogic system:

PowerLogic ION Enterprise™
PowerLogic ION meters

The University of Chicago has many diverse facilities on its main campus, including medical facilities and specialised buildings for biological and physical sciences. Because energy usage levels vary greatly from department to department, the University's Building Automation Systems (BAS) group needed to find a way to accurately track usage and allocate costs to individual departments.

The University required meticulous electrical system monitoring in order to ensure its world-class research facilities received the reliable, high-quality power needed to guarantee the accuracy of their research. The campus-wide heating system also required accurate and specific monitoring. Consisting of a central plant that distributes steam and a condensate collection system that returns condensate to the central plant, it was essential to minimise the loss of the specially treated water used in the system. The two chilled water plants that form the basis of the campus cooling system also required water recycling and posed difficulties similar to those of the heating system.

The BAS group wanted to track heating, cooling and electricity costs in order to allocate expenses to each department according to their usage. They also needed a system that would capture power quality data for the campus's research facilities and provide department managers with the information they needed to project future budgets. To reduce redundancy and cost, the new system had to share data with existing automation systems.

An ideal solution

The BAS team chose a PowerLogic ION energy management solution from Schneider Electric (formerly Power Measurement). The system currently covers about 40 buildings on campus, each employing a central, high-end PowerLogic ION meter to monitor and aggregate data from field sensors for the various utility systems (electrical, steam, condensate, chilled water). These central meters also act as a communications gateway, sending the aggregated data across the University's existing local area network to the head-end PowerLogic ION Enterprise power management software. Here, the information is combined with data from other sources to provide concise, revenue-accurate usage and billing data through an easy-to-access, easy-to-use web portal.

Meaningful results and reports

The PowerLogic ION system completely supports the BAS group's primary goal, by providing an easy and accurate way to allocate energy costs by department. The system analyses and validates the data it receives, then uses its advanced report generation capabilities to create departmental usage reports that precisely reflect the quantity of each type of utility service that was used. PowerLogic ION Enterprise software provides a breakdown of utility usage per building, per user, per function or per university division, allocating the costs for usage to university divisions, departments or equipment as best suits the specific conditions. PowerLogic ION Enterprise software also provides detailed information about energy usage that was previously unavailable.

Benefits

Each department now carries its own weight for utility usage, allowing the true cost of research and educational facilities to be recognised and planned for in the future, while simultaneously encouraging energy conservation. As users learn the actual cost associated with their utility usage, they become more proactive in carrying out reduction strategies.

Measured efficiency

The PowerLogic ION system provided historical usage data that allowed the BAS group to compare the efficiency of the old and new chilled water systems and proved that an older system was almost 50 percent less efficient than a newer system. This strongly supported the group's original recommendation to retire the older system, evidence that wouldn't have been available without the PowerLogic ION energy management system.

The BAS group was able to effectively audit a recent study done by an energy consultant. After the consultant's recommendations were implemented, the system quickly verified and quantified the savings gained by these measures. The data was used to create a report for upper management that helped to show the benefits of energy-focused initiatives, and will hopefully lead to increased funding for these projects.



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