

VOLTSERVER POWERS CUTTING EDGE TECHNOLOGY AT WESTFIELD PUBLIC SCHOOLS



Public schools may not be the first use case that comes to your mind when you think of cutting-edge enterprise technology. The Westfield Public Schools is a K through 12 public school district in Westfield, NJ. There are 10 different buildings across the township managed by a coordinated IT services team. The team has learned that it pays to adopt intelligent, converged infrastructure. The district has been able to save tens of thousands of taxpayer dollars for capital expenses and even more in ongoing operating expenses by implementing an IP based infrastructure. The power backbone of that system is provided by VoltServer's Digital Electricity™ technology.

The district is heavily invested in IoT edge devices including Wi-Fi access points, surveillance cameras, IP phones, door controllers, and light fixtures. By themselves, each of these systems is very costly to implement when you consider the labor costs of using traditional AC power, so the district has utilized Power Over Ethernet



(PoE) for nearly everything. This allows them to easily add or change devices at the edge utilizing IT personnel to modify the power network.

However, there is one major drawback to powering everything from a PoE switch: during a power outage all those edge devices will lose power. This is simply not acceptable for the security and safety of students and staff.

In 2018, the district initiated a project to add emergency generators at each school to provide backup power for the network infrastructure. To support this project, the district would need to add uninterruptible power supply (UPS) systems and electrical circuits to the IT closets to keep the PoE network switches up and running while the generator comes up to speed.

The district looked at implementing local UPS in 40 IT closets with these standalone systems and found that they would be complex and costly to install and maintain. The Westfield technology team studied the configuration, reliability, environmental, rack space, and ongoing maintenance costs of UPS systems.

"Using traditional UPS solutions, routine battery replacement costs alone would have exceeded the initial project cost within 5-7 years." Said Joseph Marateo, Westfield's Assistant Network Manager. "Additionally, these UPS would take up invaluable rack space that would not be available for additional PoE switches in the future."

The final nail in the coffin for this ap-

proach was the added heat load to each IT closet from the UPS. The closet's temperature would either decrease the life of the UPS or an air conditioning system would have to be modified or installed in all 40 locations. Westfield needed a solution that would give the district an alternate power source that is safe, resilient, manageable, and with redundancy capabilities.

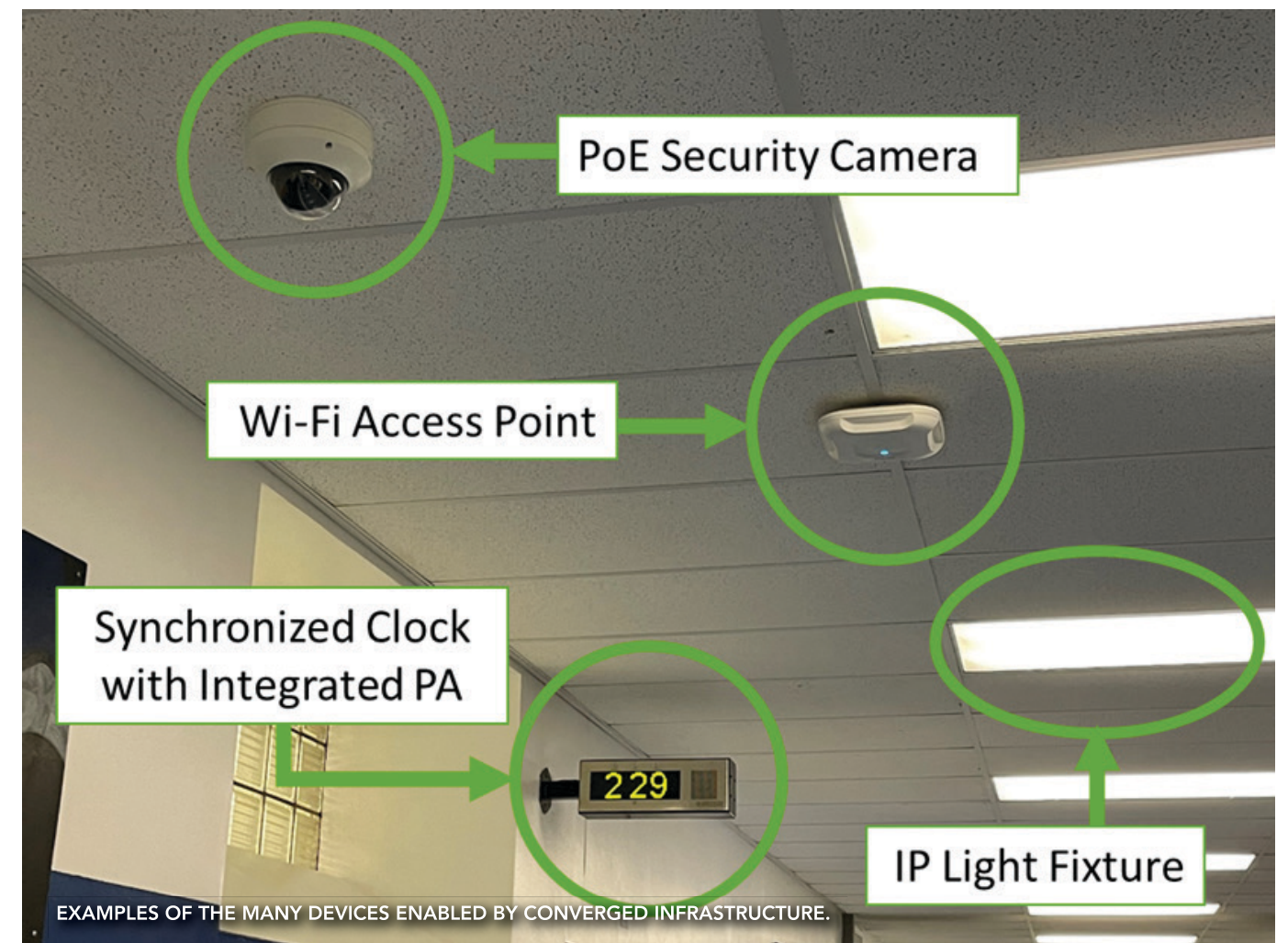
"We needed an installation that could be maintained by the district technology staff, not by outside electrical contractors." Said Arvin Vidal, Westfield's Network Manager. VoltServer's Digital Electricity™ provides a safe, reliable, expandable, energy saving power solu-

tion that runs over 18-gauge cabling at a fraction of the cost of conventional UPS systems on traditional electrical circuits."

Digital Electricity™ has a centralized hub and spoke architecture that reaches

up to 2km allowing the central location to be backed up by a single large UPS, battery plant, or generator. This removes the need for a dedicated UPS in every IDF closet throughout the building

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 – Joseph Marateo, Westfield Assistant Network Manager



where the uncontrolled environments would reduce the lifespan of the batteries inside the UPS. The central UPS is in a climate-controlled environment, maintaining the proper lifespan, reducing IDF rack space requirements, reducing complexity of design. Furthermore, the VoltServer system can be configured to prioritize which loads are powered or not during an outage using a software interface to a building management system (BMS). The system can set priorities for safety critical end devices over other IoT appliances.

“Working with the professional’s at VoltServer has allowed Westfield to provide an efficient and cost-effective solution.” Said Brian Auker, Westfield’s Chief Technology Officer. “Their staff has guided us through the project to ensure that our outcomes far exceed our expectations. VoltServer is one of the top vendors that we have ever had the pleasure of working with.”

With Digital Electricity the district will be able to expand the electrical power plant while reducing our electrical costs to seamlessly deliver power to devices throughout the school district. In conjunction with the generators, it provides an “always on” capability.

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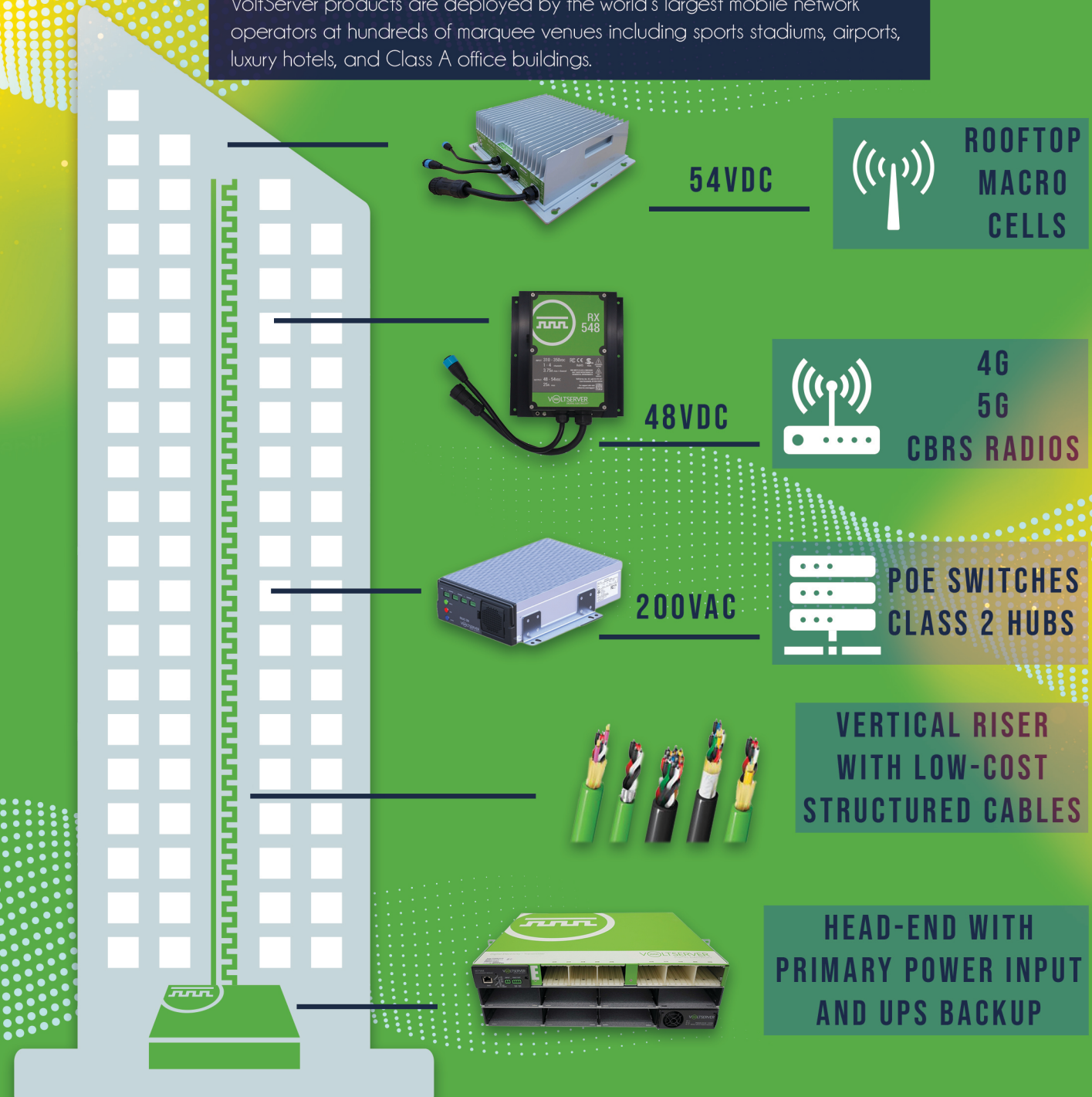


DIGITAL ELECTRICITY TRANSMITTERS IN THE MDF

VOLTSERVER

DIGITAL ELECTRICITY™

Patented Digital Electricity™ solutions deliver cost-effective, high-reliability power where and when you need. VoltServer products are deployed by the world’s largest mobile network operators at hundreds of marquee venues including sports stadiums, airports, luxury hotels, and Class A office buildings.



Digital Electricity™ offers the power capability of traditional AC but the safety characteristics and cost of PoE.