The Challenge

Faced with rising costs for payroll, insurance and additional regulatory requirements, a franchisee of a national brand with more than 30 Quick Serve Restaurants needed a way to offset these additional expenses. The company wanted a solution to make locations more energy and operationally efficient as well as provide diagnostic insight into how equipment was running across their entire portfolio.

The Solution

The franchisee selected Small Box Energy's chameleon™ – an enterprise wide energy management, equipment diagnostics and food safety platform, and installed it into three of the company's locations. Restaurants were selected to represent geographies with varying climates and different annual sales volumes. 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 was 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 provided data access, remote visibility and equipment control for the franchisee and the Small Box Energy test team.

The Results

Reductions in energy consumption were achieved at all three test locations. 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 reduced walk-in consumption as high as 27%
- Smart thermostats with automated scheduling and managed/locked set points reduced HVAC consumption up to 43%
- Lighting controls with automated scheduling reduced consumption as much as 8%

	Site A	Site B	Site C
Energy Reduction Monthly	15%	10%	5%
Kilowatt Reduction Monthly	4,176	2,674	784
Cost Savings Monthly	$668	$294	$370
Annual Cost Savings	$8,016	$3,528	$4,440

In addition to energy savings, chameleon also helped the franchisee 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
  - An alarm visible in the chameleon app and texts/emails sent to managers and the test team alerted everyone to a potential freezer failure. Technicians discovered and repaired a minor refrigerant leak before the unit failed, which would have lead a more expensive repair bill and possible loss of inventory.

3 Sites

$15,984 in savings annually

That's **3,814** Hamburgers