Convenience Store

Small Box energy

www.smallboxenergy.com

The Challenge

Enduring large expenditures for operational inefficiencies and overall large energy consumption vice president of a mid-west company owning a large number of convenience store sought out a cloud-based energy management platform as a solution to their problem. With several locations within their portfolio, it was also equally important for the owners and management team to understand where their maintenance funds should be going, and which locations proved to need it most.

The Solution

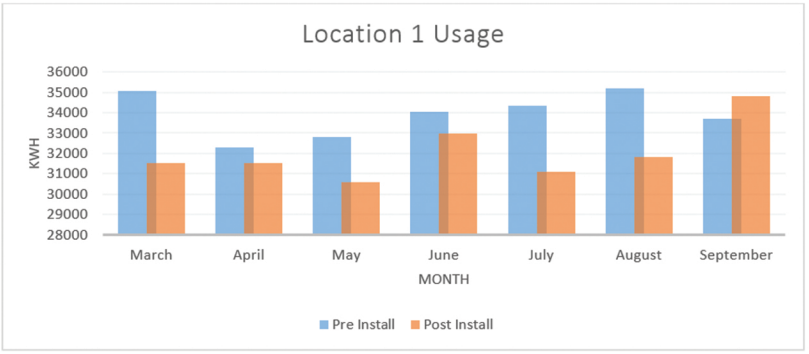
The chief executive officer and vice president of operations selected Small Box Energy's chameleon™ – an enterprise extensive energy management equipment diagnostics and food safety platform and installed it into one of the company's locations. This location was picked due to the proximity to the company's headquarters. A six-week test, divided into three equal phases including pre-metering, an adjustment period and a post-installation period, was conducted to capture data and measure results.

The platform included adaptive controllers for the walk-in's, wireless smart thermostats for HVAC control, a lighting control panel, and a gateway device to connect the platform to the cloud. Energy consumption, equipment run-times, and alarm data collected via an internet connection to chameleon-cloud, a software tool providing data storage, analytics/reporting, and a user interface. iOS/Android apps and internet browsers offered data access, remote visibility and equipment control for the management team and the Small Box Energy test team.

The Results

Reductions in energy consumption achieved at the test location, see data below on before and after energy consumption. Savings came from reducing run-times of equipment and managing the equipment and environment more strictly. Highlights of the test results include:

- Adaptive controllers using demand-driven defrost (rather than timed defrost) and tighter temperature control reducing walk-in consumption.
- Smart thermostats with automated scheduling and managed/locked set points reducing HVAC consumption.
- Lighting controls with automated scheduling reduced consumption.



	Total Consumption	Normalized kWh
Pre Installation	237,494 kWh	278,964
Post Installation	224,347 kWh	241,542

In addition to energy savings, chameleon also helped the management team save in other ways beyond energy reduction.

Here are some examples from the test:

- **Inventory loss prevention and food safety**
  - Alerts for high temperatures in coolers sent by the system on multiple occasions alerted staff who corrected the situation before reaching critical temperatures.
- **Maintenance/repair savings**
  - Alarms visible in the chameleon app and texts/emails sent to managers and alerted staff to a potential freezer/cooler failure, thus avoiding costly, more extensive repairs.

1 Site

$6,420 in savings annually

That's 6,420 Slurpees