ARMSTRONG

HVAC UPGRADE DELIVERS BIG SAVINGS

A MIXED COMMERCIAL FACILITY ENERGY UPGRADE

Al Manar Building, Ras al-Khaimah

Following an initial energy audit, Armstrong Fluid Technology implemented an extensive upgrade of HVAC equipment with intelligent controls which provided savings of 46% compared to the old system – saving $17,500 in the first year alone. With Pump Manager in place to track system performance, the savings will continue for the life of the products.

Al Manar Building in Ras al-Khaimah achieves energy and cost savings with Armstrong Fluid Technology's Design Envelope Pumps and IPS Energy Upgrade

Background

Al Manar Building is a combined residential and commercial property located in Ras al-Khaimah, UAE. In a bid to reduce the building's energy consumption and HVAC operating costs, energy service provider Active Sustainable Solutions enlisted the help of Armstrong for an extensive HVAC system upgrade.

An initial energy audit provided insights into the system configuration and revealed a number of inefficiencies. The most significant issue was the oversized and outdated HVAC pumps. This finding wasn't tremendous surprise, as an estimated 75% of pump systems around the world are oversized in specifications - many by more than 20%. While the practice of over-sizing does reduce some elements of risk, it also introduces significant costs – not only in the initial outlays for the equipment, but also in operating costs.Armstrong recommended a sustainable and cost-effective solution to replace the existing 18kW constant speed pumps with 15kW Design Envelope pumps.

Design Envelope solutions use a combination of intelligent variable speed control, and cloud-based Active Performance Management software for energy-efficient operation within a given performance envelope. Because of the accuracy of the data gathered, the pump serves as a highly accurate flow meter, and the flow data collected is used to dynamically adjust equipment operation to match system demand.

Beyond optimizing energy efficiency, Active Performance Management capabilities also help to create safer and more comfortable environments through predictive maintenance. Armstrong's Pump Manager subscription service leverages the embedded intelligence and Wi-Fi capabilities of Design Envelope pumps to send real-time alerts. Early detection of issues prevents escalation to the point of failure or service disruption. Given the secluded location of the Al Manar Building, the automated system is an important aspect of maintaining to occupant comfort.

As a result of Armstrong's involvement in the facility retrofit, the Al Manar building has seen an incredible 46% in energy savings compared to the previously installed system. By saving $17,500 in the first year alone, the building is on track to achieve a return on investment in just 1.5 years - faster than originally projected.

The Pump Manager service has also proved its effectiveness in the case of three major breakdowns in the middle of the night. Rather than having to wait for maintenance to arrive the next day, the notification provided by pump manager provided key information so that the system could be restored to service within minutes. In the event of more serious disruptions, the building also has lifetime access to Armstrong's 360 Service and Support, offering consultation support on everything from performance management and maintenance, right through to further performance optimization.

Tech-info

- Armstrong Design Envelope 4200H 15kW Pumps
- Suction Guides
- Flo-Trex Valves
- Embedded Control Logic
- IE3 High-Efficiency Motors
- IPC Controller, Pump Manager

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