



CHILLED WATER PLANT OPTIMISATION

ENERGY PERFORMANCE WITH SMART CONNECTED SYSTEMS

In a world where reducing negative environmental and social impact is at the forefront of many organisations' long-term objectives, finding ways to achieve energy savings for buildings is becoming increasingly important.

Enhancing building performance and implementing energy optimisation are some of the areas forward-thinking businesses are looking to ensure the sustainability of their operations.

Using anywhere from 45% to 60%, heating, ventilation and air-conditioning (HVAC) is the single largest consumer of a commercial building's energy. Of this, at least 40% is consumed by the central chilled water plant.

Instead of trying to gain savings from numerous smaller systems, optimising the central chiller plant allows building owners to achieve the biggest measurable impact.

Optimising complex and dynamic systems requires an intelligent solution that can continuously adapt to a building's varying load and changing weather conditions.

FOUR RULES OF OPTIMISATION

You cannot optimise if you do not measure

Optimise systems not individual components

Optimisation must be automatic and continuous, in real time

Implement effective and routine maintenance, with periodic system tuning

CREATING THE FUTURE OF SMART SOLUTIONS

Through the implementation of a Johnson Controls® Central Plant Optimisation (CPO) system, ITD Group is able to significantly reduce the energy and water consumption of central HVAC plants.

One of the fundamental principles of CPO is to match the actual building load to the Kilowatts of cooling or heating available in the plant. This is done through measuring the total Kilowatts consumed.

CPO monitors every aspect of the chilled water plant including all the usual temperatures, flows, Kwh's and pressures. Using system data, adaptive tuning algorithms intelligently select equipment for operation and performance control reduces energy consumption.

Efficiencies are calculated based on the individual equipment efficiencies, age load, required capacity and rated flow. CPO calculates the coefficient of performance (COP) of each chiller as well as of the plant as a whole. Adjustments are made automatically to ensure optimum operating efficiency.

Running all chillers to maintain a set water temperature is no longer considered good practice.

When incorporated with high-efficiency chillers and variable speed drives, CPO will maintain environmental conditions using the least possible amount of energy.

BENEFITS OF CPO

- Proven savings of between 10% to 30%
- Payback period: 1 -2 years on the total cost of implementation.
- Patented Pattern Recognition Adaptive Control (PRAC) technologies.
- The most efficient chiller plant optimisation software available for large tonnage installations.
- Not manufacturer specific and can be connected to any manufacturer's chillers and equipment.
- BACnet® communication ensures seamless integration with a wide range of equipment.

ITD Group's industry knowledge and experienced understanding of the entire chilled water plant makes us the leading implementer of CPO in Southern Africa. We are unique in our ability to offer clients true chilled water plant optimisation solutions which include remote performance diagnostics, benchmarking and alarm monitoring.

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