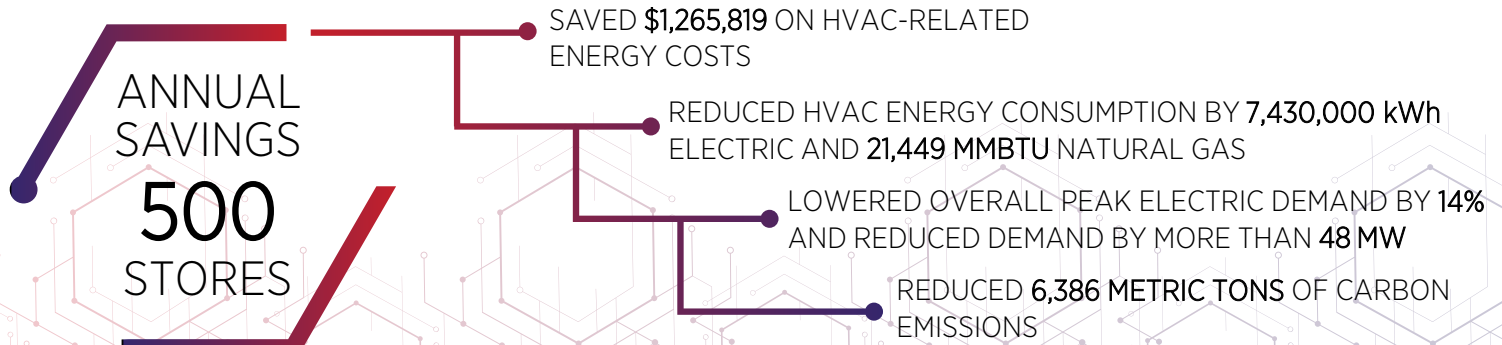




HOW ENCYCLE IS HELPING BARNES & NOBLE, A MID-BOX RETAIL CHAIN, SAVE \$1.2 MILLION A YEAR ON HVAC ENERGY COSTS.

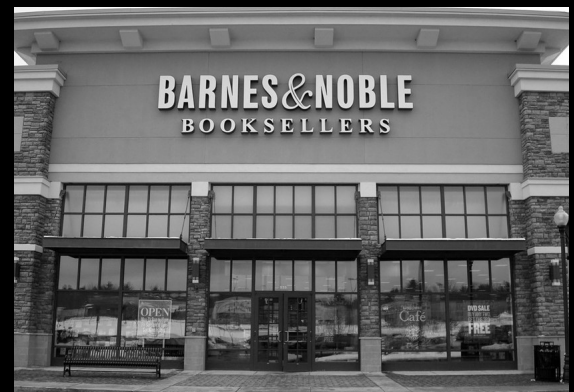


BARNES & NOBLE

MID-BOX RETAIL CHAIN

This major mid-box chain dominates its market niche in the U.S. with brick-and-mortar stores in every state. Its retail locations feature multiple floors, unique shopping sections, and cozy nook cafés, with each area having different cooling and heating requirements. Like many large retailers, Barnes & Noble has a busy facility management team with multiple top priority tasks they handle with day-to-day responsibilities associated with maintaining over 600 stores that average 26,000 square feet.

The retail chain had already taken several steps to improve energy and HVAC performance by partnering with a leading smart thermostat OEM and a national HVAC maintenance vendor. Encycle teamed with the OEM to bring new savings opportunities forward with the seamless integration of its data-driven Swarm Logic® software to their smart thermostats and deliver significant energy savings while providing better visibility into the operational performance of the retailer's HVAC assets.



CUSTOMER CHALLENGES

- Achieve reductions in energy spend and consumption without compromising occupant comfort.
- Increase their HVAC vendor's ability to anticipate, prioritize, and schedule maintenance activities.
- Improve operating efficiency without adding more work to their facility operations team.
- Maintain comfort for different "micro-climate zones" in each store. Cafés have heat-producing equipment and condensed occupancy in dining areas, while other store areas require effective humidity control to protect merchandise.
- HVAC control solution needed to adapt to changing requirements and provide reports for adherence to state and local governments regulations.

SWARM LOGIC RESULTS

What began as a 90-day pilot trial grew to a successful enterprise-wide deployment of Swarm Logic. Barnes & Noble initially installed Swarm Logic at 30 stores and after seeing the successful results, they subscribed the remaining 400+ sites.

The retail chain realized a significant decrease in energy consumption and demand while maintaining building comfort for customers and employees. Swarm Logic efficiently maintained the desired temperature and humidity throughout each site, including the challenges of micro-climates within each site caused by the café, occupancy and weather conditions.

The facility management team also valued that Swarm Logic operates autonomously in the background and requires no human intervention to maintain or monitor its actions, so no additional work was required to realize the full benefits of deployment.

ENCYCLE'S SWARM LOGIC SOLUTION

With smart thermostats already installed, Swarm Logic integrated seamlessly to synchronize HVAC control decisions and enable units to operate most efficiently in real-time, responding to changing conditions such as outdoor temperature and building occupancy levels. The cloud-based solution uses machine learning capabilities to create dynamic models for each building's thermal load profile to help achieve significant energy savings.

Swarm Logic technology also provides customers and HVAC service vendors with access to Swarm Portal, Encycle's web-based reporting platform that features robust analytics and role-based permission sets.

The retailer's HVAC service vendor was impressed with the operational data from Swarm Portal and regularly uses the platform to report on store comfort and identify potential mechanical issues, allowing service personnel to address underperforming units and reduce emergency service calls.



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