Intelligent Infrastructure Case Study

MHT Technologies

New World Preparatory Charter School
Intelligent Infrastructure Case Study

Project Overview

New World Preparatory Charter School in Staten Island, New York, undertook a major lighting modernization project to create a more efficient, comfortable, and adaptable learning environment. The approximately 37,700-square-foot project introduces intelligent lighting and automated controls throughout classrooms, hallways, and common areas.

MHT Technologies delivered a Power over Ethernet (PoE) lighting infrastructure integrating Inspextor hardware, Cisco Catalyst network switches, and smart controls. The connected system provides centralized lighting management, occupancy-based automation, and the flexibility to accommodate changing educational needs.

Project Details

Project Name: New World Preparatory Charter School

Vertical: K–12 Education

Publication Date: October 2026

Location: Staten Island, New York

Primary Use Case: Intelligent PoE lighting and automated controls for K–12 learning environments

Project Size: Approximately 37,700 square feet

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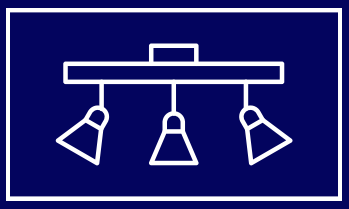
Project Needs

New World Preparatory Charter School required an energy-efficient lighting infrastructure that could adapt to classrooms, hallways, and shared learning spaces. The system needed to provide automated lighting control, centralized management, and greater flexibility while supporting a comfortable environment for students, teachers, and staff.



Intelligent Lighting Controls
Integrate occupancy sensors and wall switches to automate lighting while allowing teachers and staff to make local adjustments.

Energy-Efficient Lighting
Install PoE-powered LED fixtures to provide consistent, efficient illumination throughout classrooms and common areas.

Centralized System Management
Establish a connected infrastructure that simplifies lighting schedules, monitoring, and future system modifications.

Solution & Process

MHT Technologies designed and deployed a Cisco-enabled PoE lighting solution combining Inspextor nodes, intelligent LED fixtures, and smart controls. The network-based system provides centralized management and occupancy-responsive lighting throughout the school.

Planning
Evaluated lighting requirements & developed the PoE infrastructure design.

Deployment
Installed PoE fixtures, Inspextor nodes, sensors, & Cisco network switches.

Commissioning
Configured lighting controls & provided staff training for system operation.

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Project Challenge

New World Preparatory Charter School needed to modernize lighting across classrooms, hallways, and common areas while maintaining flexibility for different educational activities. The project required an energy-efficient infrastructure with automated controls, centralized management, and simplified installation that could support the school's evolving technology needs.

Scope of Work

MHT Technologies delivered a PoE lighting infrastructure supporting 1,081 fixtures across approximately 37,700 square feet. The deployment includes 541 Inspextor node drivers, 150 splitters, 256 occupancy sensors, and 140 smart wall switches, providing automated lighting and flexible classroom control.

The solution utilizes 25 Cisco Catalyst C9300-24H-E switches to provide the power and data backbone for MHT's Inspextor nodes and connected lighting fixtures. Integrated with centralized lighting management, the Cisco network infrastructure supports reliable PoE distribution, occupancy-based automation, and scalable building operations.

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Why Power over Ethernet?

Power over Ethernet (PoE) provides an efficient approach to modern school lighting by delivering power, data, and intelligent control through Ethernet infrastructure. This reduces the need for separate lighting control systems while supporting centralized management and greater flexibility across learning environments.

For New World Preparatory Charter School, PoE created a connected foundation for energy-efficient LED lighting, occupancy-based automation, and intelligent building controls.

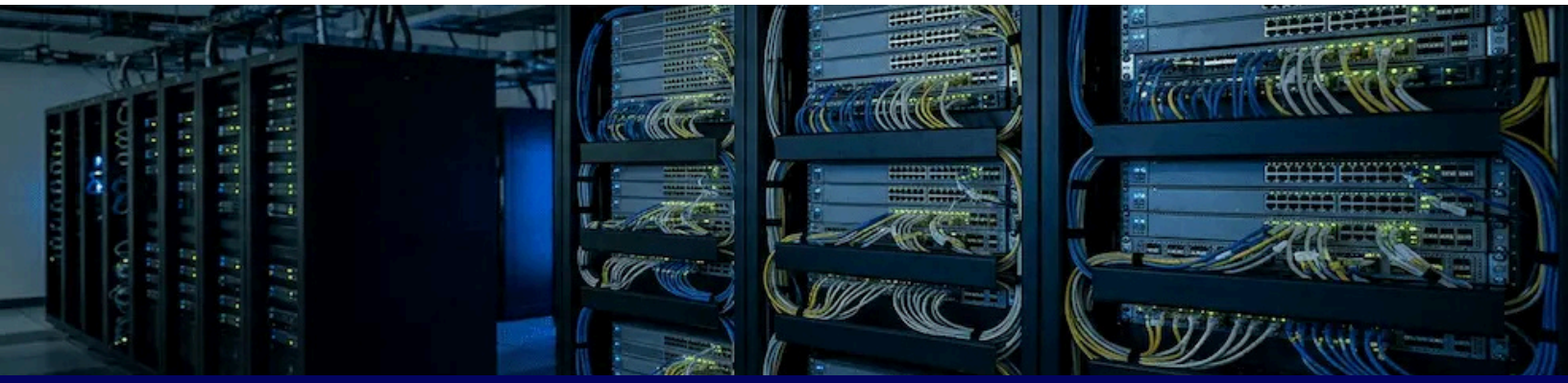
Unified Infrastructure
Lighting, sensors, and controls operate through a common low-voltage network, simplifying system design and deployment.

Centralized Management
Lighting can be monitored and adjusted through a centralized platform rather than relying on isolated controls.

Flexible Control
Occupancy sensors and wall switches allow lighting conditions to adapt to classroom activities and changing educational needs.

Enterprise-Grade Network
Cisco Catalyst network technology provides a reliable foundation for distributing power and data to connected lighting devices.

Scalable Architecture
The network-based infrastructure supports future classroom modifications and additional intelligent building technologies.



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Smart Control & Integration

MHT Technologies' Inspextor hardware supports intelligent lighting control throughout New World Preparatory Charter School, connecting PoE fixtures, occupancy sensors, and wall switches through a centralized infrastructure.

The integrated system allows lighting to respond to classroom occupancy and scheduled activities while providing school personnel with flexible control and simplified management.

- **Real-Time Monitoring:** Monitor connected lighting devices and system performance from a centralized interface.
- **Automated Scheduling:** Configure lighting schedules around school hours, classroom activities, and facility operations.
- **Occupancy-Based Control:** Smart sensors automatically adjust lighting when classrooms and shared spaces are occupied or vacant.
- **Local User Control:** Wall switches allow teachers and staff to adjust lighting based on classroom needs.
- **Software-Based Configuration:** Lighting settings can be modified as classroom layouts and educational requirements change.

Key Benefits & Outcomes:

- Improved learning environment
- Centralized lighting management
- Greater operational efficiency
- Simplified system maintenance
- Energy-efficient lighting
- Flexible, scalable infrastructure

> We made sure that what we were going to build was going to be safe and modern. We wanted to provide comfort to families that their children were safe while they were learning."
> — **Angelo Aponte**, Chairman of the Board, New World Preparatory Charter School

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Quick Facts

The New World Preparatory Charter School project demonstrates how PoE technology can modernize K–12 learning environments. Integrating Cisco network infrastructure with MHT's Inspextor hardware, the school benefits from intelligent lighting, occupancy-based controls, and centralized management across classrooms and shared spaces.

37,700
sq. ft. of educational space

1,081
PoE-connected lighting fixtures

541
Inspextor node lighting controllers

256
smart occupancy sensors

140
wall switches

25
Cisco Catalyst C9300-24H-E switches

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Conclusion

The New World Preparatory Charter School project demonstrates how intelligent infrastructure can enhance K–12 learning environments. By bringing lighting, sensing, and control together through a Power over Ethernet platform, the school established a connected infrastructure designed for comfort, efficiency, and flexibility.

Across approximately 37,700 square feet, 1,081 PoE lighting fixtures, 541 Inspextor node drivers, and 396 sensors and wall switches provide automated lighting and centralized management throughout classrooms, hallways, and shared spaces.

Cisco Catalyst network technology provides the power and data foundation for the school's PoE lighting infrastructure, supporting reliable connectivity and simplified system operation. Occupancy-based automation and flexible lighting controls help school personnel manage illumination around classroom activities and facility schedules.

The project illustrates the value of network-based building systems in educational facilities. By integrating intelligent lighting and low-voltage technology, MHT Technologies helped New World Preparatory Charter School create a more adaptable learning environment with improved operational control and infrastructure designed to accommodate future needs.

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About MHT Technologies

MHT Technologies (MHT) was founded in 2009 with a focus on advancing low-voltage and Power over Ethernet (PoE) solutions for modern buildings. What began as MHT Lighting quickly evolved into a technology-driven organization specializing in intelligent infrastructure that enables connected environments.

Today, MHT delivers PoE hardware platforms, including its Inspextor nodes and controllers, enabling efficient lighting, environmental monitoring, and smart building integration across commercial, government, and enterprise spaces. By combining intelligent power distribution with scalable infrastructure design, MHT simplifies deployment, improves operations, and enhances overall building performance.

Headquartered in Manhattan, MHT operates a 55,000 sq. ft. engineering and manufacturing facility in Staten Island, with ETL and UL certifications and ISO 9001:2015 accreditation. MHT designs and manufactures PoE and line-voltage lighting solutions while supporting clients through engineering expertise, system design, and project delivery.

AKRAM "AK" KHALIS

MHT Technologies CEO & Inspextor Co-founder

"Guiding MHT Technologies is about transcending limits for what intelligent infrastructure can achieve. My focus is on delivering powerful smart building solutions that drive efficiency, elevate performance, and help organizations operate with greater insight and control."

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