

Case Study:

QS/1 Data Systems

Spartanburg, South Carolina

High-Tech Company Goes Green Using Metasys® Building Management System

QS/1 Data Systems is a forward-thinking company, driven by technology. As a result, the company has become a successful and fast-growing provider of pharmacy management software. When QS/1 decided to build a new headquarters to accommodate this growth, forward-thinking and technology were incorporated in the design of the facility as well. As a result, the facility was awarded a Silver rating under the U.S. Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED®) program.

Johnson Controls served as the LEED consultant to McMillan Smith & Partners, the architects that led the design team, and provided LEED commissioning services to QS/1. Johnson Controls also worked with the general contractor to design and install the HVAC system and building controls in the facility, including a Metasys® building management system.



QS/1 is a pharmacy automation solution provider, serving independent, chain and institutional pharmacies, and pharmacies with home medical equipment and nursing home departments. In business for more than 28 years, QS/1 has grown from nine to nearly 600 employees, the majority of which work at the corporate headquarters. "Having already expanded our existing facility three times, we had no room for continued growth," explains Chris Cox, director – product support for QS/1.

While accommodating continued growth was a primary focus, it was not the only goal QS/1 wished to accomplish in the construction of the new headquarters. The company challenged the project team to build a facility that represented its commitment to the community, and to do so with environmental responsibility and a quality work environment in mind.

Committed to Community, Employees and the Environment

The QS/1 headquarters was built on a redeveloped site in the downtown commercial area of Spartanburg. The site exemplifies the company's commitment to the revitalization of the area. And, it is said to serve as a cornerstone for continued high-quality growth of the downtown core. "As a civic-minded company, we were partial to the downtown site and were also the third company to move into the area. Now, everyday there are more than 400 of our employees in the city, patronizing the restaurants and shops," says Cox.

The six-story, 115,000-square-foot headquarters is the first commercial high-rise office building of new construction to be LEED certified in the state. "QS/1 was an astute client, willing to explore the potential of LEED," says Cullen Pitts, project architect from McMillan Smith & Partners. After attending a LEED conference and visiting the Brengel Technology Center at Johnson Controls, Pitts recognized that the program could serve the objectives of QS/1 through design and construction, as well as the future operation of the facility.



As LEED consultants, Johnson Controls conducted design reviews, led project meetings, provided team and technical support and initiated the application process. "Johnson Controls walked us through the process, provided examples of future planning and design along with valuable technical information, and helped us better understand the LEED credits and requirements," says Pitts. "This insight enabled us to design the facility with those requirements in mind."

"Johnson Controls knowledge of the USGBC's requirements was instrumental in streamlining the commissioning process too. Only a few of the credits we applied for were not approved at first pass. And even then Johnson Controls had ideas for appeal, which resulted in approval," states Cox. The process included a comprehensive commissioning plan to verify and ensure that the fundamental building systems were designed, installed and calibrated to operate as intended. Functional testing, training and a commissioning report containing documentation required by the Council were also provided.

Design and Building Management System Support LEED Initiative

The facility was shaped by seven categories of prerequisite design and construction criteria intended to achieve energy-efficiency, air quality and environmental compatibility. The USGBC evaluated the project based on adherence to these criteria and awarded the building a Silver LEED certification. Key features of the design included high-efficiency HVAC, lighting and plumbing systems, a high performance window glazing system and the Johnson Controls Metasys system.

The HVAC system demonstrated a 30 percent annual energy savings when computer modeled against the ASHRAE 90.1 building design standards. The system features a demand controlled energy recovery ventilator, which uses building exhaust to precondition the outdoor air supply, ultimately reducing energy use. And by monitoring occupant fresh air demand with sensors, airflow is increased as needed throughout the facility, ensuring air quality for employees. "It is an extremely complicated system," says Cox. "But with Metasys we are able to optimize the system itself and the equipment, while reducing costs and providing a better work environment. In fact, our energy cost per-square-foot is actually below that of our previous 45,000-square-foot facility. And because the system is Web-based, I am able to access it from anywhere which is extremely valuable considering the critical environment of our data center."

The Metasys system provides monitoring and control of HVAC equipment, the fire alarm system and lighting in the building. And in keeping with LEED requirements for measurement and verification, utility meters and carbon monoxide, CO₂ and humidity sensors are integrated with the system. The system also monitors the temperature in the QS/1 data center. If the temperature exceeds the designated set point, an alarm notification is sent to each of five cell phones. Under a service contract, Johnson Controls maintains the Metasys system and HVAC equipment, and monitors selected critical points from the Remote Operations Center at its Milwaukee, WI headquarters.

"QS/1 has made a significant investment in this facility and it is important that they are able to monitor its performance over the building's lifecycle. The Metasys system made this possible but also enabled us to take full advantage of available LEED credits," says Pitts.

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"By packaging information in the manner the USGBC expected to receive it, Johnson Controls was instrumental in making the certification and commissioning processes flow smoothly."

Chris Cox
Director – Product Support
QS/1 Data Systems



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