Case Study

Laurus Trust Schools

Laurus Cheadle Hulme High School

Project Outline

Contractor	BAM Construction Northwest
Location	Greater Manchester, UK
Sector	Education
Disciplines Covered	• Fire Alarm • Lockdown Systems • Emergency Voice Communication
Key Points of Interest	• 1,659 sensors across 3 new build schools • 3 Lockdown systems • 175 Fire Alarm Interfaces

Project Overview

The Laurus Trust is a Multi-Academy Trust predominantly based within the Greater Manchester area. The trust consists of seven schools which are: Cheadle Hulme High School, Laurus Cheadle Hulme, Laurus Ryecroft, Didsbury High School, Hazel Grove High School, Gorsey Bank Primary School and Cheadle Hulme Primary School.

In 2017 the Trust along with the Education and Skills Funding Agency (ESFA) selected BAM Construction Northwest, based in Salford, to deliver the Laurus Cheadle Hulme, Cheadle Hulme Primary School and Didsbury High School with the contract valued circa £40 million. BAM later went on to secure the Laurus Ryecroft school as part of the scheme, with the schools opening between September 2018 and March 2020.

The Challenge

The challenge for the Laurus Trust group of schools was to provide a full turnkey solution for various life safety systems at the three schools. All systems provided would have to meet current British Standard recommendations for the fire alarm and emergency voice communication (refuge alarm) systems as well as taking into account any value engineering solutions where possible, so as to ensure costs stayed within the contract budgets.

The Solution

Fire Alarm - The scheme called for a BS5839-1 L2 compliant system. The fire alarm systems of the 3 No. schools all benefitted from the new 6500 main fire alarm panels being provided with “open protocol” capabilities. The fully Digital Addressable panels would offer the display, control and monitoring of the 6000PLUS series fire alarm devices fitted throughout the schools. The field devices were made up of digital addressable multi-sensors, heat sensors, beam detection, fire alarm interfaces, voice enhanced sounders and visual alarm devices.

At the tender stage, Protec identified multiple value engineering solutions whereby a detailed upfront fire alarm system design could cut the overall installation costs. Solutions such as using the fire alarm system to indicate the intervals between classes by adding a timer to the fire alarm system (i.e. Class Change). As the systems utilised the Protec 6000PLUS series Talking Sounders, this enabled the class change signal to use the 'Bell Tone' sound within these devices thus replicating the sound of a real bell in a class change period. With Protec installing a fully digital addressable fire alarm system, this negated the need for providing remote indicator units, as the text on an addressable system shows the location of a fire or fault on the main fire alarm control panel for integration by the fire service, maintenance engineer or designated competent person.

Lockdown Systems - are becoming popular within the education sector. Sadly, this is due to the growing number of events that could impact on the safety of pupils and staff. The lockdown system is a means to alert staff of an incident without causing undue distress to the pupils.

In this case, Blue manual call points are installed within strategic locations in the schools, connected directly on the fire alarm detection loops. Upon activation of any blue manual call point in a “lockdown”

event, this then activates the coded message to alert all members of staff so that they can implement the correct lockdown procedures.

The National Counter Terrorism Security Office (NaCTSO) guidelines, make a note of stating "use of fire alarms should be avoided to reduce incorrect response to an incident." This statement is down to fire alarm tones being confused with the tones which could be used for a lockdown scenario. Protec overcame this problem by using their Talking Sounder range of fire alarm devices. The system provided enables various messages to apply for each of the different types of scenarios, reducing the risk of confusion. For these projects, the Fire ALARM is via a warble preamble followed by "*Attention please, attention please, Fire has been reported in the building; please leave the building immediately by the nearest exit*." The lockdown scenario would be initiated via a pulse preamble followed by "*May I have your attention please; an incident has been reported in the building, please listen for further instructions*". And finally, the class change is via a “Bell” tone which is a recorded message that replicates the sound of a traditional type bell.

By utilising the fire alarm system infrastructure for providing the lockdown feature, the system installed became part of a value engineered solution for the client. The use of the fire alarm system with the additional devices would mean a dedicated system for the lockdown system would not need installing; thereby, saving costs for the client.

Emergency Voice Communication (Refuge Alarm) is a system which is used in an evacuation scenario to assist building management and the emergency services with the safe evacuation of the building. The refuge intercom system offers a secure temporary “refuge” area for those pupils/staff/visitors requiring assistance to evacuate to a ground level via stairs so that they are able to safely await and communicate to the emergency services during a building evacuation. The systems across the schools offered two-way voice communication between the outstations at the dedicated refuge points and the main emergency voice communication control panels. The fire & rescue service would use the main emergency voice communication control panels, these are located at the main point of entry to the building for ease of access in an emergency scenario. Protec offered a fully compliant BS5839-9 system across the 3 No. sites a total of 5 No. 16-way main control panels and 21 No. refuge outstations. A further 20 No. accessible toilet alarms were installed in the accessible WC's and linked into the refuge alarm system across the 3 No. sites as part of a value engineered solution to incorporate the toilet alarms and refuge alarm into one complete system. By combining these two systems, this reduced the costs of having a dedicated system for each.

The Aftercare

Since completion of the 3 No. school sites within this scheme, the Laurus Trust has taken out a PPM service contract with Protec to ensure that the systems stay correctly maintained and operational for years to come.