

Academic Medical Center Enhances Reliability with Vertiv Power and Cooling Solutions

A Vertiv Case Study



Organization

A large, non-profit academic medical center that provides clinical and hospital care and is a leader in research, education and health information.

The new hospital tower expansion at their main campus in Weston, Florida, allows the hospital to care for more patients with complex care needs including patients with advanced heart failure.

The tower includes:

- Newly expanded Emergency Services Department with 50% more emergency room capacity.
- 50 more hospital beds for patients facing cancer, cardiac and neurological conditions and those in need of transplant services.
- The addition of two resuscitation bays with state-of-the-art medical gas booms.
- Elevated windows to give patients access to natural light and facilitate comfort and a healing environment.

Background

This academic medical center experiences an occupancy rate that typically exceeds 90%. To better serve patients in a growing market, the healthcare system recently completed an expansion at its main campus in Weston, Florida, which includes the addition of a new 221,000-square foot multi-level hospital tower specifically designed to accommodate patients with complex care needs. The tower houses a 2,500 square foot data center and nine network closets, which serve as the backbone for IT in the facility and supports the availability of hospital information systems to care givers working in the tower. They turned to their long-time partner, Vertiv, to provide critical power and cooling infrastructure solutions to ensure the reliability, efficiency and flexibility of its critical IT infrastructure.

Case Summary

Location: Weston, Florida

Vertiv Solutions:

Improved patient care was the primary impetus behind the tower expansion at the medical center's main campus. The tower provides space for emergency services and it accommodates high-acuity patients with complex care needs, including those facing cancer, cardiac and neurological conditions. This patient population demands the best possible care, and the care givers who work in the tower need to know that they have 24/7 access to the data and systems that help facilitate their life-saving services.

Critical Needs: Reliable, efficient, trouble-free power protection for their growing communication systems.

Vertiv Solutions: The Vertiv team provided power and precision cooling solutions for the tower's data center and network closets along with a proactive monitoring solution to protect equipment and data from the threats of heat, humidity and power problems.

Results:

- Ensures healthcare providers' ability to deliver high-quality care to the sickest patients
- Enhanced reliability and increased protection for critical IT equipment
- Improved efficiency and flexibility through a centralized approach to critical power
- Delivers peace of mind through continuous monitoring of air and power infrastructure
- Validated that all requirements were met to pass AHCA inspection and avoid project delays

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Solutions

A Centralized Approach to Protect Critical Operations

When designing the power system to support critical operations and electronic health records in the new hospital tower at the medical center's main campus, Vertiv recommended a centralized approach because of the higher availability, improved efficiency and flexible distribution such an approach affords. The solution is anchored by a large Liebert® NX™ three-phase UPS, which powers the server room, IT room and several of the network closets located throughout the tower.

The Liebert NX UPS is designed specifically to ensure reliability in robust applications and to deliver excellent output power quality while correcting for all power fluctuations that can occur in a hospital setting. At the same time, by centralizing the power, the solution allows the medical center to take advantage of energy-saving control technologies while enabling flexible power distribution to loads downstream and supporting higher capacities today as well as the ability to easily add new technologies in the future. The centralized UPS takes up less floor space and is also easier to monitor and maintain, all of which add up to a lower total cost of ownership.

This centralized approach to reliable, efficient power was instrumental in helping them meet the requirements to pass AHCA inspections and keep the project moving forward as planned.

Precision Cooling Solutions

Vertiv worked closely with the general contractor on the project and the medical center's network and data center engineers to design precision cooling strategies for the IT equipment in the data center as well as the nine network closets located throughout the tower. In the data center, the Vertiv solution combined a dry cooler, fluid cooler, four row-based Liebert® CRV™ units and Liebert Mini-Mates to efficiently deliver the needed cooling capacity. The solutions allow cooling to more precisely match loads in the rooms, protecting equipment and ensuring availability while avoiding the inefficiencies and expense of overcooling.

Each of the nine network closets rely on a Liebert DataMate™, a solution that is specifically designed for cooling in small spaces. While slim, compact and easy-to-install, the DataMate units deliver high reliability and high sensible cooling capacity with two-speed fan control to more efficiently respond to the heat and humidity conditions. Standardizing on this precision cooling solution for all nine closets helped simplify the training requirements for internal staff while streamlining future maintenance needs, further optimizing hospital operations.

Remote Monitoring for Greater Peace of Mind

Given the critical, life-saving work performed in the new hospital tower each day, the medical center cannot take any chances that the availability of its IT systems will ever be compromised. Vertiv recommended and installed the Vertiv SiteScan® Web System, integrating it with the hospital's existing building management system (BMS), to enable around-the-clock, remote, web-based monitoring of its critical power and environmental systems.

With Vertiv SiteScan, the medical center protects its investment in IT infrastructure and benefits from the confidence of knowing its systems are always operating as intended. Staff can oversee and control those systems any time, from anywhere. Key facility personnel are immediately notified of any issues or potential issues with the system, and they can take the necessary actions to keep critical systems online and support the hospital's continued delivery of the highest-quality care for critically ill patients.

"These capital improvements support our ability to serve the growing number of patients who seek highly specialized services. The success of our medical and surgical programs has given us the opportunity to lay the foundation for continued growth, and we rely on partners like Vertiv to design and service the IT backbone upon which the future of healthcare must be built."

- DIRECTOR OF IT, FLORIDA

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