Elevating Norton Healthcare Energy Efficiency

Norton Healthcare optimized energy efficiency, cut costs, and enhanced patient comfort with a comprehensive infrastructure upgrade.

Quick Facts

Location: Louisville, KY
Industry: Healthcare
Products: Chillers | Thermal Energy Storage System | Building Management System (BMS) | Trane Intelligent Services®

Results

846M kBTU
Decreased Energy Consumption

$8.3M
Utility Savings

Highlights

- Achieved $8.3M in utility cost savings through strategic healthcare energy efficiency upgrades.
- Upgraded chillers, air handlers, and lighting systems to optimize performance, improve air quality, and enhance Indoor Environmental Quality (IEQ) for patients and staff.
- Implemented a campus-wide Building Management System (BMS) for real-time energy monitoring, system optimization, and improved facility operations.
- Reduced healthcare energy consumption by 846M kBTUs, supporting sustainability goals.
- Leveraged Trane Intelligent Services for ongoing data analysis and performance insights, identifying new energy-saving opportunities and enhancing long-term efficiency.

Challenge

Norton Healthcare in Louisville, Kentucky, delivers award-winning patient care around the clock and ranks as the city's second-largest employer. The healthcare system faced escalating energy consumption, increasing maintenance costs, and aging equipment across its extensive network of facilities, including acute care hospitals, a specialized cancer center, medical offices, and an emergency medical center. Leaders knew facility upgrades were critical to providing the patient care for which the hospital is recognized. "We operate 24/7/365, the lights are always on, energy is always being used, and equipment ages at an accelerated rate," said David Boome, Norton Healthcare System Director for Design and Construction, and Facility Planner. "Maintaining the proper environment for our patients is our goal, and we wanted to do that as efficiently, sustainably, and cost effectively as possible. We needed to act." Leaders wanted an innovative and comprehensive plan to help improve Indoor Environmental Quality (IEQ) and patient comfort, update aging infrastructure, lower energy costs, and reduce their carbon footprint.

Solution

"Norton Healthcare needed a collaborator and Trane was the perfect fit," said Healthcare Vertical Market Strategy Leader, Christy Fetsch. "They liked that we could serve as a "one-stop shop," simplifying their complex project while providing a holistic solution".

The multi-year initiative began with an energy assessment, comprehensive inspections, and detailed analysis of utility data. Using these insights, Trane developed customized solutions designed for each building's unique requirements.
Key project components included:

- **At Norton Audubon Hospital,** a thermal energy storage system featuring modular tanks capable of storing 4,500 ton-hours of cooling. Ice generated at night during off-peak hours enables daytime cooling with lower energy costs.
- **Norton Hospital** upgraded air-cooled chillers known for industry-leading efficiency and minimal operational noise, ideal for sensitive areas such as ICUs and operating rooms.
- **Norton Women's and Children's Hospital** incorporated thermal energy storage tanks, utilizing night-time ice generation to reduce peak demand and provide redundancy.

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Optimizing System Performance

To enhance healthcare energy efficiency and system performance, Norton implemented a new, campus-wide BMS enabling real-time remote monitoring and control of HVAC systems, lighting, and utility data. Operators use the BMS to optimize operations and ensure comfort standards are consistently maintained.

Ongoing Collaboration Drives Continuous Improvement

Trane Intelligent Services® were added to gather real-time energy-use data and provide system performance analysis. The teams collaborate regularly to review building data, with Trane providing recommendations to help Norton Healthcare to enhance building performance and the environment of care.

"If you're not monitoring current performance, you can miss energy savings opportunities," said Fetsch. "We collaborate to help identify ways to find greater efficiencies and optimize performance to help Norton Healthcare continue their carbon-reduction journey."

Results

Norton Healthcare's collaboration with Trane improved patient comfort, lowered energy and operational costs, and enhanced IEQ, ensuring a comfortable healing environment.

"There were a lot of complex components to this project, but our collaborative approach helped us optimize our facilities for patients, staff, and guests, all while reflecting our commitment to sustainability," said Anthony Mathis, Norton Healthcare System Director of Sustainability. "Even better, we continue to optimize performance regularly, further enhancing our facilities."

In six years, Norton Healthcare reduced CO2e emissions, lowered utility expenses by $8.3M, and decreased total energy consumption by 846M kiloBritish Thermal Units (kBTUs) — equivalent to funding more than 800 ambulance trips annually.

Their efforts have earned national recognition through the American Society of Healthcare Engineers' Energy to Care Awards, with Norton Audubon Hospital receiving ENERGY STAR® certification for five consecutive years.

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