Customer Success Story:
Booth Lane Campus, Northampton College

Market segment
Buildings

Eaton's Adaptive Evacuation Exit Signage Ensures Student Safety for Northampton College

Location:
Northampton, UK

Challenge:
Replace existing escape signage with adaptive luminaires which will safely direct students and staff away from danger in a complex and large building. The system needs to work with an existing fire panel and alarm system.

Solution:
Eaton Matrix escape sign luminaires

Results:
Eaton's Matrix luminaires change their signage in response to signals from the existing addressable fire alarm system so that students and staff are directed away from dangerous areas towards safety. Additionally, the LED system reduces the college's energy consumption and costs.

"The Eaton escape sign luminaire with Matrix technology works seamlessly with the existing addressable fire panel system to change its signage in response to a local alarm. For such a large building housing so many students and staff, having an adaptable system that can alert people to where the danger is and direct them to safety is essential."

Chris Thorneycroft, managing director, Thorn Electrical

Background

Northampton College is the leading provider of further education in the South East Midlands, UK. It offers a broad range of full and part time courses, apprenticeships and higher education to 9,000 students across three sites.

Its largest site, in Booth Lane, Northampton has almost 4,500 students. This campus consists of eight large blocks, each with up to three floors, all of which are interconnecting into one huge building complex.

Challenge

With student safety a top priority, the college must ensure students and staff can safely exit the building without putting themselves in any danger in the case of an emergency evacuation, such as a fire.

This complex building features many separate rooms and corridors, all of which are interlinked. The college identified that the Booth Lane site needed a fire alarm system that could adapt its emergency signage according to where there was an alarm or emergency. This would ensure the people in the building evacuate safely and do not inadvertently enter a dangerous area.

The existing addressable fire safety system was installed more than ten years ago. It consisted of a main fire panel which connects to eight local fire panels in each of the different site blocks. These sub fire panels then connected to fire alarms, smoke detectors and the escape signage. All the devices were connected via a twisted pair bus cable.

If an alarm was to go off in part of the campus, the fire panel in that area would switch the old signage luminaire leading into that block from an arrow to a red cross to visually warn people against entering the area. All other directional signage would remain the same to direct people to safety.

The problem the college faced was that the existing signage luminaires were old, and they could no longer source spare parts for them when required. They also relied on their emergency batteries for illumination if it switched its signage – something that legislation no longer allows.

This meant that the college had to find modern escape signage luminaires that they could retrofit onto the existing system and still offer the same or improved functionality. Additionally, all of these requirements had to be completed during the three weeks holiday when there was no one on site.

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Solution

The estates office for the college approached local mechanical and electrical contractor, Thorn Electrical for the refurbishment. Working with wholesalers Midshires Electrical and Lighting, the company approached Eaton to discuss a solution.

Following detailed discussions, Thorn Electrical decided to trial Eaton's escape sign luminaire with Matrix technology, which enables the signage to change in response to a signal. The company retrofitted two of the luminaires into the old fire panel system using its existing twisted pair cable and mains power wiring.

Using a switching contact at the luminaire, the team found that they could change the sign from a directional arrow to a red cross in response to a signal from a fire alarm or a smoke detector from the existing system without any problems. This meant that the college could use the new signs to either direct people to a safe exit route or block an unsafe route.

Results

Following this successful trial, Thorn Electrical installed 45 of the new Eaton Matrix escape sign luminaires throughout the campus in each of the eight zones. Using the existing twisted pair cabling and power mains from the old signage, the company fitted and fully tested all the luminaires in the short time frame available.

Chris Thorneycroft, managing director at Thorn Electrical commented: "The Eaton escape sign luminaire with Matrix technology works seamlessly with the existing addressable fire panel system to change its signage in response to a local alarm. For such a large building, housing so many students and staff, having an adaptable system that can alert people to where the danger is and direct them to safety is essential."

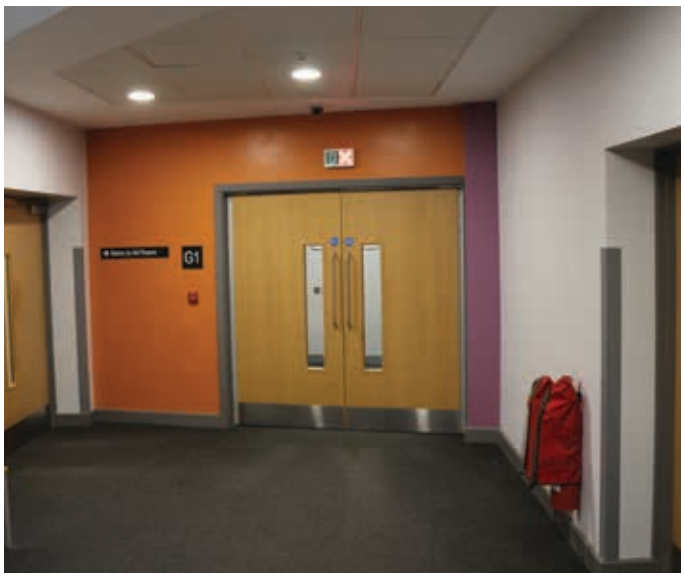
Each of the luminaires is backlit using LED lighting and has a lithium ion battery with a selectable operating time of one or three hours in the event of a mains power outage, and there is also a simple fault analysis and status display via a bicolor LED. The signage provides a very high service lifetime with minimal maintenance and very good visibility with a high luminance of its white contrasting color of greater than 1000cd/m2. This is important to clearly highlight escape routes in some of the long corridors and large rooms within the campus, especially if there was smoke in the rooms.

The old escape sign luminaires were backlit using four fluorescent tubes, which means they would require the lamps to be replaced regularly and they used significantly more power.

The result is a safer and brighter escape sign luminaire that can change its signage according to the situation and provide a safe route for all on site in the case of an emergency. Additionally, there will now be less energy consumed, and far less maintenance than what was required by the old system.

The system can also be upgraded with the addition of modules and data cabling as part of Eaton's CGLine+ system. This would allow remote testing of the escape sign luminaires without a walk test and clear status updates via a PC and other scalable upgrades in the future.

Pat Brennan-Barrett, principal of Northampton College, said: "The Booth Lane campus is a very complex building that often has thousands of people onsite at once. We have always taken safety very seriously and continue to carefully consider how we would safely evacuate the building if there was an emergency. The Eaton Matrix escape sign luminaire ensures that we can direct people away from danger and towards a safe exit. We're very pleased with this new system which ensures even greater safety for our students and staff."



Eaton Corporation
EMEA Headquarters, Route de la, Longeraie 7, 1110 Morges, Switzerland
Eaton.com

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