**Customer Story: Elevating Norton Healthcare Energy Efficiency**

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

**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.

Facing aging equipment, rising healthcare energy consumption, and increased maintenance costs in multiple facilities, 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**

The multi-year, multi-phase energy initiative began with an in-depth energy assessment, comprehensive inspections, and detailed analysis of utility data. Using these insights, a customized solution was designed for each building’s unique requirements. Key project components included chiller plant integrations, HVAC equipment modernizations, lighting replacements, building envelope improvements, and significant upgrades to the building management system (BMS).

Key plan components included:

* At Norton Audubon Hospital: a thermal energy storage system was integrated, featuring modular tanks capable of storing 4,500 ton-hours of cooling. Ice is generated at night during off-peak electricity hours, allowing for daytime cooling with significantly lower healthcare energy use and costs.
* Norton Hospital: upgraded to air-cooled chillers known for industry-leading efficiency and minimal operational noise. With the lowest published sound levels, these chillers are ideal for sensitive areas such as intensive care units and operating rooms.
* Norton Women’s and Children’s Hospital: also incorporated thermal energy storage tanks, utilizing night-time ice generation to further reduce peak daytime energy demand and provide redundancy.

**Optimizing System Performance**

To further 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, promptly address issues, and ensure comfort and safety standards are consistently maintained.

**Ongoing Collaboration Drives Continuous Improvement**

Real-time energy-use data provided ongoing system performance analysis—based on these inputs, data-driven recommendations helped Norton Healthcare continue to hone building performance and enhance the environment of care for its facilities.

**Results**

With upgrades and collaboration, Norton Healthcare 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 work and comprehensive approach helped us optimize our facilities for our 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 as the days, weeks and months go by.”

In the past six years, Norton Healthcare has reduced CO2e emissions, lowered utility expenses by $8.3M, and decreased total energy consumption by 846M kiloBritish Thermal Units (kBTUs). The energy savings alone are 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. Norton Audubon Hospital also received prestigious ENERGY STAR® certification, becoming one of only three Kentucky hospitals certified for five consecutive years.

For more details on this project, [read the full story](https://www.trane.com/commercial/north-america/us/en/about-us/newsroom/case-studies/healthcare/norton-healthcare.html).