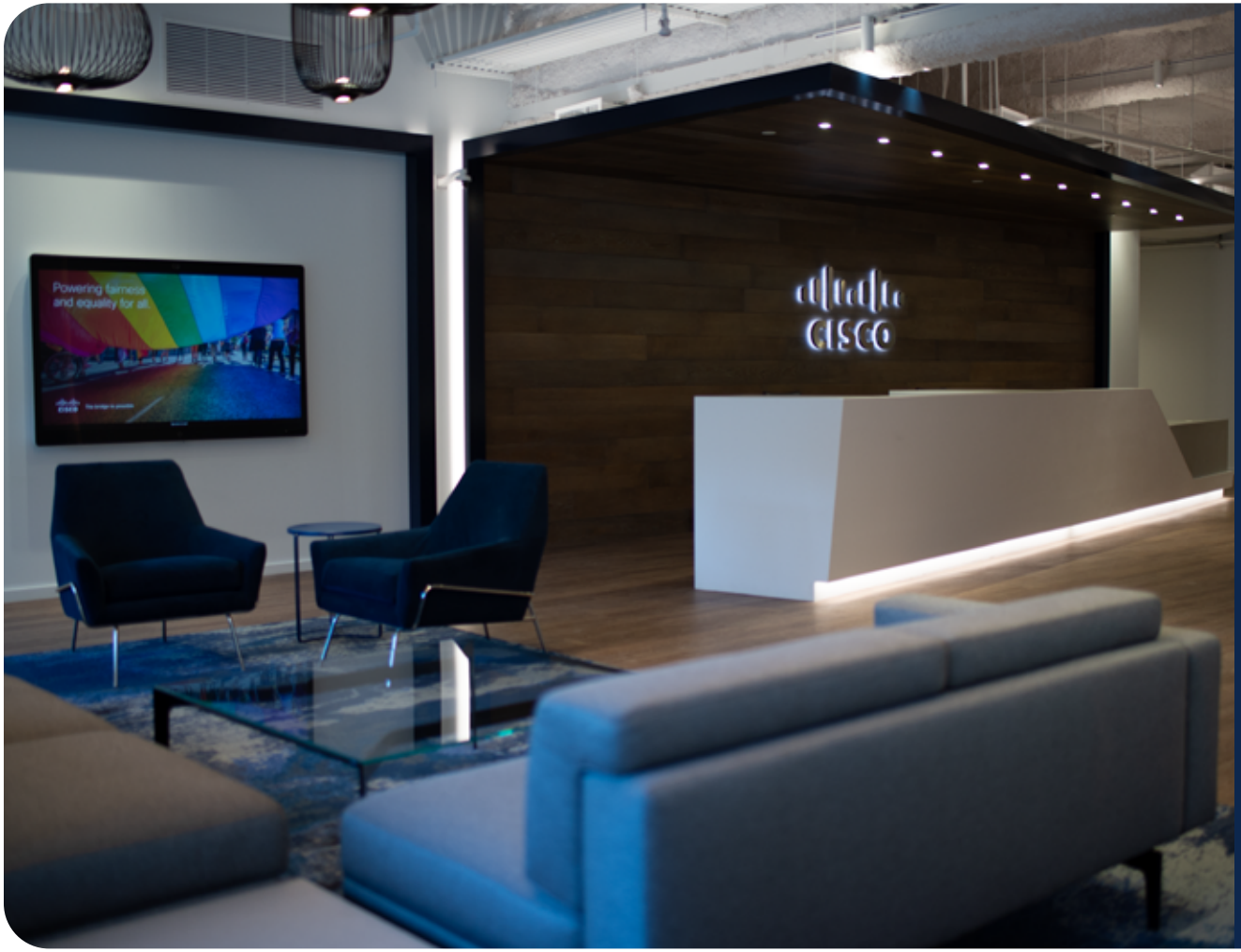
The bridge to possible



The customer summary

Customer name
Cisco

Industry
Technology

Location
New York City

Reinventing the Workplace

Cisco and its partners showcase innovation and sustainability at PENN 1 Plaza in New York City

The bridge to possible

Challenges

- Attracting and retaining talent
- Advancing net-zero sustainability goals
- Digitizing real estate portfolio to provide actionable data and insights

Solutions

- Smart building network with Power over Ethernet (PoE) and fully integrated subsystems, sensors, and controls

Results

- Created a smart building with innovative, fully interconnected subsystems
- Leveraged automation and PoE to reduce power consumption and costs by an estimated 50 percent or more
- Dramatically improved workplace comfort, flexibility, and sustainability

Reimagining real estate

The global pandemic forever altered the dynamics between companies, their workers, and their workspaces. And with countless organizations trying to determine how to best utilize their real estate and support their employees moving forward, Cisco is demonstrating what's possible with the newly renovated, completely reimagined PENN 1 Plaza in New York City.

"People are the most important and valuable resource for every organization. Despite the widespread shift to remote and hybrid work, real estate still plays an essential role in company culture and employee satisfaction and well-being," says Brian McCourt, smart building consultant at Cisco. "PENN 1 represents the intersection of people, space, and technology in a post-pandemic world. It's a model for the future that is being used by our employees, customers, and partners today."

Smart building designs and systems aren't new, of course, but few have been so comprehensively conceived, integrated, and realized.

"The average building has 30 to 36 discrete subsystems, and some of them may drive greater levels of comfort, usability, and sustainability," McCourt says. "But a building isn't truly 'smart' until those discrete systems are stitched together and all working in harmony. Data is the new utility."

PENN 1, a 42,000-square-foot Midtown Manhattan building constructed in the 1970s, was never designed to be smart or data driven. But with a foundational network featuring Cisco Catalyst® 9000 switches and access points, PoE

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Smart Building Consultant, Cisco

technology that provides data connectivity and electrical power for the building's subsystems, and a single interface—Cisco DNA® Spaces—for integrating and visualizing the data from those systems, PENN 1 is showcasing new levels of innovation, flexibility, and sustainability.

"You can't measure and optimize outcomes like air quality, thermal comfort, and natural daylight without data and coordination from many systems and endpoints," McCourt says. "Cisco DNA Spaces aggregates and visualizes all of this data, not only from Cisco solutions like Webex and Meraki smart cameras, but also third-party solutions from partners like Mecho, Igor, and Molex."

Intelligent, automated systems

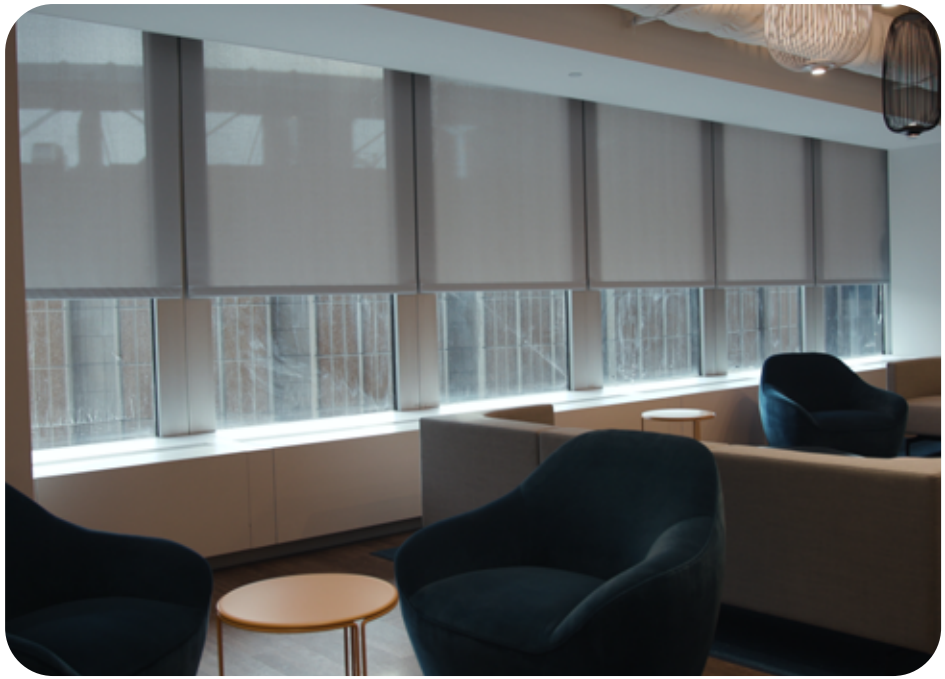
Mecho has been at the forefront of the commercial window shade industry for more than 50 years. The company's founder invented the manual window shade and later designed a revolutionary, software-controlled system that reduced the reliance on electrical lighting by maximizing the use of daylight.

Today, Mecho's cutting-edge window coverings are fully automated and powered by PoE, using real-time data from building sensors and weather tracking systems to continually optimize each environment for thermal and visual comfort.

"The shade system in PENN 1 monitors sky conditions on a minute-to-minute basis, and the position of the shades are automatically adjusted based on cloud cover and solar intensity," says David Robinson, director of automation at Mecho.

Mecho's automated shade system features eco-friendly fabric and quiet, low-voltage motors. It reduces HVAC and lighting system use, power consumption, and cost. And because it's connected to PoE and driven by APIs, it helps minimize PENN 1's cabling, complexity, and carbon footprint.

"The building's occupants are the most important factor," Robinson says. "Maximizing natural daylight without impacting thermal comfort helps increase productivity and well-being."



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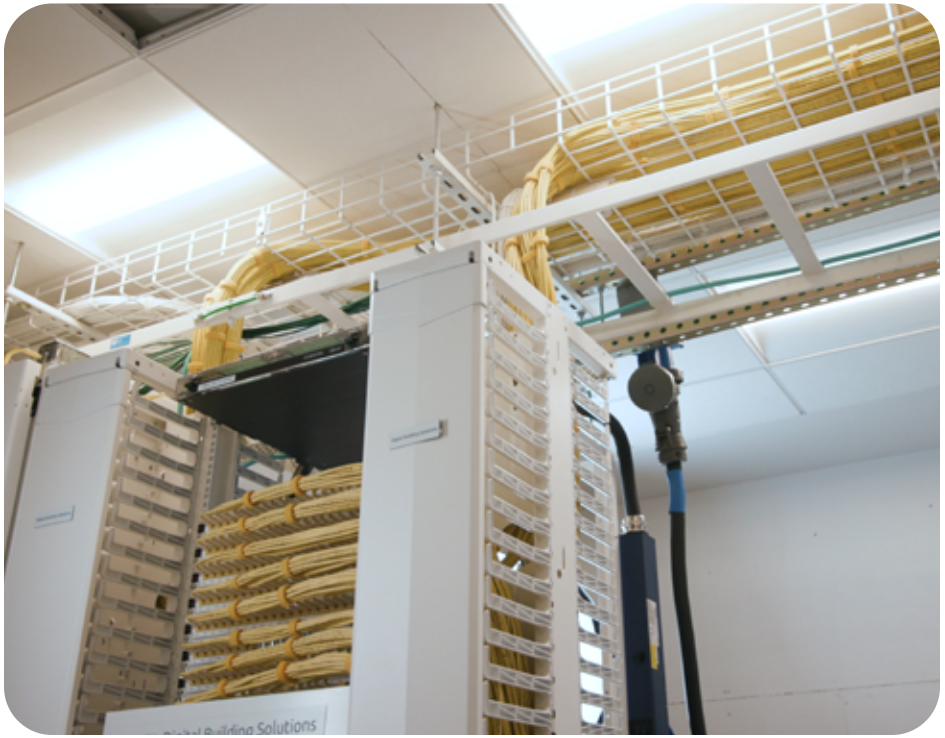
The bridge to possible

PoE-based control

Igor's flagship product, Nexos, is a PoE-based IoT smart building platform that provides a bridge between operational technology (OT) and information technology (IT). It enables macro control of an entire building as well as micro control of the spaces and devices within it.

"It creates a nano grid where every sensor, device, and endpoint is addressable," says Dwight Stewart, founder and CEO of Igor.

At PENN 1, Nexos uses predetermined thresholds, real-time data, and coordination with Mecho and other systems to control the lighting in conference and meeting rooms. It connects touchscreens and voice-responsive consoles in each room with Webex® by Cisco and Cisco DNA Spaces. And it uses sensors to monitor decibel volume and air quality.



"Most spaces overuse things like light," Stewart says. "At PENN 1, we can fine-tune the lighting based on context—whether it's a group meeting, video conference, or presentation—to deliver powerful outcomes."

In addition to improving comfort and productivity, software-defined automation can cut lighting consumption and costs by 50 percent or more, he adds, delivering near-immediate ROI.

"With so many technologies and endpoints in a building like PENN 1, you really need an enterprise-class network to bring it all together," Stewart says. "Cisco is the only option, in my opinion, for deploying these systems at scale. Other network solutions lack sophistication, visibility, and orchestration."

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Giovanni Frezza
Director of Digital Enterprise and IoT Solutions,
Molex

Aggregated, actionable data

Molex is a leading supplier of electronics, electrical and fiber optic connectivity solutions, and IoT applications. Its CoreSync smart building platform leverages the Cisco network backbone and PoE to optimize PENN 1's subsystems and environmental conditions. In addition to controlling and automating the lighting in the building's common areas and workspaces, CoreSync provides an emergency lighting system that removes the need for separate emergency lights and local battery backups. It also delivers a granular sensory network that monitors air quality, temperature, humidity, space utilization, and more. CoreSync and its connected devices are natively integrated with Cisco DNA Spaces to aggregate and visualize subsystem data and manage those subsystems collectively instead of individually.

"Integration across control systems and a distributed sensor network leads to more meaningful data that can be acted upon," says Giovanni Frezza, director of digital enterprise and IoT solutions at Molex. "And with individually addressable devices, there are a ton of possibilities and use cases."

Those use cases extend well beyond increased automation, improved comfort, and reduced energy consumption, he adds. Occupancy data can be used to refine janitorial processes, for example, to reduce cleaning disruptions and costs.

The bridge to possible

"PENN 1 shows how multiple solutions and partners can come together to create a truly intelligent, sustainable, and modernized work environment," Frezza says. "As you walk into the lobby of the building, it's like stepping from the past into the future."

"PENN 1 is the first of several hybrid workplaces we're creating with our partners," McCourt adds. "All of them will help us achieve our long-range goal of net-zero sustainability and our immediate goals of attracting top talent, helping ensure employee well-being, and providing flexible ways to work."

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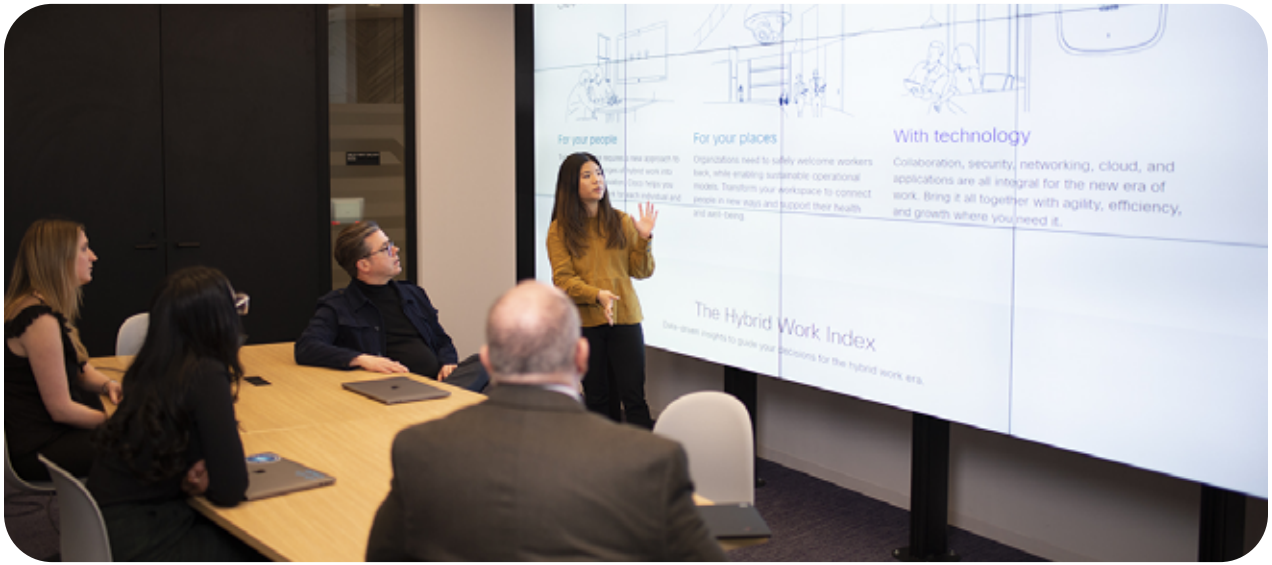

Product links

- Cisco DNA Spaces
- Cisco Catalyst 9000 switches, access points, and PoE technology
- Webex by Cisco
- Cisco Meraki™ smart cameras

Additional resources

- PENN 1 Plaza virtual tour
- Podcast: The Making of Cisco's PENN 1 Plaza
- Cisco Smart Building Solutions