The Monitor

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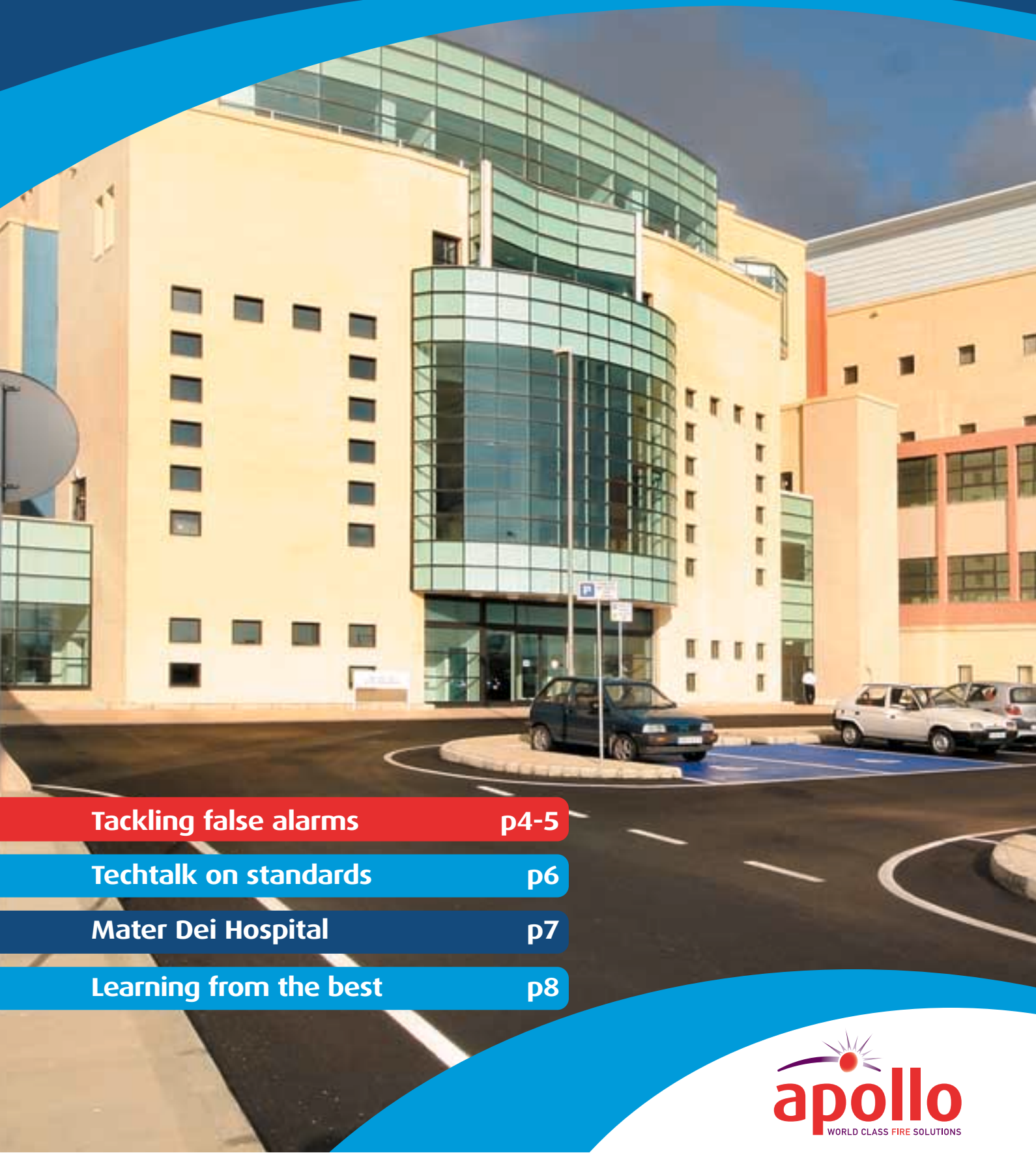

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WORLD CLASS FIRE SOLUTIONS

Burning issues

Jeff Cutler,
Head of Technical Services

The eradication of false alarms has long been a common goal for the fire industry. They cause disruption, are a drain on fire service resources and can impair the safety of occupants who may not act correctly if the fire system regularly false alarms. As the leading smoke detector manufacturer in the world, Apollo takes false alarms very seriously.

There are many different causes of false alarms, from poor system design and maintenance to change of use, to the fire sensor being inappropriate for the environmental conditions it is likely to experience. Consequently a whole range of measures are required to reduce the likelihood of false alarms.

For instance, it's important to have a good understanding of different fire detection products and their correct application. Checking that products hold the right approvals is also invaluable and our TechTalk column on page 6 has some important news in this area. These are described in detail in section 3 of BS5839-1:2002.

Product design is another way of reducing false alarms and a summary of the different ways in which we've built false alarm reduction into our products appears on the centre pages of this issue.

The message is clear: Apollo has already had significant success in combating false alarms and continues to research and develop new technologies that will make fire systems less vulnerable to non-fire triggers, such as steam, so that our customers can deliver world class fire detection solutions.

NewsBytes

HAVE YOU GOT ONE YET?

A new Product Catalogue has been published by Apollo and all our regular customers should have received their copy, together with our new price list. If you haven't yet seen a copy and would like to receive one, please fill in the Reader Reply card and send it back to us.

AWARDS NOMINATION

Apollo has been shortlisted for two categories in The (Portsmouth) News Business Excellence Awards: Business of the Year and Exporter of the Year. The results will be announced at the end of January 2008. Fingers crossed!

YOURS FREE

A guide to meeting the requirements of BS5839 Part 1: 2002 is available free from Apollo. A handy pocket size, the guide uses illustrations and brief captions to summarise the essential facts and also contains references to the relevant parts of the guidance for easy cross reference. To obtain a copy, just tick the box on the Reader Reply card.

Cover Story

Over 13,000 Apollo fire detection devices have been used to protect the Mater Dei Hospital, Malta. Michelle Agius, Sales & Marketing Director at Apollo, comments: “Apollo prides itself on being at the cutting edge of fire detection technology and providing world class solutions for its clients. The Mater Dei Hospital is the largest hospital project in Europe, taking six years of hard work to complete. With complex fire detection requirements, it is a real honour for us to work with our local partner, Alberta Fire & Security, to provide a fire solution of comparable prestige.”

Full story on page 7.

Scotching false alarms

Heriot-Watt University in Edinburgh, Scotland has specified Apollo's proven Discovery multisensor to eliminate nuisance alarms being caused by steam in bathing and cooking areas in accommodation blocks. The new Apollo fire detection system was supplied, installed, commissioned and maintained by Safe Services.

The university’s old fire system was addressable with conventional heads and there was a lack of tolerance, causing false alarms, which needed to be addressed. The fact that it was a closed protocol system was also a major factor for the upgrade.

Two separate accommodation blocks on the campus, both of which comprised three storeys and one of which was self-catering, required a fire system upgrade. The two buildings house around 200 students and more than ten staff in total.

The most likely sources of nuisance alarms are the shower rooms, where steam could give a false reading, and kitchen areas where transient levels of smoke or steam from cooking are a common occurrence. In addition, each of the bedrooms is equipped with its own sink so there is a potential source of steam-related incidents in those as well.

Safe Systems installed new fire detection systems in each accommodation block that incorporate over 550 Discovery devices in all, of which approximately 400 are multisensors. Both fire detection systems incorporate interfaces to page staff to alert them in the event of an alarm sounding and the evacuation procedure is one-out, all-out.

Graeme Millar, Senior Fire Engineer, Safe Services, concludes: “We completed work on the campus in May 2007 and the Discovery technology has certainly improved things for the students and the staff. Going forward, as the fire system is now based on Apollo's open protocol rather than being a closed system, it can easily be upgraded or added to in future with minimal disruption.”

Apollo Fire Detectors offer a whole host of features to help our customers minimise the causes of false alarms.

True or false?

VOYAGE OF DISCOVERY

Apollo's Discovery range of high-specification, intelligent fire detectors has been developed for installations where adaptability to changing conditions and protection against unwanted alarms are of paramount importance. All detectors in the Discovery range are equipped with inbuilt drift compensation, a non-volatile memory and fail-safe operation. However, it is the inclusion of a multisensor in the range that really gives Discovery-based fire systems their flexibility.

Apollo's Discovery Multisensor is equipped with an optical smoke sensor and a heat sensor and offers five approved operating modes that are selected by the system designer or commissioning engineer via the control panel. It can be selected to operate as a smoke detector only, a heat detector only, or as one of three combinations of both. If an "in combination" selection is made, the signals from each sensor are considered in relation to each other. The Discovery Multisensor is certified to EN54 standard in every one of its five operating modes and its reliability in the field in reducing nuisance alarm incidents has been proven over several years.

CONVENTIONAL WISDOM

Apollo's Orbis range of conventional fire detectors has false alarm reduction built in. All Orbis detectors feature our patented DustDefy system, designed to keep dirt out but allow air to circulate freely for accurate readings. They also feature drift compensation and a transient rejection feature to filter out temporary high readings.

Orbis optical smoke detectors are as sensitive to black as to white smoke, enabling the detector to be calibrated to a lower sensitivity setting. This means they are very reliable at detecting fires, but much less likely to generate false alarms.

The Orbis standard base is designed for ease of installation, including three fixing centres, a locking mechanism, continuity link and even a guide to the length of cable to strip. All of these features reduce the likelihood of human error - a major source of false alarms.

REDUCING THE ODDS

False alarm incidents can be greatly reduced by matching the right product to the right application. Apollo's AlarmSense range has been specifically developed to address the issues surrounding fire detection in houses of multiple occupation (HMOs).

Devices in the range feature patented technology such as RemovAlert™, which informs the control panel if a detector is removed from its base and reduces incidents of malicious interference. Among the alarm devices is a Sounder Base that can be wired to the same point as a detector and is capable of sounding a local alarm so that an incident in one dwelling, such as burning toast, can be dealt with by the occupant without raising a general evacuation.

Because of its patented two-wire technology, the AlarmSense range of products must be used with a control panel specifically designed to be compatible with the range. Full details of AlarmSense compatible control panels and Apollo false alarm reduction technologies are available by contacting Apollo's Technical Sales Department on 02392 492412 or by visiting www.apollo-fire.co.uk

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Techtalk

Always check that standards apply to all the settings of a fire detector, advises our technical team.

Fire detectors that allow different settings to be selected to accommodate localised environmental conditions are a major weapon in the fight against false alarms.

Apollo's Discovery Multisensor is one example. It combines an optical smoke sensor with a heat sensor and uses algorithms to combine the smoke and temperature readings to give a rapid response to a wide range of fires. This technology can also be designed to reduce the incidence of false alarms in circumstances where high levels of steam or cooking activities are identified as a risk. This technology has been available from Apollo for over 10 years and is proven in the field to achieve both goals.

More recent additions to the market not only offer a choice of settings but also claim to differentiate between smoke and steam - ignoring the larger water vapour particles altogether.

This may sound impressive, but steam is generally a very short lived phenomenon and can easily be rejected safely and reliably with the techniques used in Discovery mode 4 operation. Steam has a very strong signal which generally swamps the optical sensor; it cannot discriminate between smoke and steam in this, quite common, case. Reducing false alarm incidents is one thing but we don't want a device that may ignore a genuine fire.

One means of ensuring that devices will perform appropriately is to check that they are approved to the relevant standards, such as EN54. However, with devices which operate in different modes it is crucial to ensure that the appropriate standard applies to every one of these settings. A good reference for approved modes when using UK-approved devices is the Red Book published by the LPCB (www.redbooklive.com).

When only some of the operating modes are approved there is a temptation to use an unapproved mode to solve a siting problem. This could lead to the device being less effective than required by the European Standards and should only be specified by an experienced system designer. Use of an unapproved mode generally needs to be covered by a variation clearly identified in the system design documentation otherwise it could lead to the device invalidating insurance cover in the event of a fire. This in turn would lead to serious implications for the 'responsible person' under The Regulatory Reform (Fire Safety) Order, and for the installer.

Apollo's perfect performance

The National Indoor Arena (NIA) in Birmingham is benefiting from a fire system upgrade that has equipped the 13,000-seat venue with a new Apollo intelligent fire detection system.

The multi-use nature of the building is a potential source of false alarms, so the new fire system needed to provide reliable protection to the main four storey building and its four linked multi storey car parks.

"We identified the areas of high risk for unwanted alarms and recommended the Apollo Discovery range"

BDS Fire & Security Limited, who won the contract to upgrade the current Apollo system, recommended a range of detectors and ancillary products from the Discovery range to meet the client's specification. Graham Hawkins, Sales & Services Director at BDS Fire & Security Ltd, comments: "We identified the areas of high risk for unwanted alarms and recommended the Apollo Discovery range because it features multisensors with five programmable sensitivity settings that make it extremely adaptable to differing environmental conditions. We have installed over 750 multisensors forming part of a complex and highly integrated cause and effects schedule, delivering peace of mind and continuous fire detection for the client."

"This project required constant project management and the highest level of co-operation and co-ordination between all the parties concerned."

Apollo wins largest project in Europe

Mater Dei Hospital, Malta - Europe's largest civil construction project in 2007 - chose Apollo to protect it from the risk of fire.

Mater Dei Hospital is the brainchild of Malta's Foundation for Medical Services (FMS). Six years in the making, the 800 bed facility attracted a project team of internationally renowned companies including Skanska, ABB, Aster Grossi, Speier - and Apollo Fire Detectors.

Apollo's local representative Alberta Fire & Security secured the fire detection contract. Edwin Aquilina, Alberta's Project Manager, said: "This project is one of the largest ever seen in Malta. It required constant project management and the highest level of co-operation and co-ordination between all the parties concerned. Apollo's technology allowed us to tailor solutions to specific circumstances - so we were able to proactively suggest solutions to the client's requirements."

The fire detection system at the Mater Dei Hospital is based around Apollo's Discovery range of intelligent fire detectors. It consists of 15 advanced addressable fire control panels networked together controlling over 9,000 Apollo Discovery intelligent fire detectors, 2,300 sounders and 1,200 manual call points. In addition, there are over 700 input/output modules that enable the fire detection system to interface with other building services. Areas above 10m in height, such as chapels, halls and auditoria, are fitted with beam detectors.

Over 100 repeater panels and five large graphic repeaters are strategically positioned around the facility to enable an immediate and appropriate response to an alert from key staff at nursing stations and security posts. An interface between the fire alarm network and the BMS enables the complex cause and effect sequences that ensure the evacuation plans for the building are activated correctly.

All in a day's work

For the past six months Apollo's Chief Technology Officer and unparalleled expert in fire systems design, Roger Barrett, has been sharing his knowledge with an Electronics Engineering undergraduate from Southampton University. As part of the Year in Industry scheme, which provides talented young people with paid, degree relevant work placements, Ben Su has been working closely with Roger on a new type of sensor, as well as acquiring all the techniques for evaluating and interfacing detectors to electrical circuits.

Commenting on his time with Apollo, Ben said: "This is a fantastic opportunity to work with one of the best technical minds in the fire industry and I am very grateful to Apollo for taking me on. I am only half way through the scheme and already I have learned so much from Roger. I hope to be able to add to this knowledge and apply it to my course and my career." Ben completes his Year in Industry with Apollo in July, when he will return to Southampton University to continue with his degree.

Roger Barrett (left) with Ben Su (right).

A year of giving

Apollo MD Danny Burns (left) presents Great South Run contender Richard Prentice with a £100 donation to his chosen charity.

Throughout 2007, Apollo people took it upon themselves to run, dress up, dress down and generally humiliate themselves in any way necessary to raise a total of £2025.25 for various charities.

Diary Dates

26-29 February - Sicur, Madrid
11-12 March - Firex South, Sandown

ReaderReplyCard

To receive further information on any of Apollo's products or services, please complete the coupon below:

- ☐ New Product Catalogue
- ☐ Free BS5839 guide
- ☐ Discovery
- ☐ Orbis
- ☐ AlarmSense
- ☐ I would like to arrange to visit Apollo and tour the facility
- ☐ I would like to receive the new monthly eMonitor

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