

# Case Study



## A discount retailer achieves multiple goals with AI and IoT

Standardized store and equipment operations, improved occupant comfort, and exceeded target cost savings across over 2,100 stores in the USA.

### The Customer

An American chain of discount department stores operates in over 45 states in the USA. They focus on bringing customers high-quality department and specialty store brands at great savings while providing an exceptional experience.

### The Challenge

The retailer faced challenges around the rising demand for occupant comfort while also trying to reduce energy and maintenance costs across their store network. They wanted to standardize HVAC and lighting configurations and monitor all stores from a central location, to proactively resolve issues for better equipment performance. However, an average of 7-8 rooftop units (RTU) of different brands per store, increased the complexity of the challenge.

### The Solution

To overcome these challenges, the retailer partnered with Carrier About to deploy their AI and IoT-driven managed services across the store network. The services leveraged the existing Building Management System (BMS), sensors, meters and equipment across the retailer's store network. These were on-boarded onto our Abound™ Insights platform. The platform processed the data extracted from the connected systems and analyzed it to discover energy efficiency and store operation improvement opportunities. The platform would advise the potential impact of issues and recommend corrective actions for them, which helped in prioritizing actions across the store network.

The stores were supported by our 24/7 Carrier Customer Command Centers - who offer a centralized service desk for remote diagnostics and technical assistance that captures insights and takes effective measures to resolve issues. The command centers with their team of data scientists, HVAC, controls and other domain experts, enabled the retailer to meet their business objectives through round-the-clock service, proactive actions and continued supervision of the stores' equipment operations and maintenance.

In addition, the BMSs in stores were connected to an automation software package, which offers automatic corrective actions. This enabled the retailer to eliminate a range of manual tasks, and

significantly reduced the need for unscheduled maintenance, while also becoming more agile to respond to any changes.

The Abound Insights platform provided predictive insights to the command centers to enable improving the performance of connected equipment. These insights helped introduce several strategic initiatives to effectively manage energy consumption.

The team at the command centers introduced a Repair and Maintenance (R&M) program to address BMS issues, focusing on delivering cost-effective solutions to problems with quick resolution times. This program led to a notable reduction in downtime for the BMSs. Additionally, it offered the retailer visibility into the status of each R&M work order. The team created weekly weather reports to tackle equipment issues in the retailer's widespread store network. The report covered temperature changes, storms, and fires, providing insights into possible impacts on stores' operations. It enabled the team to take proactive actions, address comfort issues, and facilitate early planning for storm support. Furthermore, during extreme weather conditions such as hurricanes, the team provided hourly updates on the operational status of stores, accompanied by the latest weather reports.

In 2022, the retailer began participating in Demand Response (DR) events. The command center team set up the environment (configuration, batch files) for over 350 stores to support the selected DR events. In 2024, the team successfully managed over 100 Demand Response events, totalling approximately 220 hours across more than 500 stores.

The managed services by Carrier Abound standardized the way the retailer manages energy consumption and implemented HVAC and lighting controls-based savings strategies. In addition to cost reduction, the retailer got unprecedented visibility into store energy operations which led to an increase in overall compliance levels.

## The Result

Carrier Abound implemented complex control logic and robust operating processes to deliver significant cost savings and efficiency in operations. This partnership with Carrier Abound became cash-positive for the retailer in its first year through a share of the energy cost savings delivered by the program, exceeding expectations.

Key results as of 2024:

- i. Over 160 million kWh saved over 5 years of the engagement.
- ii. 45% of work orders on HVAC and lighting issues were remotely resolved, saving over USD 7.2 Million<sup>Ⓞ</sup> from truck roll avoidance.
- iii. The operational service-level agreement (SLA) for calls and tickets were met; 91% calls were answered within 20 seconds.

<sup>Ⓞ</sup>Disclaimer: This value is based on assumed value per truck roll.

Carrier Abound enables the retailer to support local communities:

The retailer operates in regions of the United States that are frequently impacted by hurricanes and other extreme weather events. In the aftermath of such incidents, the retailer remains deeply committed to supporting local communities. Their priorities include the rapid re-opening of stores and the provision of essential services such as access to restrooms, parking facilities for emergency responders, and indoor spaces where individuals can stay warm or cool, depending on the weather conditions. Carrier Abound plays a critical role in enabling these efforts and enhancing the retailer's responsiveness during times of crisis.



**This project won a Top Project of the Year Award in the Software Implementation Category at the 2025 Energy+Environment Leader Awards.**

Write to us at [abound@carrier.com](mailto:abound@carrier.com) for more on how we can help your company achieve its business and sustainability goals.

### About Carrier Abound

Carrier Abound provides digitally connected lifecycle solutions and services for diverse building portfolios. The solutions and services enable building management to see deeply and broadly across their assets, prioritize and act on real-time insights, and refine, adapt, and scale on a continual basis to improve energy efficiency and asset performance, enhance occupant comfort and productivity, and streamline compliance reporting. Carrier Abound is part of Carrier Global Corporation, global leader in intelligent climate and energy solutions.

For more information, please visit [abound.carrier.com](https://abound.carrier.com) and join the conversation on [LinkedIn](#).

