

Small-Box/Specialty Retail Store

Proven Energy Savings for Any Cooling Requirements

Specialty retail stores often have a lot going on within a relatively small space. Examples include refrigeration for perishable products and zoning the HVAC for certain areas such as pharmacies in drug stores.

For a national retail pet store chain, the unique challenge was balancing HVAC energy efficiency with proper temperature management 24/7. Pet stores have unique cooling requirements because they need to maintain several “micro-climates,” each with their own HVAC demands. The aquarium area needs to handle increased humidity while the reptile section needs to adapt to increased heat loads resulting from heat lamps. In addition, the entire store typically has higher ventilation and air flow requirements to support the health needs of the animals.

Encycle’s unique IoT-enabled technologies addressed all these issues and helped the customer achieve the impressive energy-savings results they were looking for.

How Encycle helped a national specialty retail chain reduce their HVAC energy spend by more than \$6,000 per store in Southern California.

Client Challenge

- Reduce spikes in electrical demand during store opening hours
- Achieve reductions in energy spend and consumption
- Maintain comfort for different micro-climate zones within the store
- Develop control strategies that react to varying rooftop unit (RTU) performance and efficiency

Swarm Logic® Solution

Swarm Logic technology was installed at 5 store locations.

The size of the customer’s retail stores ranged from 15,000 – 25,000 square feet and included a typical configuration of four to six RTUs to cool the spaces. Swarm Logic® added a new set of capabilities to existing building controls by leveraging recent developments in IoT technology and cloud-based software applications. Swarm Control provided a synchronized staggered startup function that allowed cooling to occur gradually rather than forcing all rooftop (RTU) units to work all at once at the start of business. During peak demand hours, Swarm Logic enabled the facilities’ RTUs to operate as a networked system, responding more efficiently to changing conditions such as outdoor temperature and building occupancy, thereby apportioning energy consumption more logically.



The customer had already installed an energy management system (EMS) in all their locations. Swarm Logic worked seamlessly with the EMS to provide savings on top of those already achieved from the EMS. Swarm Logic also enabled the customer to take advantage of demand response programs, which generate a revenue stream to help offset energy costs.

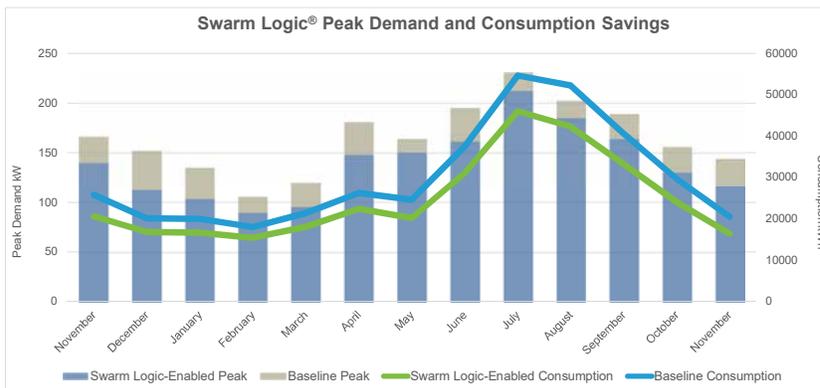
By capturing operational data in the Swarm Portal, Encycle's Customer Success team found that several sites had some RTUs that were compensating for others that were unable to meet their cooling requirements. Encycle collaborated with the customer team to easily deploy control schemes tailored to each site to mitigate the impact of issues such as underperforming RTUs.

Swarm Logic Results

Prior to deploying Encycle's Swarm Logic HVAC energy management software, the customer demonstrated sharp spikes in electrical demand at store opening. Deploying Swarm Logic helped the stores lower electric demand and associated utility demand charges. In fact, the retail pet stores achieved annual reductions of 16% in HVAC peak electrical demand and 17% in HVAC electric consumption. The customer started achieving these results almost instantaneously after activating Swarm Logic all while maintaining the consistent environment needed for store shoppers and animals.

The Numbers

- Total savings of \$31,469 for 5 sites
- Reduced peak demand by up to 20% per site
- Total kWh reduction of 136,956
- Reduced HVAC electric consumption by 17%



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