

# Integrating Physical Spaces into the Student Experience >

CoreSync Smart Building Technology helps achieve energy-saving objectives and provide optimal experiences for students and faculty



## CUSTOMER PROFILE

### COMPANY

A renowned education center that serves 18 school districts in the US, with services including career & technical education, programs for exceptional students, and professional development.

### INDUSTRY

Education

### THE CHALLENGE

The goal of the education center is to deliver the highest quality learning experience. As technology evolves, classrooms can become more than simply spaces people exist in while they learn: they can become an integral part of the learning experience. Flexibility is a key element of this plan, enabling spaces to be easily repurposed for different functions or lesson types.

A large CAPEX project looked at the infrastructure of the main campus, to develop ways to integrate the physical space into the student experience.

### THE PRODUCT

Molex CoreSync: including Lighting Control, PoE Gateways, PoE Architectural Troffers with integral Sensors (occupancy, ambient light, air quality); and integral RGBW Indicators for user notification, power and energy monitoring for each light, wireless/battery-less wall switches and low voltage cabling.

### PRODUCT FEATURES

The Molex CoreSync platform enables smart buildings and smart campuses by integrating data from multiple sources into a

central management solution. This can be used to provide building analytics, automate processes, and orchestrate disparate building functions.

The Molex CoreSync PoE lighting system is designed to help achieve energy-saving objectives and provide an optimal lighting experience for occupants. Integrated sensors mean data can be fed back to the management system without the need for additional hardware. This can be used to create automated or reactive programs for lighting or other connected building systems.

The CoreSync lighting system is DLC (DesignLights Consortium) listed, verifying its high level of energy efficiency.

[www.molexces.com/resource-library/case-studies/](http://www.molexces.com/resource-library/case-studies/)

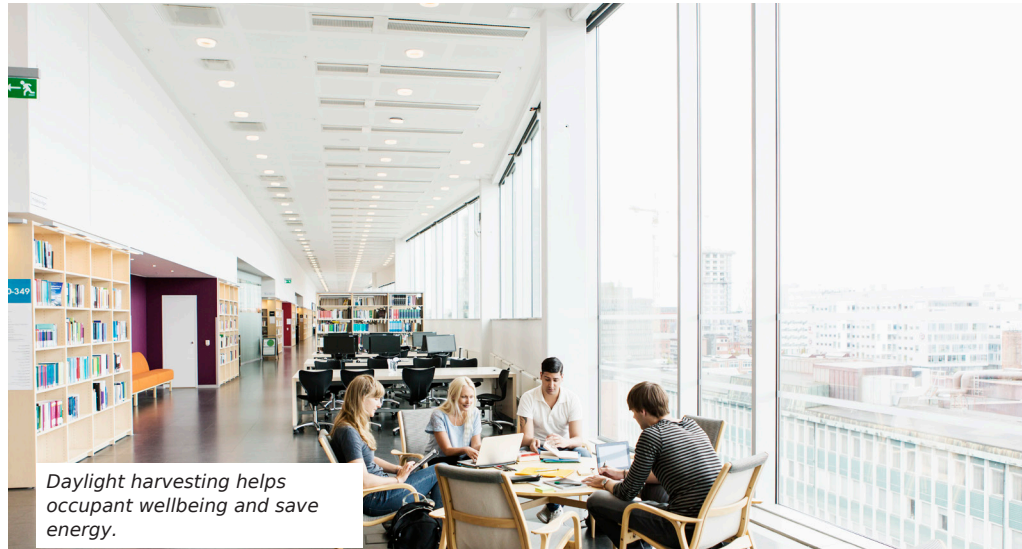
## THE SOLUTION

CoreSync connected lighting was the starting point for system integration. The low-voltage, tunable LED CoreSync troffers feature integral sensor arrays along with power/energy monitoring capability.

### Lighting for energy efficiency and occupant comfort

The CoreSync lighting system is designed to help achieve energy-saving objectives and provide optimal lighting experiences for occupants. Programmable time out/fade out and adjustable profiles, schedules, and presets enable optimal configuration adjustment. Daylight harvesting modulates the brightness to save energy automatically based on ambient light conditions. Local controls enable teachers to customize the lighting depending on the type of instruction, for example tapering light toward a presentation screen, or using cooler tones when focused work is taking place. Additional control features support circadian cycle and biodynamic scenes to create positive impacts and optimal comfort on users and occupants in any ambient light conditions.

Additionally, the troffers feature integral RGBW indicators which are used to notify users of



*Daylight harvesting helps occupant wellbeing and save energy.*

specific events such as test in progress, classrooms/spaces availability, emergency situations and to indicate pathways. This functionality allowed the school district to apply for and receive additional incentives related to security systems, further decreasing the overall capital expenditure.

### Granular data for precise system management

Occupancy sensors enable not only automatic lighting control, but also provide granular mapping of space utilization. This data can be fed back to the management system without the need for

additional hardware. This can be used to create automated or reactive programs for lighting or any other connected building systems. Long term, the plan is to use the sensor network to enable a large number of functions to be controlled either centrally or on a room-by-room basis across the campus. For example, occupancy information provided by the CoreSync could enable audio notifications and visual alerts to be tailored to different rooms or even different temporary uses – reducing the volume of notifications in rooms where exams are taking place, changing color temperature to support different activities, or providing campus-wide alerts. The digital control system allows rezoning and regrouping of CoreSync digital devices via software user interface with few clicks.

### Low voltage infrastructure for cost and time savings

The entire CoreSync system is deployed on a PoE backbone, which uses a category cabling infrastructure for both power and data connectivity. Using PoE eliminates the need for high power wiring, resulting in a significant reduction in the time and cost of installation and commissioning. The safe,



*The education center aims to deliver the highest quality of training and education, integrating technology into the learning experience*

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low voltage system has allowed the school to use the project as technology learning experiences for selected students who were able to experiment and contribute during the project deployment phase. The infrastructure in place offers a future-ready approach so that additional applications and disparate building systems can be easily integrated at a later date.

CoreSync troffers feature low-power LEDs, helping the center meet its energy saving objectives and enabling the system to qualify for incentives offered by the city and the utility program.

### Self powered switches

Not all CoreSync devices require a hardwired connection and self-powered wall switches were installed to provide local control for each room. With no wires and no batteries these wall switches are easy to install, providing additional functionality with minimal cost.

Each wall switch connects wirelessly via a CoreSync wireless Gateway. With a range of about 50ft, each Gateway enables multiple devices to be connected on a single node.

### WHY CORESYNC?

Molex CoreSync solution was chosen for this project because the advantages of its PoE-based technology and the level of integration and functionalities. Additionally, CoreSync offers a ecosystem of partners that can provide a wide range of devices and products. Other building systems can be integrated via API, enabling building management to be streamlined and simplified.

The education center cited strong brand recognition of Molex as an important factor, with excellent technical and customer support and a clear product development roadmap. Smart buildings are a rapidly developing technology which often requires a collaborative approach to develop the solutions needed. The center required a supplier who would work with them to deliver a system that would not only support their immediate requirements but also provide the platform for their forward-thinking long-term plans.



Examples of CoreSync dashboards, showing a range of data visualization options

