CASE STUDY

Helping you
Optimize. Store. Secure.
technology equipment ...

Chatsworth Products Provides Florida's First Free-Standing Hot Aisle Containment Solution to Premier Teaching Hospital

Custom solution was crucial for flexibility of devices and layout of facility

Nearly 900 physicians and more than 8,000 nurses work at University of Florida (UF) Health Shands Hospital in Gainesville, Florida. The institute is among the nation's best in seven specialties—Urology, Cardiology, Neurology, Pulmonology, Nephrology, Gastroenterology and Oncology.

UF Health Shands' new data center, located in the new Shands Cancer Hospital, supports the entire hospital's operation. It backs up and stores everything from patient and staff files, to security footage and accounting files. As a premiere teaching hospital at the University of Florida, an efficient, reliable operation is critical for delivering the most comprehensive and high-quality care, which is why UF Health Shands Hospital returned to Chatsworth Products (CPI) for its state-of-the-art solutions and customization expertise.

On September 24, 2013 UF Health Shands opened its brand new data center. Using all Glacier White cabinets, runway and containment, the energy efficient space was ready for deployment. In addition to the CPI products used in the installation, STARLINE Track Busway with white plug-in units were also installed overhead, providing the necessary power to the cabinets. "Using white instead of the traditional black made it a class act and did not increase design costs," Brad Kowal, Associate Director of Computer Operations for UF Health Shands Hospital, stated.

> "We're the first data center in the state of Florida to have a free-standing HAC solution."
>
> Brad Kowal, Associate Director of Computer Operations for UF Health Shands Hospital

CPI's F-Series TeraFrame Gen 2 and N-Series Network Cabinets in Glacier White brighten UF Health Shands' data center and provide better visibility, while reducing power costs.

The Challenge

UF Health Shands Hospital was very familiar with CPI's products, customization capabilities and technical support.

Located in the main part of the hospital, the legacy data center includes black CPI F-Series TeraFrame® Gen 2 Cabinets with custom Vertical Exhaust Ducts. Two of the cabinets are Glacier White to easily distinguish them from the others and indicate that they host emergency equipment, such as DMZ servers, public safety and security information.

But even with this reliable architecture in place, the hospital still needed a new space with more power and cooling capabilities for its growing campus.

A Brand New Data Center

Initially, the room that turned into UF Health Shands Hospital's new data center was being used for storage. In order to support the robust IT infrastructure that the hospital needed, the 2,200 square foot space required a custom solution that would fit into the already existing room configuration.

US & Canada
+1-800-834-4969
Toronto, Ontario, Canada
+905-850-7770
chatsworth.com

Latin America
+52-55-5203-7525
Toll Free within Mexico
01-800-01-7592
chatsworth.com.co

Europe
+44-1628-524-834
chatsworthproducts.co.uk

Middle East & Africa
Dubai, UAE
+971-4-2602125
chatsworthproducts.co.uk

Asia Pacific
+86 21 6880-0266
chatsworth.com.cn

techsupport@chatsworth.com

CHATSWORTH PRODUCTS

UF Health Shands wanted an effective method to contain the heat from the IT equipment in the cabinets, exhausted cabinets and hot aisle containment. Additionally, the IT team had to consider air handlers and electrical gear, while maintaining enough space and flexibility in the data center.

After scoping out the specs of the room and figuring out the requirements, Kowal and Joe Keena, Data Center Operations Manager for UF Health Shands Hospital, started to look for efficient solutions for the new space. CPI was a clear contender.

Steven Bornfield, Sr. Data Center Consultant for CPI, explored and evaluated all of CPI's products and solutions, showed examples of other CPI custom projects and proposed design options to the UF Health Shands IT team. In addition to the CPI products, Steven also recommended the installation of STARLINE Track Busway for the power distribution within the facility.

By June 2013, UF Health Shands Hospital had begun planning the new data center, complete with CPI products.

CPI's Custom Solution

CPI created a custom cabinet and aisle containment solution to fit in the new data center space. The design featured CPI's 45U F-Series TeraFrame Gen 2 Cabinets with Vertical Exhaust Ducts, N-Series TeraFrame Network Cabinets, a custom, self-supported Hot Aisle Containment (HAC) Solution, Snap-in Filler Panels and OnTrac® Wire Mesh Cable Tray.

"We're the first data center in the state of Florida to have a free-standing Hot Aisle Containment solution," Kowal exclaimed.

CPI's OnTrac Wire Mesh Cable Tray provides point-to-point pathways for the network cabling in the data center.

UF Health Shands utilized CPI's custom HAC Solution to maintain cooling, while accommodating storage solutions of various heights, widths and depths.

The HAC was customized to different heights, widths and depths to become the perfect solution for UF Health Shands. Equipment that had to remain in its own housing was rolled up to the HAC and fitted with panels that were cut to the correct size. "This helps maintain cooling, while accommodating vendor-supplied storage solutions," stated Keena.

CPI's HAC solution eliminates hot spots, improves CRAC unit efficiency and provides flexibility for supply air delivery through the ceiling, wall or floor.

The data center has 33 cabinets that support highly virtualized application loading. Computing power is expected to average 12.5kW per cabinet with some cabinets supporting up to 25kW of electrical capacity. By not using a raised floor, the air handlers supply air to the space, reducing air handling unit power consumption and construction costs. Cabinet- and aisle-level containment strategies are used to provide closed-loop cooling to support high electric power densities.

> "This (HAC System) helps maintain cooling, while accommodating vendor-supplied storage solutions."
>
> Brad Kowal, Associate Director of Computer Operations for UF Health Shands Hospital

> "CPI provided a unified solution where all of the cabinets matched and ensured that we were consistent to support current and future growth."
>
> Joe Keena, Data Center Operations Manager for UF Health Shands Hospital

"Once engineering was complete, we focused on aesthetics," Kowal stated. "Being a hospital, we wanted the data center to have a clean room feel. Having all white accomplished that extra level of aesthetics that demonstrates we take the cleanliness of our data center seriously," he added.

Glacier White is not only an aesthetic feature, but the color also provides benefits, such as better visibility in the data center, which can reduce lighting costs and contribute to the energy efficiency UF Health Shands was hoping to achieve.

STARLINE's Custom Solution

"We needed to have three-phase power delivered directly to the cabinets, but in an efficient and cost effective manner," said Keena. Since the installation in the facility is a slab on grade architecture, there was no raised floor to run cables underneath. With some of the CPI containment products being implemented as well, deploying cables overhead would have been difficult.

The design included parallel runs, one white and one black to designate between the A and B feeds, of 400 amp STARLINE Track Busway. The busway was installed in the rear of the cabinets, directly mounted to the drop ceiling, minimizing the spacing required for the product. Customized plug-in units were also specified, with various configurations to meet the specific power requirements of individual cabinets.

The highly-effective seal on CPI's Snap-In Filler Panels prevent hot air from recirculating between the filler panels.

CPI's Vertical Exhaust Ducts guide hot exhaust air from the back of the cabinet to the drop ceiling plenum, creating a closed hot air return path to the cooling system.

UF Health Shands was able to implement busway on both the rows with long runs, and the shorter runs with containment by going with STARLINE overhead. Keena stated, "The flexibility added to our facility by incorporating STARLINE into our design will provide benefits to the data center for years."

Installation Begins

"Then the fun started," Keena said. UF Health Shands worked closely with Bornfield on the specs of arranging the cabinets in the data center.

The N-Series TeraFrame cabinets host the networking switches and provide maximum flexibility and separation of hot and cold air within the cabinet. There are two N-Series cabinets on the end of each row, with a total of four in the data center.

The sturdy and highly functional F-Series cabinets host servers and storage and support containment solutions, making it a smart choice for UF Health Shands' data center, which supports several types of equipment in one setting. CPI's Vertical Exhaust Ducts were the perfect choice in this solution to isolate and guide hot exhaust air from the back of the cabinet to the drop ceiling plenum, creating a closed hot air return path to the cooling system.

"The plan was to utilize all Vertical Exhaust Duct cabinets but due to the constant changing environment of various devices, it was decided to use both Vertical Exhaust Duct cabinets matched with the HAC solution to allow for the cabinets and equipment that might not be able to be installed into Vertical Exhaust Duct cabinets," Keena stated.

Custom cable openings were installed on the cabinets to allow proper power application. Both the A & B runs of STARLINE Track Busway were installed overhead, feeding the rear of the cabinets below. The white plug-in units have pin and sleeve receptacles on the face of the units.

CPI manufactured custom cable openings into the cabinets to fit UF Health Shands' unique design. Dual runs of STARLINE Track Busway can be seen overhead feeding these cables.

A Partnership with Results

CPI's Sales and Technical Support teams assisted in the design of the space and worked closely with the engineers to help them with the products, custom solutions and installation for UF Health Shands Hospital.

"We wouldn't have this data center if it wasn't for Steven. He came prepared, showed us options, and was able to walk the walk and talk the talk to the engineers. Our relationship, the responsiveness of the organization and quality of the product is why we went with CPI," stated Kowal.

> "CPI provided true customer service and focus throughout the entire process."
>
> Joe Keena, Data Center Operations Manager for UF Health Shands Hospital

UF Health Shands Hospital's new data center is running effectively with efficient cooling, zero hot spots and increased per-cabinet densities.

"CPI provided a unified solution where all of the cabinets matched and ensured that we were consistent to support current and future growth," Keena said. "CPI provided true customer service and focus throughout the entire process," he added.

From left to right: Steven Bornfield, Joe Keena and Brad Kowal

About Chatsworth Products
Chatsworth Products (CPI) is a global manufacturer providing voice, data and security products and service solutions that optimize, store and secure technology equipment. CPI Products offer innovation, configurability, quality and value with a breadth of integrated system components, covering virtually all physical layer needs. Unequaled customer service and technical support, as well as a global network of industry-leading distributors, assures customers that CPI is dedicated to delivering products and services designed to meet their needs.

CPI is listed with the General Services Administration (GSA) under Federal Supply Schedule IT 70. Products are also available through GSA Advantage and through Government Wide Acquisition Contracts (GWACs), including GSA Connections and NITAAC-ECS III (www.chatsworth.com/gov).

About STARLINE
Universal Electric Corporation (UEC), manufacturer of STARLINE Track Busway, has been a global leader in power distribution since 1924. The company's focus on innovation continues to pave the way for safer, flexible and reliable power distribution systems for data centers. Other STARLINE products include Plug-in Raceway, Critical Power Monitor, and 380VDC Solutions. Headquartered in the US, UEC operates global offices within the US, United Kingdom, China, India and Singapore. UEC's manufacturing facility is located in the US. (www.starlinepower.com)

About UF Health Shands Hospital
UF Health Shands Hospital is a teaching hospital of the University of Florida in Gainesville. It is one of seven hospitals in the UF Health system, and one of two campuses for UF's Health Science Center.

The faculty from the UF College of Medicine includes nationally and internationally recognized physicians whose expertise is supported by intensive research activities. Shands' affiliation with the UF Health Science Center allows patients to benefit from the latest medical knowledge and technology (ufhealth.org/shands-university-florida).

CHATSWORTH PRODUCTS

Alt Rev 1, 1/16 MKT-60020-626