

**Nomination for Todd Finders  
Director, Global Data Center Services  
Years of experience in the FM profession: 19  
Organization Name: Emerson  
Location: St. Louis, MO**



**About The Nominee:**

As Emerson's director of global data center services throughout the project's design, construction and first year of operation, Todd Finders led the integration of design teams and in-house IT planning personnel to ensure that aggressive efficiency and sustainability goals could be met without compromising the availability required of a global IT facility. Finders' involvement in the project allowed Emerson's vision and goals to be effectively translated – from the initial design and planning to the provisioning and operation of the facility – into an innovative and sustainable facility that effectively supports a mission critical global organization.



**Type of Facility(ies): Data Center  
Type of Project: New Construction  
Number of Employees: 140,700 (total in organization, as of June 2009)  
Budget (total budget, dollars per sq. foot, etc.): \$50 million**

**Total square feet directly involved in the project: 35,000.**  
**Start date: June 2008; completion date: July 2009**

### **About The Project**

In early 2008, Emerson began construction of a global data center on the campus of the company's St. Louis headquarters. In addition to showcasing internal technologies and innovations in energy efficient design, the facility supports the company's worldwide manufacturing and engineering operations and serves as the first piece of Emerson's long-term data center consolidation initiative – merging more than 100 facilities worldwide into four global data centers.

The facility is fully equipped with a host of energy saving attributes, as well as a robust, high availability IT infrastructure enhanced by internally developed strategies addressing the three most critical constraints faced by data center managers today – power, cooling, and space.

To complete the project, Emerson enlisted an estimated 150 workers and leveraged the expertise of several design and construction partners throughout the Midwest, led by Todd Finders.

### **How was the nominee INNOVATIVE in his approach to the project? How did he use innovative thinking to overcome any challenges faced during the project?**

Because the project served as the first step in the consolidation of a well established IT network (comprised of more than 100 mission critical facilities around the world), Finders and the design team faced a variety of challenges in ensuring that the new facility would be sustainable while still optimized for high availability.

In a typical data center build, the construction team and IT teams that will ultimately occupy the building have little interaction with regard to the design and construction of a facility. However, Finders understood that, in order for all of the project's goals to be met, these teams would need to work in concert through every stage. Finders' leadership in integrating IT and construction/design teams resulted in a variety of innovations in the facility's design and construction.

Finders' overall approach to the project's goals also was innovative and unique. From the project's inception, a number of aggressive efficiency goals were established. In order to demonstrate a cost effective, worthwhile return on investment for these efficiency achievements, new and innovative solutions – some not typically seen in a data center environment – were required.

With this in mind, Emerson's construction partners and in house IT personnel – led by Finders – implemented a variety of energy saving attributes, including:

\* A 7,800-square-foot rooftop solar array containing more than 550 solar panels – the largest in Missouri – capable of generating 100kW of power on average (13.6% of day one power);

- \* Roof mounted condensers that reduced the project's footprint by more than 15,000 square feet;
- \* An efficient "sectional" design enabled piping quantities to be reduced by 75% – more than 2.5 miles of copper piping;
- \* Enhanced natural lighting – an attribute rarely found in data center environments – through the use of new building materials that direct sunlight into the building's core – limiting power consumption while maintaining structural integrity necessary to withstand an F-3 tornado; and
- \* An intelligent lighting control system that accounts for both artificial lighting inside the facility and daylight available outside the facility.

**How did the nominee address the LONG-TERM NEEDS AND GOALS of organization through his/her work on this project? What is the company's mission statement, and how does the nominee's work on this project mesh with the broader objectives of the organization?**

Emerson's brand promise states that the company "is where technology and engineering come together to create solutions for the benefit of its customers, driven without compromise for a world in action."

Because the facility was designed to support Emerson's global IT network, maintaining the highest possible levels of availability was a leading long-term goal for the organization. While Finders' vision for the project was driven by efficiency and scalability goals, he understood the value of availability and ensured that steps taken to achieve efficiency would not compromise business critical continuity.

With this in mind, Finders worked with Emerson's in house IT team to ensure a robust, high availability infrastructure was in place to maintain the highest possible levels of uptime. This commitment to Emerson's long-term availability needs enabled the company to exceed its projected availability goal (99.982% uptime) in the facility's first year of operation.

**How did the nominee's involvement improve OPERATIONS, EFFICIENCY, and the BOTTOM LINE?**

During the design process, Finders and his team anticipated a total energy savings of approximately 17% as a result of efficiency actions implemented in the facility's design as well as the IT infrastructure housed within.

However, upon completion of the project, this projection proved to be extremely conservative – with actual energy savings projected to exceed 30% over comparable enterprise facilities. Furthermore, while Emerson set out on the construction of its data center with very specific sustainability goals, a synergy of energy efficient design and long-term ROI became increasingly evident throughout the construction process.

After evaluating the costs and benefits of energy efficient strategies implemented,

Emerson learned that every step taken toward sustainability was justified directly by the expedited ROI it ultimately would provide.

Since opening the facility in July 2009, Emerson has been able to begin its global consolidation efforts by migrating (and subsequently) closing large, legacy facilities in Chicago, Cincinnati, and St. Louis. This has resulted in an estimated 75% reduction in data center floor space, translating to dramatic reductions in power consumption.

**What kind of HUMAN IMPROVEMENTS did the nominee achieve during this project? Productivity? Increased customer satisfaction? Outstanding safety results or awards?**

Answer

The lighting features in the facility were intended to improve employee efficiency and productivity, reduce human error, and enhance employee recruitment and retention. The facility also was designed to serve as a dynamic educational tool for all who visited or worked in the building.

Signage was installed throughout to highlight specific actions taken to achieve energy efficiency.

**What efforts did the nominee make to incorporate SUSTAINABLE DESIGN practices? Has LEED certification been pursued? What about Energy Star or other programs?**

Emerson wanted to ensure the project would represent sustainable best practices, both during and after completion of principal construction. From the project's inception, the building's designers meticulously consulted U.S. Green Building Council guidelines for achieving a predetermined LEED certification. Using these guidelines as the foundation for the project's design and construction, Finders and the team took steps to ensure that sustainable best practices were observed throughout the construction process (in addition to implementing the aforementioned energy-saving attributes).

During the site selection process, Emerson optimized the potential of an existing site on its St. Louis campus by triangulating the facility with existing assets and minimizing the project's required footprint. During construction, the use of locally procured recycled materials and the diversion of the majority of the project's waste enabled Emerson to minimize the use of fossil fuels in construction.

Nearly 20% of materials used to assemble the building were comprised of post consumer materials. The facility's frame was assembled from locally refined, recycled steel to minimize the energy required to transport it to the construction site. Furthermore, 80% of waste resulting from the construction was diverted from landfills and recycled locally to minimize the project's carbon footprint.

Through the installation of efficient fixtures and implementation of an environmentally

friendly natural drainage system, Emerson was able to take extensive steps to conserve water and protect the surrounding environment from potentially hazardous runoff.

Under Finders' leadership, Emerson was able to meet – and in some cases exceeded – all sustainability goals set for the project. The project initially was projected to achieve a 17.5% reduction in energy consumption compared to conventional data centers. Based on the expectation, Emerson anticipated the project would achieve LEED Silver certification – becoming the first data center in the Midwest to earn the rigorous accreditation. However, thanks to additional anticipated innovation credits and an increased estimated energy savings of 31% at project completion, the facility was awarded LEED Gold certification in 2010. The project also was awarded a “Beyond Green Award” by the Sustainable Industry Buildings Council in 2010, recognizing the project in the “Innovative Solution for a Niche Market Application” category.