

Energy Savings Never Out of Style at Neiman Marcus

By Marianne Wilson

(**October 1, 2009**) Overseeing the engineering, energy management, sustainability, environmental/regulatory compliance and system-wide maintenance for The Neiman Marcus Group's fleet of properties is a significant challenge. This is due not only to the number and size of the properties, which total more than 6 million gross sq. ft., but also because in keeping with its status as one of the world's premier luxury brands, Neiman Marcus maintains extremely high standards with regard to optimizing energy efficiency and extending the lifespan of strategic electrical, mechanical and HVAC systems. The retailer has a "zero tolerance" stance on system outages that might disrupt the customer shopping experience and compromise customer loyalty.

To maintain its high standards and operate its properties as efficiently and accurately as possible, Neiman Marcus has moved forward aggressively in deploying the latest in building automation and control systems to capture critical performance data from key mechanical, electrical and HVAC systems. What's been missing from these disparate data-gathering systems is the ability to pull complex information into an easy-to-use format that detects, identifies and diagnoses system faults and anomalies in advance of major problems or outright failures.

"For the past 15 years, we've been trying to integrate weather data, utility data, and control-system data across our fleet of properties in order to automatically diagnose problems and tune systems to run optimally," explained Mark Boraski, VP property management, Neiman Marcus, Dallas, whose corporate structure is made up of the Specialty Retail Stores division—which includes 41 Neiman Marcus stores, two Bergdorf Goodman locations and 26 Last Call clearance centers—and the Direct Marketing division, Neiman Marcus Direct.

Until recently, Boraski said, Neiman Marcus never had a comprehensive automated system that had the ability to perform analysis and diagnostics.

"Although building automation systems (BAS) display valuable information, unless you have a process for this level of analysis, you just have raw numbers on a computer screen," he added.

Neiman Marcus' 15-year search for a solution ended when Boraski and his team piloted SCWatch, a software-as-a-service (SaaS)-based automated continuous commissioning platform from Scientific Conservation Inc. that persistently detects, monetizes and prioritizes system faults. To date, the retailer is deploying SCWatch across 25 of its facilities and intends to apply it to every property over time.

“For the first time, we have an automated process that continually checks our system assets across properties from a centralized dashboard to pinpoint which systems are performing outside of acceptable tolerances,” Boraski said. “This enables us to intelligently assign technical resources to address system issues on a prioritized basis. It has proven to be an effective resource-allocation tool.”

SCIwatch is an ACC platform that interfaces with any building energy management system for automatic data collection, warehousing, diagnostics and work-order issuance and tracking. It also serves as a centralized system that consolidates up-to-the-minute views into energy usage and system-wide performance levels with reporting parameters tailored for executive-level and operational staff.

Because SCIwatch fully integrates with Neiman Marcus’ building automation and control systems, it allows Boraski’s staff to pull up actionable data from a centralized dashboard to understand how key systems are performing at each facility.

Because system degradation can be extremely hard to detect—especially if the tools being used are not sensitive enough to pick up the slightest of anomalies that affect energy efficiencies—SCIwatch employs neural networks, a commercially proven form of artificial intelligence. By employing neural networks, SCIwatch can accept a virtually unlimited number of independent variables and produce a very accurate pattern of the way energy is consumed, managed and wasted.

“When we started applying SCIwatch in our first 21 facilities, we found a number of sensor errors,” Boraski said. “More importantly, SCIwatch identified sensors we thought were reading correctly that were actually misleading.”

Even with Neiman Marcus’ rigorous system-maintenance programs and state-of-the-art building automation and control systems, SCIwatch discovered hard-to-detect anomalies affecting strategic equipment such as short cycling and equipment-sequencing problems. The platform also discovered abnormal pressures in some refrigeration circuits that could result in compressor failure if left unresolved.

“Without SCIwatch, these problems probably would not have been caught until the next regularly scheduled maintenance cycle,” Boraski said. “This means systems would have operated in a less than ideal state for a month or more, thereby potentially jeopardizing major equipment while eating up unnecessary energy. It was quite surprising how many issues SCIwatch uncovered—ranging from economizer systems not working optimally to refrigeration systems with high evaporator and condenser pressures, to intermittent chiller surging—all problems that surfaced right after these systems were just serviced.”

For Boraski and his team, the system’s automated anomaly detection capabilities underscore the reality that there are simply never enough technical resources available to dedicate to the task of ongoing system diagnostics.

“You simply must monitor systems on a round-the-clock basis, especially for an organization like ours that expects equipment to be operating perfectly once our doors are open to our customers,” he said.

By detecting and diagnosing system anomalies well in advance of temporary outages and/or major failures, Neiman Marcus believes that it will reap considerable savings on capital and operational expenditures. In addition, the retailer hopes to extend the lifespan of strategic and highly expensive systems, and save significant amounts on annual energy spending by ensuring that power-hungry electrical, mechanical and HVAC systems are running optimally.

“SCIwatch is the embodiment of where building management is headed,” Boraski added. “Especially with expected equipment and energy costs going higher each year.”

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