SUCCESS STORY

Convenience Store Chain **Strikes Gold** and Saves Some Green

Facility supervisory system saves on energy costs and provides operational insights




Across America convenience stores serve as the mainstay of communities, a place where we go to not only refuel but even get a quick bite to eat and recharge our batteries. Nowhere is this truer than the South, a region known for its warm weather and hospitality. The Golden Pantry convenience store chain in Athens has based its reputation on this charm, serving northeast Georgia for nearly 50 years with now close to 50 stores.

The chain's operations managers know that their continued success will rely on their abilities to preserve their well-earned brand reputation, reduce energy consumption and improve operational efficiencies across all of its stores. So when they were presented with a technology that could simultaneously address these concerns, they were intrigued.

Electronic improvements to mechanical systems

The solution utilized the latest electronic store control technology that could manage the energy consumption of HVAC and refrigeration systems. But before considering a broader implementation, management embarked on a pilot program in one of its stores.

Previously, the Golden Pantry was using the thermostats for HVAC and refrigeration. In fact, there were no electronic controls or smart control devices in any of their facilities. That was all about to change.

Without replacing any of the HVACR equipment, the store optimization team upgraded the HVAC system with new electronic thermostats on a single network. Then, they installed electronic thermostats and refrigeration controllers on the store's four walk-in coolers and freezers. The new thermostats and controls fed into an electronic site supervisor system that monitored energy consumption and provided managers with operational insights.

Enhanced visibility and fault protection

While the goal of the installation was primarily focused on energy reduction and system optimization, store managers quickly discovered the value of the data the supervisory system provided. Just weeks after the installation, it detected a potentially catastrophic refrigeration system fault and sent alerts to store operations.

And when technicians arrived to investigate the error, they discovered a faulty condenser unit. Their quick response allowed them to replace minor parts and fix the issue, thereby preventing two larger, much more costly issues: product loss, and walk-in cooler (equipment) failure.

Precise control optimizes energy savings

With electronic controls in place, store operations were better able to identify high energy-consuming practices and implement new strategies. The first thing they did was establish an HVAC temperature setpoint and lock out any manual changes to thermostats. The setpoint was optimized to maximize energy efficiencies of the existing HVAC system and eliminate unnecessary strain from setting the thermostat too low during peak periods.

Electronic thermostats replaced inefficient mechanical ones in the store's walk-in coolers and freezers. These were then integrated with electronic refrigeration controllers and the new site supervisory system. As a result, store managers were able to exert much tighter control of food storage operations, including:

- Scheduled defrost cycles
- Utilizing case temperatures to assist with defrost on/off
- Two-degree temperature setback from midnight to 4 a.m.

The supervisory control system even notified store managers when walk-in doors were left open. All of this advanced control and visibility gave managers the tools to make full-scale operational changes, not only to reduce energy consumption but to manage the store's environment and improve the overall customer experience.

Early return on investment

The Golden Pantry's management team had hoped to meet their goal of a 36-month payback. But with the system producing 9.6 percent energy savings in its first year, they are now projecting to achieve ROI in only 18 months.

Strategic initiative manager, Robert Griffith, knows that the insights his team has gleaned since installing the system are just the tip of the iceberg. "While energy savings are more than paying for the system cost, the information we're gathering is helping us make important operational improvements now, and plan for equipment upgrades in the future," Griffith said. He also anticipates rolling this system out to other stores in the region.