DRIVING ENERGY SAVINGS

A COMMERCIAL FACILITY ENERGY UPGRADE PROJECT

GAC Logistics Park

Upgrading to Design Envelope pumps helped GAC save energy costs of 20,000 AED in the first year. Armstrong's Pump Manager service provides reports and notifications to ensure the pumps are optimized.

Parallel Sensorless Pump Control (PSPC) improves pumping efficiency and reduces the energy costs of a multi-pump installation through optimised load sharing. Pumps are staged on or off based on operating efficiency rather than motor speed. This approach improves efficiency of the entire pump array by up to 30%.

Background

GAC Dubai is a market-leading provider of shipping, logistics and marine services, with more than 50 years of experience across a range of sectors including consumer goods, fashion, humanitarian work and major sporting events.

At the Group's Logistics Park in the Jebel Ali Free Zone in Dubai, the company faced an HVAC challenge. Most HVAC systems were operating at less than 60% capacity for 90% of the time. The facility required an equipment retrofit to optimise efficiency, reduce energy consumption and deliver cost savings.

For the GAC Logistics Park project, Design Envelope pumps were selected primarily for the combination of optimised flow control and connectivity. Design Envelope technology modulates pumps output to match system demand, and pump performance envelopes are mapped for the best pump efficiency, at part load, where variable flow systems operate most often. This ensures a building's hydronic pumping system consumes as little energy as possible.

Armstrong optimisation solutions also enable control over chiller flow requirements and pressure drops across the evaporator, when maximum and minimum flow settings have been programmed. By ensuring Providing the correct flow levels to chillers improves heat transfer and efficiency loading. Armstrong Fluid Technology even went a step further to maximise energy savings by adjusting the pump control curve to account for substantial temperatures variations in the region.

Armstrong Fluid Technology also provides cloud-based performance tracking through a subscription to the Pump Manager service. This service provides remote access to data collected through continuous tracking, which can then be supplied to multiple stakeholders. If any potential issues arise, immediate steps can be taken to prevent the problem escalating. The two events that caused potential issues in the first year were immediately reported by Pump Manager. Both issues were addressed within minutes, without any system downtime. By addressing potential issues early, GAC has benefitted from lower maintenance costs and the highest level of IAQ possible. Overall, the project has resulted in reduced installation costs, higher energy efficiency, lower environmental cost and reduced operating risk. A total of AED 20,000 was saved in the first year of operation, compared to energy use they would have experienced using constant fixed-speed pumps. GAC Dubai also has access to Armstrong's 360 Service and Support to maintain performance throughout the lifecycle of the building.

Tech-info

- 18 kW Design Envelope Pumps with IP66 Intelligent Drive and Pump Manager

Exemplifying their commitment to sustainability, GAC invested in an HVAC upgrade to reduce energy use.

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