ARMSTRONG

MORE HEALTHCARE WITH LESS ENERGY

A HEALTHCARE FACILITY INSTALLATION

"The Clifton Center for Medical Breakthroughs", Philadelphia, PA USA

Integrating the Armstrong OPTI-VISOR™ with the Schneider Electric EcoStruxure building automation platform has delivered an annual average plant efficiency of 0.5 kW/ton, for this 300,000 sq. ft. facility.

"The Clifton Center is now the most efficient building on the campus."

Francis Connelly
Asst. Executive Hospital Director

The Armstrong OPTI-VISOR™ interfaces seamlessly with any existing Building Automation System to maximize overall plant efficiency, without disrupting or reconfiguring the existing control system infrastructure. OPTI-VISOR™ harmonizes the existing mechanical equipment, using leading-edge optimization schemes to achieve maximum plant performance.

Background

The Clifton Center for Medical Breakthroughs is the newest medical facility at the University of Pennsylvania Health Systems (UPHS) in Philadelphia, Pennsylvania. The $1.6 billion Clifton Center is a state-of-the-art facility, designed and built to be a **blueprint for the hospital of the future** focusing on patient experience, comfort, and cutting-edge medical care.

The construction process was a multi-year collaborative project that opened to patients on October 30, 2021. An important requirement of the project was the optimization of a 6,250 ton centralized chilled water plant performance to ensure patient comfort, energy savings, and long-term plant efficiency. The Clifton Center project team, approached the industry for assistance and chose Schneider Electric and Armstrong Fluid Technology as control solution partners. Working with the project team, an integrated solution consisting of Schneider Electric's EcoStruxure Building Management platform and Armstrong's OPTI-VISOR™ central plant optimization solution was installed.

EcoStruxure Building Management Solution (BMS) is an integrated platform for monitoring, control, and management of energy, lighting, fire safety, security, and HVAC. It was designed to respond to demands for security, scalability, and efficiency. With an open and secure software integration framework, EcoStruxure allows collaboration across third-party systems to create truly innovative solutions.

OPTI-VISOR™ solution is an ultra-efficient chiller plant control module that interfaces seamlessly with the EcoStruxure BMS to maximize overall plant efficiency without replacing or reconfiguring existing componentry.

By analyzing the data supplied by the Building Automation System (BAS), OPTI-VISOR™ provides operational instructions to the BAS to maximize the overall plant efficiency using leading-edge control algorithms.

The OPTI-VISOR™ instructions harmonize the interplay between building sub-systems and existing HVAC equipment, including chillers, chilled water pumps, condenser water pumps, cooling towers, external environmental conditions, and building cooling load requirements.

Where EcoStruxure provides connectivity and security, Armstrong's OPTI-VISOR™ focuses exclusively on the efficiency and performance of the HVAC system. Linking the two solutions, in a way that drew on the strengths of each, was the crucial decision that pushed HVAC system efficiencies beyond the expectations of anyone involved.

Optimization results post commissioning:

Average Plant Efficiency: 0.5 kW/ton

4-Year Energy Savings to 7,855,428 kWh

4-Year $ Saved to $629,554

Schneider Electric, Armstrong Fluid Technology and Chesapeake Systems, the local Armstrong representative, remain committed to collaborating with the Clifton Center staff. Monthly and quarterly plant performance reviews are conducted on an ongoing basis to ensure the overall operation of the system, and to discuss any plant performance suggestions.

Tech-info

- Design Envelope 4300 Vertical In-Line pumps
- OPTI-VISOR™

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