LANTRONIX®

INDUSTRY:

Smart Building

Lantronix Helps Power New Net-Zero Energy Hotel

Success Highlights

- Supports 100% net-zero energy capability
- Keeps hotel operational during power outages
- Reduces energy consumption and costs
- Decreases greenhouse gas emissions

Case Study Overview

With advanced technology contributions from Lantronix and its Authorized Value-Added Reseller (VAR) Sinclair Digital Services, Hotel Marcel is the country's first net-zero energy hotel that operates completely on its energy-efficient DC microgrid. The hotel's renewable energy solution is powered in part by Lantronix's cutting-edge Power over Ethernet (PoE++) switch.

CHALLENGE: Support Creation of a Net-Zero Energy Hotel

The hotel owner had an ambitious goal of creating a model for environmental sustainability by building a net-zero energy hotel that would operate entirely on the energy it creates.

> " To create the net-zero energy Hotel Marcel, we used alternative resources such as the Lantronix PoE++ switch to power the entire hotel, including the lighting and even our window shades. "
>
> – Bruce Redman Becker, FAIA, LEED AP of Becker + Becker and owner of the Hotel Marcel

Challenges included:

- Accommodating a very tight timeline
- Identifying and implementing the most efficient energy technologies
- Retrofitting a 50-year-old historic building

Lantronix SM24TBT2DPB PoE++ Switch

The Lantronix SM24TBT2DPB Smart Managed Gigabit Ethernet PoE++ high-performance Layer 2 managed switch is the only UL-certified switch with true 24x90-watt power and direct high-voltage DC power. It features 52 Gbps switching capacity and complies with the latest IEEE 802.3bt PoE++ standards.

The SM24TBT2DPB can be powered by low-line and high-line AC or DC power and Digital Electricity™ from VoltServer, making it ideal for use in a wide variety of smart building applications. It can provide full PoE++ output on all 24 ports when equipped with the dual hot-swappable PS-ACDC-1200 power supplies or can be configured in "redundant mode," offering 1080 watts of backed-up power.

For more information, visit: https://www.lantronix.com/products/sm24tbt2dpb/

SOLUTION: Lantronix Smart Managed Gigabit Ethernet PoE++ Switch

The hotel's team turned to Lantronix, a leader in delivering high-end Power over Ethernet solutions for smart buildings; and Sinclair Digital Services, experts in delivering sustainable, safer power sources that enable efficiency, cut costs and provide a positive experience for building occupants.

To provide power to support the hotel's renewable on-site energy generation solution, the hotel's team chose Lantronix's Smart Managed Gigabit Power over Ethernet++ (PoE++) switch. The only UL-certified switch with true 24x90-watt power and direct high-voltage DC power, Lantronix's PoE++ switch supports the latest PoE standard, ensuring the highest possible integration with the other smart building solutions. The Lantronix team worked with its partner to customize the PoE++ functionality to ensure that it would meet the hotel's unique power needs.

> " Using Lantronix PoE++ switching solutions, we distributed power and controls through the Marcel Hotel using low voltage DC, which is the best way to create a sustainable Net-Zero building. "
>
> – Hannah Walker, COO, Sinclair Digital Services

RESULTS: Hotel Generates 100% of Its Own Power

Supported by Lantronix's customized PoE++ switch and a smooth and integrated installation by Sinclair Digital Services, the hotel generates 100 percent of its own electricity and energy to power, automate and control all of its electrical systems, including lighting, automatic window shades, heating and hot water as well as the guest room refrigerators.

The country's first net-zero energy hotel, Hotel Marcel is also one of the first Passive House-certified hotels and one of fewer than a dozen LEED (Leadership in Energy and Environmental Design) Platinum-certified hotels in the country.

Hotel Marcel's Renewable Energy Source Keeps Power and DC Microgrid Rolling During Outages

The hotel's renewable energy source seamlessly provides power, enabling the hotel to continue operating without disruption, even when there is a power outage.

For example, during a power outage in June 2021, the hotel's on-site power source and DC microgrid continued to provide energy while it hosted a 150-person event.

Power Outage Event duration: 2h 36 minutes

Energy delivered by the DC microgrid: 516 kWh

Carbon-based fuel consumed: 0

Disruptions to the hotel: 0

Graph view of DC microgrid during the electric grid outage

About Hotel Marcel

Built in 1970 and located in New Haven, CT, the 165-room Hotel Marcel was designed by Bauhaus designer and architect Marcel Breuer, after whom the hotel is named. Originally built as the headquarters of the Armstrong Rubber Company, it subsequently became the Pirelli (tire) Building. Unoccupied since the late 1990s, in 2021, it was converted into the Hotel Marcel. Designated a historical building, it is now part of the Tapestry Collection by Hilton, a group of unique, historical boutique hotels.

About Sinclair Digital Services, Inc.

Sinclair Digital Services, Inc. is an authorized Lantronix Value-Added Reseller (VAR) based in Fort Worth, Texas. Its services include design, consulting, installation and support of traditional and advanced low-voltage solutions for a variety of industries including hospitality and historic buildings. It is located in Fort Worth, TX.

About Lantronix

Lantronix Inc. is a global provider of secure turnkey solutions for the Internet of Things (IoT) and Remote Environment Management (REM), offering Software as a Service (SaaS), connectivity services, engineering services and intelligent hardware.

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