

Savvis Communications

Data Center HVAC upgrade • Weehawken, New Jersey

Founded in 1995 and publicly traded since February 2000, Savvis Communications is a top tier managed service provider offering cross-industry global IT infrastructure services and solutions in the areas of hosting, network, security, professional services, cloud computing, business continuity, content management, proximity hosting, and web solutions. Savvis Communications is one of the largest IP network and hosting providers in the world, serving more than 4,000 customers, including 40 percent of the top 100 companies in the Fortune 500.



Project Summary

- \$2,124,000 per year in energy savings due to chilled water plant and pumping system controls upgrade at mission-critical data center

Project Team

- Savvis Communications
- Systecon, Inc.
- Nova Corporation



Trane air-cooled chillers installed at Savvis Communications' Weehawken, New Jersey, data center

Challenge

Savvis Communications leased the Weehawken, New Jersey, data center site (NJ2) in 2001 in part due to its close location to Wall Street and the New York-New Jersey financial markets, which meant Savvis could take advantage of near-zero lag time in providing its proximity hosting solution to its customers. The NJ2 facility is a split tower with 10 300-ton Trane Model RTAA air-cooled chillers—five chillers on each tower, each with a Systecon Inc. pumping system and control panels. However, the original

control system did not allow for the kind of comprehensive monitoring and control that a mission-critical data center facility requires.

Jason Garbus, Savvis Project Engineer, said, “It’s a critical application and these servers are tied in directly with Wall Street. Ninety percent of the work being handled in this data center is banking industry. If we lost cooling for only three to five minutes temperatures in server areas could very quickly go from 70 degrees to 95 degrees and it would take a couple of hours to recover. That could cause all kinds of problems for our clients and their customers. Loss of control and cooling simply cannot be tolerated.

“When we analyzed this system the chillers were all running at 100 percent capacity, day and night, and although the design called for 45 degree chilled water, it was delivering 34 to 35 degree chilled water. In addition to improving the control system, this was a huge energy saving opportunity!”

Solution

Systecon Inc. and Trane commercial systems teamed up to install new Systecon VariPrime™ control panels along with Tracer Summit™ building control units (BCU) to communicate with the facility’s overall Automated Logic building automation system.

Scott Corbin, Systecon, said, “The new panels include Allen Bradley SLC-5/5 processors and CTC Parker touch screen interfaces. This new control platform provides much better control. The touch screen is much more user friendly and includes extensive graphics so that operators can easily see system operating conditions. The VariPrime system is also consistent with other Savvis facilities. We also installed kW meters on the pumps and chillers so that operators can instantly see energy consumption.”

Garbus said, "A huge challenge was making the change to the new Systecon panels without disrupting data center operation. We worked with Systecon and Trane to develop a 200-point, step-by-step procedure. We literally had everything jumpered out as we installed and then connected the new control panels. Then we carefully, slowly transferred control to the new Systecon VariPrime and Tracer Summit BCU panels."

Results

The change out work began in early March, 2009, with a kickoff meeting for everyone involved in the project. A June 15 deadline was set but the job was completed three days early. Says Garbus, "We had absolutely zero impact on our customers' transactions and the operation of the data center. We never lost chilled water flow or temperature control. And we completed all of this during normal work hours. Normally you would never touch anything in a data center until after hours—you would do all work during the maintenance window of midnight to six o'clock a.m. But doing that would have easily doubled our project cost because we would have been paying time-and-a-half or double-time technician wages."

Thanks to the Systecon VariPrime and Tracer Summit BCU upgrades, Savvis has better, more precise control of the chiller system and is reaping huge energy savings. For example, instead of running all 10 chillers at full load all of the time, only three chillers on each tower are typically running at any given time—delivering significant energy savings and an 18-month payback for the project.

Tony Blunt, Trane Project Manager, said, "With the new Systecon panels and Trane BCUs the Savvis facilities managers now get complete

information on the chillers and pumps. Before, they simply had on/off information. Now they get all of the operating conditions including chilled water temperatures, flow rates, etc."

Jason Garbus said, "We can now match chiller capacity to the exact cooling load and reset chilled water temperature back to the original design specifications (45 degrees F). As a result energy consumption dropped from about 2.0 kW per ton of cooling to 1.3 kW per ton, saving about \$177,000 per month in energy costs. The project also qualified for \$35,000 in rebates from the local utility company. Plus, the data center now has immediate backup capacity if any of the 10 chillers fail.

Garbus says, "This project would not have been possible without the team of Savvis, Trane, Systecon and the other contractors and suppliers. This team has worked together on several earlier data center projects and so this job went very smoothly. This project was like a family reunion!"

Mike Sims, Director of East Coast Operations for Savvis Communications, said of the project, "This was literally a perfect, completely seamless project. Using the 200-step procedure everything went perfectly. It wasn't just like open heart surgery, it was like heart replacement surgery.

"It was very important that this upgrade project went smoothly. These are mainly financial industry customers that depend on this data center and servers. Any negative impact on data center operation would have been devastating to our clients and their clients."

Sims adds, "Trane and Systecon did a terrific job. Their systems knowledge and attention to detail are outstanding."

To emphasize the point, Sims notes that he just recently signed a maintenance contract

Systems Installed

- Systecon Inc. VariPrime™ control system with BACnet interface
- Trane Tracer Summit™ Building Control Unit (BCU) for chiller plant interface with building automation system.
- Trane Air-Cooled Chillers

with Trane, relying on Trane to maintain the chiller plant in accordance with the data center's strict requirements.

Joe Dones, Project Executive for Nova Corporation that served as construction manager and oversaw the project, said, "This was the nicest job I've ever been involved in. We were very impressed with the Trane and Systecon relationship and how they worked together to ensure the success of the upgrade. This project proved that with focus and attention to detail, even live, mission-critical facilities can be worked on during normal working hours. Trane and Systecon demonstrate a very high level of competence that gives us great confidence. We know that when they're on a project with us, those areas of the job don't need so much oversight."

Dones notes that Trane and Systecon will also be asked to participate in the expansion and upgrade of a Savvis facility that is next door to the NJ2 data center.

Michelle Hassemer, Vice President of Global Operations at Savvis Communications, said, "Our customers expect 100 percent uptime from our data centers. Our ability to meet this expectation hinges on the capability to provide consistent, effective and reliable cooling. Savvis has responsibility as stewards of the environment as well as a commitment to provide services in a cost-competitive manner. Energy savings derived from projects such as this both enhance our ability to protect the environment and contribute directly to our success as an enterprise."

Hassemer adds, "This project is a perfect example of the synergies that are present when industry leaders like Savvis, Trane, Systecon and our contractors/suppliers collaborate towards a common goal. We are very pleased with the outcome."



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