

Press Release

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LEED-certified COPT DC-6 Data Center's green design includes innovative backup power solutions from MTU Onsite Energy

Wholesale data center provider focuses on energy savings, low environmental impact and high reliability.

MANASSAS, Va., January 15, 2013 – Data centers are big users of electric power. Rack upon rack of computer servers can consume up to 300 watts of electricity for each square foot of floor space, which adds up to a lot of electric power consumed every hour of every day, 365 days a year. In addition, servers emit that energy as heat, which then must be removed by the facility's airconditioning system. To ensure customers have reliable service even during a utility outage, data facilities require a backup power system that includes uninterruptible power supply (UPS) systems and standby generator sets.

COPT DC-6 (formerly Power Loft I @ Innovation) is winning in the effort to reduce energy consumption and increase the sustainability of data centers. Located in Manassas, Va., the LEED Gold-certified COPT DC-6 facility incorporates a unique design with sustainable building features that reduce electricity demand and minimize environmental footprint.

COPT DC-6 is owned by Corporate Office Properties Trust (NYSE: OFC), a real estate investment trust (REIT) that develops and owns data centers for security-conscious tenants in the U.S. government and defense information technology industries. COPT is unique in its ability to physically scale in modular increments



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of 50,000 raised square feet and in power increments from 100 to more than 300 watts per raised square foot.

The data center incorporates a number of energy-saving architectural designs that earned the facility a Gold LEED Certification (Leadership in Energy and Environmental Design, a program of the U.S. Green Building Council). Some of these innovations include a reflective roof, building sidewalls covered with green vegetation and a chilled-water cooling system, features that together help reduce energy use by 30 percent over traditional data centers. The standby power system for this facility is also proportionally smaller, saving both energy and construction costs. Early in the design process, the data center selected MTU Onsite Energy as its supplier for standby generator sets. Even its five Hitec rotary UPS units are powered by MTU engines.

“We had used MTU in the past and were happy with them,” said Dave Ruppe, chief technical officer for a COPT subsidiary. “At the beginning of this project we priced all the competitors and found that MTU Onsite Energy offered the lowest installed cost and shortest lead times.”

Unique data center design

COPT uses a two-story design for its facilities, with the raised floor on the second story and the mechanical and air-handling equipment on the ground floor.

According to Ruppe, this design maximizes the amount of floor space that can be dedicated to server rack space and improves the efficiency of the cooling system by 50 percent over conventional designs. “To put this in perspective, our facility in Manassas creates an annual environmental savings equivalent to 270,000 barrels of oil or 571 railroad cars of coal, which is enough electricity to power more than 12,000 homes for one year,” he said.



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In the event of a utility outage, the data center's first line of defense is its UPS system—five Hitec rotary UPS units powered by MTU engines and several static UPS units totaling 9 MW of uninterruptible power for critical loads. The UPS system prevents power interruption during the short time it takes the MTU Onsite Energy standby power system to start itself.

The standby generators installed in the first phase of the facility's construction are located in a mechanical building adjacent to the data center. The installation features the use of remote radiators on the generator sets to realize several benefits. "By using remote radiators, we freed up more space in the mechanical building for switchgear and generators," said Ruppe. "In addition, with the radiators outside the building, we were able to reduce the amount of outside air required for cooling. Lastly, the remote radiators allow the generator sets to start a little quicker because there is no mechanical load from the radiator fan."

Doing the right thing environmentally

As part of COPT DC-6's green initiative, the standby diesel generators that were installed in the first phase were outfitted with selective catalytic reduction (SCR) exhaust aftertreatment equipment. This aftertreatment device significantly reduces the amount of nitrogen oxides in the diesel exhaust, resulting in emissions that are significantly lower than EPA requirements for standby power applications.

"The original standby generator sets were outfitted with SCR, and the most recent phase of standby power is set up to readily accept SCR," said Ruppe. "We did that because targeted government and contractor tenants want to be green, and we want to do the right thing. We intend to eventually operate all of our standby units with SCR, so we've designed all of the generator sets to accept SCR and diesel particulate filter aftertreatment. "



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The four most recently installed generator sets are located outdoors in custom-designed enclosures, according to Bill Pearson, key accounts manager with Western Branch Diesel, the local distributor for MTU Onsite Energy. “These generators are set up so we can easily adapt them for SCR without having to modify the enclosures.”

The outdoor enclosures are also sound-attenuated to 75 dBA and include day tanks, transformers and lighting for easier generator maintenance. Both the generator sets and the enclosures are certified to IBC seismic standards to withstand earthquakes. When a rare 5.2 earthquake hit Virginia in August 2011, the COPT DC-6 facility was unaffected. According to Ruppe, “We didn’t even lose utility power.”

The COPT DC-6 data center expects to add more servers as its customer base grows, and more servers mean the facility’s standby power needs will grow too. In addition to the 24 MW of standby generation installed now, an additional 26 MW may be installed over the next few years, says Ruppe. With the positive experience the data center has enjoyed with their current standby units, there is a strong chance that more generator sets from MTU Onsite Energy will provide backup power to this environmentally conscious facility.



MTU Onsite Energy generator sets back up LEED-certified COPT DC-6 (formerly Power Loft I @ Innovation) Data Center.



The COPT DC-6 data center uses a two-story design with the raised floor on the second story and the mechanical and air-handling equipment on the ground floor to maximize server rack space and improve cooling efficiency.



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One of several 2,500 kW MTU Onsite Energy generator sets that supply critical emergency standby power for the COPT DC-6 data center. More recent generator sets are located outdoors in sound-attenuated enclosures.

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About MTU Onsite Energy

MTU Onsite Energy is a leading producer of diesel-powered generator sets from 30 to 3,250 kW and natural gas-powered generator sets from 30 to 400 kW for standby, prime power and cogeneration applications. The company also provides automatic transfer switches, paralleling switchgear, controls and accessories for complete power system solutions. MTU Onsite Energy is a subsidiary of Tognum America Inc., part of the Germany-based Tognum Group.

www.mtuonsiteenergy.com

About Tognum America Tognum America (formerly MTU Detroit Diesel) is a Tognum Group company and is responsible for the manufacture, sales and support of MTU and MTU Onsite Energy branded products in North and Latin America.

With its two business units, Engines and Onsite Energy, the Tognum Group is one of the world's leading suppliers of engines and propulsion systems for off-highway applications and of distributed power generation systems. These products are based on diesel engines with up to 9,100 kilowatts (kW) power output, gas engines up to 2,150 kW and gas turbines up to 45,000 kW.

The product portfolio of the Engines business unit comprises MTU engines and propulsion systems for ships, for heavy land, rail and defense vehicles and for the oil and gas industry. The Onsite Energy business unit supplies distributed power generation systems carrying the MTU Onsite Energy brand. These comprise diesel engines for emergency power, prime power and continuous power, as well as cogeneration power plants based on gas engines and gas turbines that generate both power and heat. Tognum's product portfolio also features fuel-injection systems built by L'Orange.

In 2011, Tognum generated revenue of around €2.97 billion and employs more than 10,000 people. Tognum has a global manufacturing, distribution and service structure with 24 fully consolidated companies, more than 140 sales partners and over 500 authorized dealerships at approximately 1,200 locations. Since September 2011, Engine Holding GmbH, a joint venture between Daimler AG and Rolls-Royce Group plc, has a majority holding in Tognum.

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