

ADT: National and Local

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Wellington College

Protecting students, staff and premises from the risks of fire.

Wellington College was founded by Queen Victoria and Prime Minister The Earl of Derby in 1859 as the national monument to Britain's greatest military figure, the Duke of Wellington. Today, Wellington College, one of Britain's most historic and famous independent schools, is a vibrant and popular co-educational boarding and day establishment where girls and boys learn to be leaders for life.

The school comprises a large complex spread over an area of more than 400 acres in the Berkshire village of Crowthorne, with a variety of environments. These include, amongst others, 16 boarding residences, a number of kitchens, a theatre, sports halls and a library. With so many different environments and over 900 students and members of staff, protecting premises and occupants from the risk of fire is a complex and challenging task.

For further information on how ADT can help you, contact your local ADT Fire and Security office or phone free on **0800 010 999** or visit us at www.adt.co.uk

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Every year hundreds of millions of pounds are invested in education. It is essential to protect both that investment, and the people who use it.



Sleeping accommodation - a specific set of fires risks and challenges

Statistics show that slow, smouldering fires are the most common type of fire in this type of environment. After a long day of studying, this is the time when carelessness with electrical apparatus can lead to smouldering fires. It is these fires that are responsible for over 80% of all deaths from fire, mainly due to poisoning from Carbon Monoxide (CO) which is produced in large quantities early on in the combustion process. Traditional smoke and heat detectors fail to detect this type of fire early enough, with the risk that students and other occupants – especially at night when they may be deeply asleep - can quickly be overcome by fumes, unable to raise an alarm themselves or to make it to safety.

Corridors and escape routes are another area where smoke detectors may not activate for a considerable length of time if the seat of the fire is in an adjacent bedroom. The smoke plume will be restricted in movement, smoke which escapes into the corridor will cool and fall, failing to activate the detectors. By the time an alarm is raised the amount of smoke within the escape route will deter attempts at evacuation and keep people in their rooms within an area of high danger.

Gerald Burbidge, Works Bursar at Wellington College, comments: 'Being able to detect the Carbon Monoxide given off during the early stages of a fire provides the means to raise an alarm long before other traditional heat or smoke detectors, crucial to taking opportune measures to extinguish or to evacuate the building, and thus minimising life risk and damage to property'.

The ultimate in fire detection technology

Wellington College fully recognises the fire risks associated with sleeping accommodation and has taken all the necessary precautions to provide its boarding residences with the highest level of safety. The system is fully compliant with the requirements of Category L1 of BS5839, the highest form of fire protection, required in sleeping accommodation.

Over the past 6 years, ADT and Wellington College have worked together to upgrade the fire systems in all 16 boarding houses to incorporate Carbon Monoxide fire detection which is ideally suited to sleeping accommodation. At Orange House for example, one of the college's 16 boarding houses, 31 3oTec detectors have been installed by ADT providing security to its residents. 3oTec detectors take the advantages of the three most advanced detection methods (Smoke – Heat – CO) and combine them into a single point detector. Weaknesses associated with any one sensing element are eliminated through the combination of the three elements. The 3oTec technology also offers economical benefits as using one unique detector instead of 3 separate detectors creates a significant cost saving and reduces wiring costs and installation time.

Ray Puttock, Fire Product Manager at ADT, comments: 'The combination of the three elements of detection, the reliable data transfer to carry signals to a controller, and intelligent algorithms to interpret the data and make decisions are all built into the Minerva MX fire system installed by ADT at Wellington College, keeping false alarms down to a minimum.'

Reducing false alarms in accident-prone environments

A great advantage of using CO detection is its resilience to unwanted alarms. Whilst not completely immune, CO fire detectors offer a high resistance to potential sources of false alarms and this makes them ideal alternatives to heat detectors, often with enhanced performance over that of smoke detectors. In the boarding residences' and sports halls' bathrooms, for example, where hot steam from showers and baths are likely to trigger false alarms from smoke or heat detectors, Carbon Monoxide detectors have been installed instead, providing resilience to false alarms.

In kitchens, the main risk of fire is from the cooker, toaster and other electrical apparatus. This type of area is one of the main contributors to false alarms especially when protected by optical smoke detectors, as burnt toast or overheating of food will unnecessarily trigger an alert. It is for this very reason that Wellington College has installed heat detectors in the boarding houses' student kitchens, and in the main kitchen in the central building.

In the college's theatre, where theatrical smoke can be a problem for traditional smoke detectors, a VESDA system has been installed which allows individual detectors to be easily deactivated during a performance so as to avoid unwanted alarms. The aesthetic requirements of the building also posed a challenge to conventional fire detection; VESDA provides concealed smoke detection while maintaining critical early warning.

In the event of a fire, the relevant personnel can be quickly alerted.

Of course, fire detection is only the first step in a fire strategy. Wellington College uses the networkable Minerva MX technology from ADT to link the various parts of the college back to the Porter's Lodge, where the appropriate personnel can easily identify the location and nature of the fire on the MX display panels, and get the right level of help on the way, at once.



At night, when the Porter's Lodge may be unattended, the system is linked to ADT Alarm Receiving Centre where the alert is verified and the local fire service alerted within 30 seconds. The MX fire panels assist fire fighting with on-screen risk management information such as smoke density and temperature readings.

In the event of a fire, the sounders are automatically activated to urge occupants to exit the building. The system also causes a number of pre-determined doors to close, thus isolating the fire and protecting the escape routes, allowing extra time to exit the building. This is particularly important when considering that optimum compartmentation of a fire is estimated to give an additional 30 minutes to allow evacuation of a building. Exit doors, however, automatically open enabling occupants to quickly step out of the building.

Gerald Burbidge, Works Bursar at Wellington College, comments: 'Getting the best fire protection is key to the safety of our pupils, staff and residents; creating an environment in which its occupants are free to concentrate on their school day without the unnecessary disruption caused by false alarms is equally important'.