

Movie Theater Chain

Expanding Sites Realize Expanded Energy Savings

A movie theater customer expanded their operations to eleven facilities across New Mexico. With higher than average national outdoor temperatures, the HVAC systems at these facilities need to work extra hard to keep patrons comfortable. Finding ways to reduce peak electrical demand and implement load-management technologies were necessary to reduce energy costs and consumption. Like most entertainment venues, these theater sites presented opportunities for Encycle's unique Swarm IoT™-enabled technologies to unlock new energy savings.

How Encycle helped a movie theater chain gain control of energy loads, reducing total annual energy spend by \$3,200 per site.

Client Challenge

- Reduce peak electrical demand without affecting customer comfort
- Reduce resources spent on calculating and implementing load limiting techniques
- Perform demand response more elegantly
- Access load-level data

Swarm Logic® Solution

During hot summer days, moviegoers expect a comfortable auditorium as a refuge from the heat outside. The wide variety of demands placed on an HVAC system presents several challenges for maintaining temperatures. Late-morning opening hours cause HVAC equipment to work extra hard just to bring auditoriums and atriums to desired temperatures. As theaters approach maximum occupancy, a highly responsive control system is needed to accommodate big swings in cooling demand while maintaining comfort. And even with proper venting, projection rooms can have tremendous heat loads due to projector lamps.

Encycle's deep understanding of the unique energy consumption profile of movie theater facilities helped this customer reduce excessive peak demand and electric consumption. Leveraging the HVAC synchronization and control capabilities of our Swarm Logic® cloud-based solution, a staggered startup function allowed cooling to occur gradually rather than forcing all rooftop units (RTUs) to work all at once at the start of the day. 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. With Encycle's guidance, the customer also enrolled their facilities in three energy companies' demand response (DR) programs and then used Swarm Logic to simplify DR tasks.

Swarm Logic Results

A benefit for the movie theater chain that was immediately felt by the busy facilities manager was the newfound ability to view and control loads across the company's entire portfolio, all from a single platform. With movie schedules changing weekly, scheduling had to be fast and easy. Having integrated seamlessly with a variety of building automation systems, the Swarm Logic technology delivered on this requirement. The system also prevented overriding of the thermostats, effectively locking out unauthorized attempts to change the interior temperature of a facility.

Another feature valued by this customer is that the Swarm Portal is mobile. This allows the facilities manager to access load data and modify schedules while on the road. He has even logged in to the portal and made changes from his cell phone while attending a soccer game. The customer portal is accessible anywhere there is an internet connection – a necessary feature for facilities managers who are often on the go and need the ability to make quick changes.

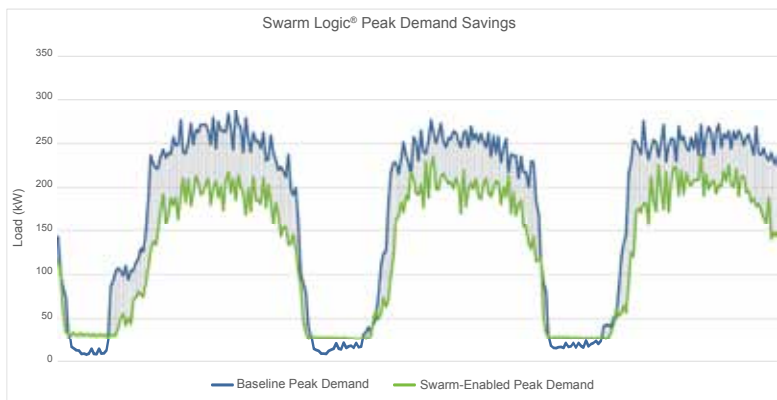
With average annual savings of \$35,361, the movie theater chain is proving that social responsibility and fiscal integrity do not have to be mutually exclusive. Swarm Logic technology helped this customer to qualify for incentives from El Paso Electric, PNM, and Xcel Energy.

The Numbers

- 26 kW average monthly peak kW reduction per site
- 53,012 kWh average annual reduction per site
- 15% average monthly demand reduction per site
- \$35,361 average annual savings

"Encycle's solution maintains comfort nicely even during hot California summer afternoons."

Allan G.
Facilities Manager



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Encycle Corporation

420 N. Twin Oaks Valley Road #1028
San Marcos, CA, USA 92069-9998
1 855-875-4031

info@encycle.com
www.encycle.com