First Green Data Center

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LEED certification distinguishes building projects that have demonstrated a commitment to sustainability by meeting the highest performance standards, according to the USGBC. Fannie Mae's Urbana Technology Center (UTC), located in Maryland, is one such facility. However, there is one very significant factor that sets the UTC apart from other green buildings â€” the 247,000-square-foot Urbana Technology Center is the nation's first LEED-certified data center.

In June 2005, after achieving 28 LEED points, the UTC was awarded LEED certification.

Designing a data center to meet LEED requirements set forth unique challenges, not only because there was no model to follow, but also because data centers use a significant amount of electricity and require redundant power sources for operational continuity. It was very important to Fannie Mae to be stewards of the environment and good neighbors.


Designing The Fannie Mae Urbana Technology Center to meet LEED requirements set forth unique challenges because data centers generally use a significant amount of electricity and require redundant power sources for operational continuity.

Energy-efficient systems and IAQ

With this in mind, Fannie Mae and the design and construction team had to be creative in every aspect of the project, from selecting only the most energy efficient systems to recycling construction waste at the project's end. All mechanical, electrical and computer systems selected are rated for maximum energy efficiency. Additionally, after examining the facility's security lighting standards, it was determined that the lighting could be reduced by 50 percent while maintaining the same high level of security, resulting in energy and monetary savings.

Some examples of the energy efficient and environmentally friendly systems and applications designed into the UTC include, building automation / building monitoring systems (BAS / BMS) that monitor, trend, control and adjust the facility's heating, cooling, ventilation and humidification systems, use of non-ozone depleting refrigerants and a selective catalytic reduction (SCR) systems.

Integral to the LEED certification process is maintaining a facility's Indoor Environmental Quality (EQ). A prerequisite in the EQ category dictates that the facility meets the minimum requirements of ASHRAE Standard 62-1999, Ventilation for Acceptable Indoor Air Quality. After this condition was satisfied, points were obtained at the UTC by monitoring the carbon dioxide and providing and maintaining a thermal comfort system that complies with ASHRAE 55-1992, Thermal Environmental Conditions for Human Occupancy.

The air side of the mechanical systems is comprised of Liebert Deluxe 3 Series computer room air handlers and York model XTI air handling units. These units coupled with **Humidifirst DT series ultrasonic humidifiers** and a Johnson Controls Metasys BMS system supply, monitor and maintain a consistent level of temperature and humidification within the facility in accordance with ASHRAE 55-1992. The BMS system permanently supervises and adjusts the humidity levels as required. The temperature and humidity

levels are adjustable depending on the season. Additionally, the Johnson Controls BMS system permanently provides monitoring for the CO2 levels to maintain proper ventilation for occupant spaces. Through use of CO2 sensors in the occupant zones, the BMS