Reliable Systems Lead to Zero Downtime

Powered by intelligent building automation, Children's of Alabama ensures zero downtime and achieves 17.9% energy savings.

Quick Facts

Location: Birmingham, AL
Industry: Healthcare
Products: Trane System Controls | Trane Tracer SC+ | Building Automation System (BAS)
Topics: Energy Efficiency | Energy Cost Management
Services: Trane Intelligent Services | Building Automation | Predictive Maintenance

Results

17.9%
Reduction In Total Energy Use* Since January 2024

$72,062
Projected Positive Cash Flow By Year 5

49¢
Per Sq Ft Annual Cost Reduction, Despite Rising Energy Costs

93%
Reduction In Alarms, Improving Maintenance Efficiency

Highlights

- Commitment to zero HVAC-related downtime in a critical healthcare environment
- Advanced controls elevate efficiency, comfort and cybersecurity resilience
- Bi-weekly team collaboration meetings throughout the project to maintain continuous optimization

Challenge

Children's of Alabama is one of the nation's leading pediatric hospitals, known for its size, expertise and dedication to caring for children across the state and beyond. Recognized by U.S. News & World Report as one of the best children's hospitals in the country, the facility is a cornerstone of specialized medical care. Yet even with its reputation for excellence, leadership faced pressing challenges. Rising energy costs strained budgets, and HVAC failures posed risks to life-saving procedures. The system demanded periodic reboots, and while nearly 93% of alarms were false, they still pulled staff away from critical responsibilities. At the same time, leaders sought to advance ambitious sustainability goals without compromising the precise environmental conditions required for the highest level of patient care.

*Energy Savings are determined on an aggregate basis and are subject to Trane's standard terms and conditions. Savings are calculated in accordance with the International Performance Measurements and Verification Protocol (IPMVP) 2016. In certain cases, the parties may mutually agree to recognize non-measured (stipulated) savings, as permitted under the contract. Actual results may vary depending on facility operations, maintenance practices, and other external factors.

Solution

It Takes a Team

The Trane team implemented a collaborative approach that transformed how the hospital managed its building systems. Through bi-weekly energy meetings, they developed customized strategies tailored to healthcare's unique demands, fostering a relationship focused on optimization and proactive problem-solving. "Trane's team worked alongside ours every step of the way. They listened, adapted, and helped us create solutions that fit the unique demands of a children's hospital," said Bob Crumpton, Divisional Director of Engineering, Children's of Alabama. The team conducted rigorous cyber security testing to ensure system resilience and worked hand-in-hand with hospital staff to understand operational priorities and building requirements needed for patient care.

Intelligence in Action

The technical transformation centered around comprehensive Intelligent Services with predictive analytics monitoring equipment health continuously. Advanced Tracer® SC controllers and enhanced network infrastructure eliminated the need for manual reboots, while sophisticated algorithms eliminated false alarms. Smart scheduling reduces energy use in non-critical spaces, and demand-based temperature resets optimized efficiency. By proactively fine-tuning operations for maximum performance, the building automation system essentially thinks ahead to prevent problems before they impact the patient care environment.

Trane's Intelligent Services team continues to monitor, analyze, and fine-tune system operations with hospital staff. Their ongoing involvement ensures advanced controls and equipment deliver sustained reliability and measurable improvements over time.

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>
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Smart Alerts Give Peace of Mind

Predictive maintenance proved it's worth when the new system detected performance issues with Chiller 1 before they escalated into costly failures. Analytics identified trends and anomalies that would have been impossible to catch through traditional maintenance schedules. "Identifying and addressing issues early supports our staff and ensures we stay true to our mission of providing the highest level of care for children," said Crumpton. This proactive monitoring allowed the mechanical team to coordinate repairs during planned maintenance windows that never disrupted the indoor environment and maintain critical chiller plant uptime throughout the process.

Results

The transformation delivered reliability and efficiency healthcare facility leaders had been seeking. The hospital experienced zero HVAC-related downtime during the upgrade, and this will continue to be the case moving forward, with the system already identifying chiller issues before they became failures. False alarms dropped by 93%, freeing maintenance staff to focus on patient care priorities. The upgrade has also reduced total energy use by 17.9% and saved $0.49 per square foot annually despite rising energy rates. The facility now projects $72,062 in positive cash flow by year five while meeting sustainability commitments. These results are supported by more than equipment upgrades alone. Trane's Intelligent Services team provides continuous monitoring and optimization that ensures systems remain reliable day after day. Their ongoing oversight enables the hospital to sustain zero HVAC-related downtime and advance toward its next energy target of a 25% reduction. "I am grateful for the Trane team's dedication and oversight of our mechanical systems and energy efficiency efforts. Their commitment has helped Children's of Alabama maintain its standing among the nation's highest-ranked facilities," said Crumpton. Most importantly, the hospital has proven that advanced building intelligence can enhance both operational excellence and environmental stewardship without compromising the mission-critical reliability that patient care settings demand.

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