sprinkler focus

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Sprinkler FOCUS is the biannual magazine of the British Automatic Fire Sprinkler Association. It is the only UK publication which has automatic fire sprinklers at its core with current news, features and opinions along with case studies and product updates.

From the Chair

ANOTHER PROACTIVE AND challenging year is coming to a close with BAFSA pushing for wider awareness on the benefits of installing fire sprinklers.

2018 has seen significant increase in interest from the Residential & Domestic sector. However, this growth has not been without its issues for BAFSA members, specifiers and Authorities Having Jurisdiction with new companies entering the market which do not have any form of Third Party Certification (TPC).

This should be of concern to us all. The concept of a third-party certification scheme is to provide confidence to regulators, specifiers, industry and the public at large that the manufacturer, contractor, etc. has been subject to assessment of their competence against recognised industry or product standards and has satisfied these requirements. Also, that those standards are maintained through regular surveillance audits.

We have campaigned continuously throughout the year ensuring that purchasing authorities are aware of the need to include third party certification in their tender documents for both retrofitting and new build projects. I am pleased to say this has been well received and is being implemented by many housing bodies across the country.

There is also an alarming growth of adverts and other sales & marketing material on the use of non-standard and non-accredited sprinkler and water mist systems. BAFSA continues to advise against the fitting of such systems until they have received the necessary approvals and third-party certification. We have a publication – Bif 20 – providing information about such systems and on the risks they should be fitted. We also recommend that the necessary risk assessments are carried out so that you satisfy yourself as to the overall efficacy.

As more sprinkler and water mist systems are installed it is essential to be confident that these are being designed and installed to recognised and approved standards properly by competent people who know what they’re doing. This to me is one of the most important challenges that lie ahead.

We have welcomed a number of new Members to BAFSA this year. However we have also had to decline a larger number, as they had not yet achieved third party accreditation status. Those applicants we have declined have been encouraged to apply for TPC and a number have returned after successfully gaining that status.

While we should be flattered that a number of companies have taken to using the BAFSA logo as some form of approval, if they are not members they do not have the right to display the BAFSA marque and I urge anyone to check our members list to confirm membership before progressing an enquiry. Likewise when we have noticed companies using the TPC logos when they do not have certification then we have passed this information to the TPC bodies.

If the industry is to remain sustainable and respected for its skills and professionalism, we must be committed to training the next generation, which is why BAFSA is continuing to develop qualifications for the sprinkler industry.

With the support of the Third Party Accreditation bodies we would hope that the qualifications of the workforce will become an element of the TPC process in the near future. It is only by protecting our standards and registering our membership that we can ensure that sprinklers keep their high reputation for reliability and protection.

John McCann
Chairman
What does the future hold?

At a time when the sprinkler industry in the UK has never been busier particularly in the Domestic and Residential sectors, with reported sprinkler head sales up by 50% for the first six months of 2018, what could possibly go wrong?

Listening to our Members, particularly the suppliers and manufacturers there is a lot that could go wrong in the next two years, although the Domestic and Residential Market together with the Retrofit Market are buoyant. However indicators in some areas show a slowing down of the construction market due to BREXIT, particularly in the industrial and commercial sectors.

The lack of clarity for both importers and exporters seems to be the prime concern, unknown tariffs on both imports and exports makes strategic planning for the future almost impossible. Likewise, ensuring a supply chain is able to cope with any unknown changes to border controls.

According to new CBI research on business preparations, 39% of firms said they would trigger further contingency plans including redundancies, adjusting supply chains outside the UK, stockpiling goods and relocating production and services overseas.

A quarter said they would take such measures in the absence of greater certainty on Brexit by December, whilst 1 in 5 said the point of no return for triggering their plans has already passed.

Carolyn Fairbairn, CBI director-general said recently: “Unless a Withdrawal Agreement is locked down by December, firms will press the button on their contingency plans. Jobs will be lost, and supply chains moved.”

Listening to some of the many statements from the UK Government, it would appear they are going to turn the UK into an “exporting superpower.” This would seem to be a very unlikely time to try and achieve this, with many of our competitors well established in trade deals with fixed tariffs and certain markets.

With both China and the US looking to expand their sales in Europe they are setting up favourable sales links into one of the world’s biggest single markets, whereas the UK is pulling out of the biggest trade deal imaginable. This is not the rants of a “remainer” these are just simple facts.

Over a period of many years the European Union has established a single trade agreement and excellent cross boarder ties with its members, countries with an estimated total population of 510 million. Where will we get a single country or collaboration that can compare with that? The USA is currently around 310 million. Of course we will still be able to trade with Europe, however...
at what price? China is currently investing billions into its infrastructure to ensure it can trade efficiently with Asia and Europe; we however have new barriers to contend with.

The Trade Secretary Liam Fox, sees the situation as completely the opposite, speaking at the Conservative Conference this autumn he saw this as an opportunity for the UK to raise its game: “I make no apology for the fact that I believe Brexit brings great opportunities to our country or that embracing a more global view is in line with Britain’s long and proud history. In fact, I am proud to believe it.

“And as we take up our independent seat at the World Trade Organisation next March” he continued, “we will do so as champions of free trade. Free Trade that has taken millions of our fellow human beings out of abject poverty and that is the cornerstone of social cohesion, political stability and our collective security. We must not allow the forces of protectionism to undermine all that we have built.”

Ngaire Woods Dean of the Blavatnik School of Government and founder of the Global Economic Governance Programme at the University of Oxford, writing in the Guardian seems to view the Government’s strategy as fanciful.

The US-China trade war may lead to a slight opening up of China’s services markets, implying new opportunities for service exporters. But it could also close off existing markets. In the US, for example Goldman Sachs is advising investors to put their money in “domestic-facing” firms to weather the trade-war storm.

“THIS IS NOT AN OPPORTUNE MOMENT FOR BRITAIN TO PURSUE EXPORT-SUPERPOWER STATUS. IT CAN EITHER LEAVE THE EU OR IT CAN AIM TO INCREASE ITS EXPORTS. IT CANNOT DO BOTH.”

Who do we believe, it seems that every statement from one side is completely contradicted by the opposing side and in the cases of both the Conservative and Labour parties, the divisions seem to be internal as well as external.

How long will it take for trade to be re-established and for the UK to start seeing the benefits of BREXIT and leaving the EU. Again the timescales are contradictory, anything from two years to ten years.

We are seeing some UK manufacturers establishing warehouses in mainland Europe in order to ensure continuity of supplies and deliveries to their European customers, however at some point these warehouses will require restocking.

Will the cross boarder deliveries be streamlined when we are outwith the EU or will we be tied up in red tape and customs forms while our European competitors fly through boarder checks?

Sadly neither I, nor my crystal ball, are able to give an answer to this question, as one person recently said to me, “hopefully it will be like the Millennium change over and everything will continue and it will be business as usual.”

Personally I don’t think at midnight on the 29th March 2019 everything will be the same, we can however live in hope.

In the meantime, here is the Government’s current advice to industry in the event there is a “no deal.”

Compliance & conformity

Since the Grenfell tragedy, BAFSA is increasingly being asked for advice on what types of sprinkler and water mist systems can be utilised in high rise social housing blocks.

Where systems are being installed for the purpose of protecting life, including systems being installed as compensatory features for building regulations compliance, strict adherence to the relevant British Standards must be achieved. This means not only that the system is designed and installed in accordance with the standards but also all the components of the system must be approved for use in fire suppression systems and where a certification scheme exists, they must be listed by an appropriate testing laboratory. Additionally, systems must be subject to a regular programme of testing and maintenance – this is a legal requirement for all fire protection systems installed for life safety purposes.

Where the residential and domestic standards cannot be used (for example if the building includes an underground car park) then systems should be designed and installed to the following:

- Industrial and commercial sprinkler systems: BS EN 12845:2015
- Water mist systems in industrial and commercial premises: BS 8489:2016 – Note that the systems are to be designed to Part 1 and that Part 7 covers the suitability of water mist systems in low hazard occupancies

Third Party Certification

BAFSA’s members are all committed to installing automatic fire sprinkler and water mist systems in accordance with the relevant British Standard and all its installer members are independently certificated for this purpose. It has to be understood that there is no legal obligation to comply with this, or indeed any other standard, unless such requirement is written into law - as for example in the Technical Handbooks to the Scottish Building Standards or where a Building Control Officer or an Approved Inspector is being asked to consider alternative forms of compliance with Approved Document B of the Building Regulations 2010.

That said, it is BAFSA’s opinion that only fire suppression systems designed and installed to the appropriate standard should be specified for residential and domestic premises since reliability and efficacy is a paramount issue for such occupancies.

Sprinkler systems

As already stated, residential and domestic sprinkler systems must comply fully with all parts of BS 9251:2014: Fire sprinkler systems for domestic and residential occupancies – Code of practice. Sadly, there are available on the market a number of systems that purport to comply with BS 9251 or, to quote one supplier; ‘provide an equivalent degree of protection’. One company offering mist systems even states that as their systems are ‘not being part of the fabric of the building’, ‘they do not come under ISO or British Standards’. Certification as applicable to systems regulated by Codes and Standards”.

Such systems may be designed to other standards - or to none - but it is BAFSA’s belief
It is worth noting there are two types of water mist system available in the UK: low-pressure systems which operate typically around 10-12 bar and high-pressure systems which typically operate at more than 150 bar. For comparison, sprinkler systems operate at between 7 and 8 bar but domestic systems can work quite satisfactorily at 4 bar. Virtually all residential and domestic water mist systems will be low pressure systems as the higher pressure systems can be significantly more costly than a sprinkler system.

Unwarranted Claims
Claims that systems or equipment comply with British Standards when they do not, may amount to a breach of the Trade Descriptions Act 1968 and may also constitute an offence under the Sale of Goods and Services Acts. As is made clear in BAFSA Technical Guidance Note No. 1, the design and installation of residential and domestic sprinkler systems, systems that deviate in any significant way from BS 9251 must have the approval of the Authority Having Jurisdiction (AHJ). It would therefore be the responsibility of the AHJ or other party specifying a system to ensure that an assessment of the proposed system is made to determine whether it will provide a level of protection equivalent to a fully compliant BS 9251 system.

Third Party Certification
The Building Regulations and Scottish Building Standards strongly advise that those procuring fire systems should select suppliers/installers who hold Third Party Certification (TPC) in respect of the relevant system standard. There are a number of certification bodies who undertake the provision of TPC for sprinkler and water mist installers. See BIF 20

Potential Liabilities:
Use of Non-Compliant Systems
Specifiers or those involved in providing guidance on the procurement of non-standard systems (including the fire and rescue services) should also be aware that, at the time of writing, no third-party certification body, such as Warrington Certification Ltd, LPCB/BRE Certification Ltd or IFCC Ltd will allow a certificate of compliance or conformity to be issued for a noncompliant system. Those who propose or support the use of systems which do not comply with an appropriate standard must accept that they may incur an assumption of liability should such a system be discovered to be unfit for the purpose for which it was installed.

that these systems are unlikely to provide the same degree of certainty of reliable operation and levels of protection as systems designed and installed in accordance with BS 9251, which has been in use for more than 10 years.

Such non-standard, non-compliant systems include ‘low-cost sprinkler protection’ where the sprinkler heads are fed directly from the property’s internal cold-water distribution system, pre-action or ‘double-knock’ sprinkler systems and ‘personal protection’ systems fed from pressurised gas cylinders. None of these can comply with BS 9251.

It should also be noted that all sprinkler systems supplied from a direct mains connection should, in addition, comply with the Water Regulations and it is BAFSA’s opinion that where such systems are fed via a domestic appliance or where a WC or appliance is supplied by the sprinkler pipe network, such systems are likely to be in breach of these Regulations. Before committing to purchasing any potentially non-compliant sprinkler system it would be wise to seek the views of your water supplier.

Water mist systems
It is BAFSA’s opinion, endorsed by the manufacturers of water mist system components, that water mist systems intended for use in Residential and Domestic systems cannot, and do not, comply with BS 9251.

Such systems now have their own specific design and installation standard in the form of BS 8458: 2016: Fixed fire protection systems - Residential and domestic water mist systems: Code of practice for design and installation. Note that claims have been made for some water mist nozzles that these have been tested to BS 9252: Components for residential sprinkler systems – Specification and test methods for residential sprinklers.

This is the test standard for sprinkler heads and is irrelevant for water mist systems (although at the time of writing most sprinkler heads sold in the UK are tested and approved to a US standard, UL1666).

BAFSA’s concerns for all such non-compliant systems relate to fears that these lack the 130 years’ experience and constant refinement of ‘conventional’ sprinkler systems and may fail to operate as intended and thus cause the usefulness and reliability of sprinkler systems in general to be called into question.
THE FIRE AND RESCUE INCIDENT STATISTICS ENGLAND, YEAR ENDING MARCH 2018 RECENTLY RELEASED BY THE HOME OFFICE SHOW AN INCREASE AND UPWARD TREND IN THE NUMBER OF FIRES BEING ATTENDED BY THE FIRE AND RESCUE SERVICES ACROSS ENGLAND.

AND AS KEITH MACGILLIVRAY, BAFSA’S CHIEF EXECUTIVE REPORTS, THE ACTUAL NUMBER OF FIRES BEING ATTENDED HAS INCREASED BY THREE PER CENT, (5153 FIRES), MANY OF THESE FIRES HAVE OCCURRED IN SCHOOLS.

DESPITE CONTINUING FIRE safety work by the Fire and Rescue Services and the installation of smoke detection the number of fire fatalities and non-fatal casualties in England has also increased by 27% and 6% respectively, these figures do include the fatalities and casualties from the devastating Grenfell Tower fire.

Similarly the Association of British Insurers (ABI) also reports that the cost of fire annually has now reached a staggering £1.2bn and that the cost of insurance claims has increased dramatically by 165% since 2004.

Many of these fires are started deliberately, last year in England and Wales; the Police authorities recorded 21,961 Arson cases, again many of these fires were in schools.

A recent example in July 2018 in North Yorkshire saw Firefighters from six stations across Yorkshire attend a fire in Sherburn High School; one part of the building subsequently collapsed and caused the remainder of the school to be closed for some time. Following the fire a teenage girl was arrested on suspicion of causing the fire.

Every year in England there are on average more than seven hundred school fires. Last year in London alone there were 90 school fires and in the Borough of Brent there have been 29 school fires in the last ten years.

Recently the Commissioner of London Fire Brigade, Dany Cotton has spoken out on the need to install automatic fire sprinklers in all new and refurbished schools in England, at present this is only a recommendation. Unfortunately it is also a recommendation that is very seldom acted on in England.
“IN MANY CASES WHERE A SCHOOL FIRE HAS OCCURRED, THE BUILDING IS UNUSABLE FOR MANY MONTHS AND SOMETIMES YEARS”

Unlike in Scotland and Wales where it has been a requirement to install automatic fire sprinklers in all new built and refurbished schools since 2010 and 2014 respectively. The National Fire Chiefs Council and insurers have also renewed the call for the installation of automatic fire sprinklers in schools to reduce the needless waste of resources, finance and disruption to our children’s education.

Fortunately in the UK there have been no fatalities in schools fires for a very long time, however the affect on peoples lives and their education is considerable.

A fire in a school initially puts Firefighters lives at risk as they try to mitigate the damage to the property, because of the large open areas and lack of compartmentation in many existing schools the fire travel can be very rapid and extensive. Invariably school fires are spectacular and require large numbers of firefighting resources and water supplies, this is particularly the case in more rural areas where neither may be readily available.

Cuts in educational services can include the reduction of security measures in schools thus leaving them targets for the fire raiser and arsonist.

The introduction of the requirement for automatic fire sprinklers into new and refurbished schools in Scotland back in 2010 was not the result of any injuries or loss of life but the realisation that the school stock was being depleted on a regular large scale basis by deliberate fires such is the case in London at present.

Why fit automatic fire sprinklers into schools? Firstly to make the school building portfolio more sustainable, by installing a sprinkler system into a school, you are ensuring that the building in terms of fire will be sustainable throughout its build lifetime. If sprinklers are planned for the building in the initial stages this will also give greater flexibility for the designer of the school.

You are preventing the disruption of the pupils attending the school’s education.

In many cases where a school fire has occurred, the building is unusable for many months and sometimes years, there is then a need for temporary accommodation for the school staff and pupils. This can be well outside the area of its normal catchment area requiring transport for pupils to attend.

There is also the loss of precious resources, much of which will have been built up over many years and in some cases irreplaceable together with the teachers and pupils own materials, which may be required for future assessments.

Interviews with teachers following school fires have frequently included the words devastating, irreplaceable and loss of valuable resources together with inconvenience and disruption of scarce educational time.

In order to reverse this disturbing and costly trend we urge HM Government in England and Northern Ireland to include the requirement for fitting automatic fire sprinklers in schools as soon as possible.

The fitting of automatic fire sprinklers by Third Party Accredited Installers using accredited components in schools will ensure that fires are controlled or extinguished in their early stages and prevent large scale losses of buildings, educational materials, teaching time and disruption for teachers, pupils and the public. The cost of fitting sprinklers in schools can be very reasonable provided they are planned in the initial stages, this then gives the building automatic fixed fire protection for its full life provided the system is maintained and serviced regularly.

Automatic fire sprinklers save lives both Firefighters and the public; they also protect the valuable building stock of the country and allow our children to have an uninterrupted education.
Sprinkler Saves

**3rd : apartment block, London**

London Fire Brigade were called to a fire at a block of flats in Heritage Lane, West Hampstead. Eight fire engines and 58 firefighters and office from West Hampstead, Paddington, Willesden and surrounding fire stations attended the scene.

The fire started externally and LFB’s Fire Investigation Team believe the cause of the fire was due to a cigarette butt being discarded into a plant pot on the balcony of the third floor.

The building was fitted with a sprinkler system and the sprinkler heads inside the affected properties activated and helped suppress the fire. The system activated on five floors, due to the severe fire that spread from balcony to balcony. Fire and heat had penetrated into the 5 flats causing about 10% damage to each.

This incident clearly shows the importance of residential sprinklers, if they had not been fitted all of the balcony flats would have been severely damaged by fire having a major impact on firefighting operations and of course the safety of firefighters and residents.

The system was designed and certified to BS9251, 2005 regulations and covered the apartments only. The system was connected to the boosted cold water supply; this had a flow switch, pressure gauge and drain point.

Fortunately the building was protected by an automatic fire sprinkler system and, most importantly, a Third Party Accredited Member of BAFSA installed the system.

"AS DEMONSTRATED IN THIS CASE, SPRINKLERS CAN SIGNIFICANTLY REDUCE FIRE, HEAT AND SMOKE DAMAGE"

**22nd : car park, Brighton**

East Sussex FRS is calling for more sprinklers to be installed in commercial properties after a fire was prevented from taking hold in a Brighton car park.

Crews from Uckfield, Seaford, Lewes, Roedean, Brighton and Hove attended a car fire, believed to be an accidental ignition, in The Lanes car park, Black Lion Street.

Firefighters were assisted by the fact that the car park had sprinklers installed which were triggered and helped to extinguish the fire.

Andrew Gausden, Business Safety Manager said: “As demonstrated in this case, sprinklers can significantly reduce fire, heat and smoke damage.”

**3rd : restaurant, Manchester**

A fire broke out in a restaurant on the ground floor of a six storey building still under construction.

6 appliances attended to extinguish the fire but 2 heads had activated to control the cooking oil fire which had started in the kitchen bute was spreading through internal ductwork and cavity walls due to open building, numerous breaches in compartmentation due to renovation works.

Damaged was limited to £20,000 and business down time was 7 days.

**15th : flat, Salisbury**

A fire that broke out in a flat at Avon Reach in Salisbury was extinguished when the sprinkler system activated – as a result, the fire damage was contained and there was minimal water damage.

Group Manager Tim Gray, Head of Fire Safety, said: “Because of the quick activation of sprinklers, not only did the occupier escape unharmed, the damage to the flat was minimal. On this occasion, only one fire crew from Salisbury was required to attend, and no further firefighting was needed as the single sprinkler head had extinguished the fire, which was caused by lit tea lights being left on a windowsill before igniting the curtains.”

The Fire and Rescue Service supports developers and works with local authority building control departments to promote the use of sprinklers where possible.

“**AUTOMATIC SPRINKLER SYSTEMS ARE ONE OF THE BEST WAYS TO SUPPRESS A FIRE AT THE EARLIEST OPPORTUNITY**”
The Northern Ireland Fire and Rescue Service (NIFRS) took 3 days to extinguish the devastating fire in the historic Bank Building on Castle Street, which gutted the Primark store and the entire building being refurbished.

Investigations are taking place to find out what caused a devastating fire in Sandown which destroyed two hotels. At the height of the blaze, 50 firefighters from Hampshire and the Isle of Wight, along with two aerial ladder platforms, the Incident Command Unit, police, and the ambulance service, were on scene. Four fire officers were also brought over from Hampshire, along with back-up engines and specialist medical teams from the mainland.

The National Museum of Brazil had all its 20 million historic artefacts destroyed in a massive fire that swept through it for two days. The museum, founded in 1818, originally housed Brazil’s emperors. Among its treasures were the remains of ‘Luzia,’ the earliest human body parts ever discovered in Latin America.

A fire in an airing cupboard on the half landing of a duplex apartment in an 18-storey block was suppressed by the operation of two sprinkler heads. The fire had spread from the airing cupboard, which did not have sprinkler protection, to the half landing. The half landing door was open allowing the fire to be suppressed by sprinklers. In total, 2 heads operated including the one located on the top floor landing. The cause of the fire was electrical, light fitting, and the sprinkler system had controlled the fire before the arrival of London Fire Brigade.

The fire occurred in a terraced property of 3 floors and basement property converted into a residential hostel used as sheltered housing. The fire was located in a ground floor bedroom. The occupant who was asleep in bed was awoken by the smoke detector in the room operating. The fire was controlled and contained by a single residential type sprinkler head operating within the room of origin. The sprinkler system subsequently operated as the fire developed. The cause of the fire is under investigation and there were no reported injuries or casualties.

The cause of a massive fire which swept for two days through the National Museum of Brazil has yet to be established. Initial reports suggested that all the 20 million historic artefacts it contained were destroyed.

The museum, which was tied to the Rio de Janeiro federal university and the education ministry, was founded in 1818 after originally being built to house Brazil’s emperors. Among some of the most precious gems in the history of antiquities were the remains of a woman named ‘Luzia,’ the earliest human body parts ever discovered in Latin America.

Investigations are taking place to find out what caused a devastating fire in Sandown which destroyed two hotels. At the height of the blaze, which tore through the St Moritz and Tarvic 2 hotels on 2nd September, 50 firefighters from Hampshire and the Isle of Wight were on scene, along with two aerial ladder platforms, the Incident Command Unit, police and the ambulance service.

Four fire officers were also brought over from Hampshire, along with back-up engines and specialist medical teams from the mainland.

It took 3 days for The Northern Ireland Fire and Rescue Service (NIFRS) to extinguish the devastating fire which started on the roof of the historic Bank Building’s on Castle Street which gutted the Primark store and the entire building which was being refurbished.

Image Courtesy of NIFRS
A former Home Secretary once confided in me that there were no ‘votes in fire safety’ and that his post bag contained more letters about noisy neighbours than anything related to fire.

As the events of 14th June 2017 and its aftermath unfolded I gave a thought for that eminent politician and wondered how he now viewed the anger, resentment and physical demonstration of bitterness and hatred against what the residents of North Kensington seem to have viewed almost as an occupying power.

Since the fire there have been millions of words written examining in detail design decisions taken many years ago (Grenfell and Lakanal were constructed to a standard, CP3, which was originally published in 1948). Both fires have been afforded intense media interest and scrutiny with a major enquiry still underway.

However, I’m saddened (but not surprised) that there has been little attention so far paid to what I believe were the missed opportunities which could have prevented the loss of 72 lives.

The first lost opportunity concerns the type of insulating cladding panel used to upgrade the function and appearance of the towers. In 1991-3 the Fire Protection Association noticed a significant increase in the number, severity and costs of fires in food processing plants – one of these resulting in the deaths of two firefighters in 1999 in a poultry processing plant in Herefordshire.

The common factor in the rapidity of spread and intensity of fire damage and smoke generation was discovered to be the presence of what were then called ‘Large Integrated Sandwich Panels’ – LISPs. These consisted of a sandwich of (usually) aluminium with a powder coated surface (easily cleaned) concealing an insulating core of combustible plastic material – often polyurethane (PUR) or even polystyrene. The problems arose because the panels delaminated in fire allowing rapid spread via exposed insulation. It’s believed that these panels also contributed to the disastrous 2007 Warwickshire vegetable packing plant fire where 4 firefighters died.

A subsequent fire in similar premises in Peterborough resulted in a campaign by local authority elected members to require the banning of the panels – or provision of a fire suppression system – as a planning condition.

The insurers response was more immediate resulting in several initiatives including a Loss Prevention Standard LPS 1181 which covered external insulating panels in Part 1 and internal panels (Part 2). These were backed up by revisions to the FPA Design Guides for buildings (effectively the insurer’s ‘add-ons’ to Approved Document B. The impact of the insurers concerns had an immediate impact and in the words of one manufacturer of insulated panels ‘made all panels except those with a PIR or mineral fibre core unsaleable’. The introduction of low combustibility materials like polyisocynaurate (PIR) or non-combustible materials like mineral wool solved the problem.

Given the availability of LPS 1181 and manufacturers’ awareness of this and the issues involving fire spread, one might
reasonably question why any non-compliant insulating panels would still be manufactured and sold 20 years later.

In fact, the issues relating to panels with a combustible insert also struck a chord with some of the older members of the fire community who remembered the Summerland disaster. This 1993 fire which resulted in more than 50 deaths was the result of the building being clad in Oroglas, an acrylic material which not only was readily ignitable but which melted and spread the fire by liquid drops of burning material.

In 1999, a fatal fire at Garnock Court, Ayrshire involving combustible cladding resulted in the Scottish Building Standards being amended to prohibit the use of such cladding.

Secondly, serious fires in residential tower blocks are also not perhaps as rare as some people believe and I'd certainly question some of the conclusions in the 2011 LGA guide Fire safety in purpose-built blocks of flats: “People living in flats experience more fires than people living in houses. However, a fire in a flat is no more dangerous than a fire in a house. High-rise does not mean high-risk!”.

The same document suggests that it is not necessary to upgrade fire safety provision when statutory guidance changes: “…application of current benchmark standards to an existing block of flats is not normally appropriate”. Are we really meant never to implement lessons learnt in real fires, regardless of the number of deaths? Fortunately, this maxim was not applied following the Kings Cross underground fire when extensive and costly improvements were undertaken across the network.

Thirdly, ‘stay put’. Both Lakanal House (constructed 1959) and Grenfell (constructed 1974) were only designed with a single staircase and this effectively provided no alternative to the ‘stay put’ policy which cost so many lives in these two fires. I have always believed that this policy was fragile, depending as it does on the integrity of fire compartmentation which may have been installed 50 years earlier. Given many real-life instances where such integrity was absent (have a look at the underside of the cross-over stairs at Lakanal), I do believe that the time has come to examine the alternatives. Failure to do this after Lakanal, where six residents died in their flats while being told on the phone to stay put, could have informed any enquiry into the impact of the stay-put policy in real life fires. the refurbishment of Grenfell Tower. In this context, it is worth noting that the 1983 BRE publication Aspects of fire precautions in buildings suggests that: “As a rule, therefore, a minimum of two stairways is necessary…” (Page 73)

“SERIOUS FIRES IN RESIDENTIAL TOWER BLOCKS ARE ALSO NOT PERHAPS AS RARE AS SOME PEOPLE BELIEVE”

Perhaps the ultimate, if unwitting catalyst for the whole Grenfell tragedy can be traced to the 2006 DCLG publication A Decent Home. This was intended to guide for social housing providers on how buildings could be improved using finance from the ‘Decent Homes Fund’ to meet the Government’s target of ‘all homes to be decent homes’ by 2010. The guide places great stress on energy saving and insulation measures. What is sad – and surprising, given the large number of tower blocks with single staircases is that nowhere in the guide is there any mention of fire safety.

Perhaps the most telling missed opportunity of all can be found on page 8 which suggests that in some instances, ‘demolition of the existing stock may represent a better option than refurbishment’.
PEOPLE, PROPERTY, ASSETS, BUSINESSES, EMPLOYMENT

WAREHOUSE FIRES THREATEN THEM ALL

IT MAKES SENSE TO FIT FIRE SPRINKLERS

FIRE KILLS SPRINKLERS KILL FIRES

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Fires in recycling and waste management centres are a significant problem for communities, the fire and rescue service, the environment and insurers. In 2013, more than 230 fires in recycling centres were recorded - more than 4 per week – and of course, these are only the fires to which the fire and rescue services were called.

The problem is perhaps as much the scale of some of these fires as their frequency. A number have burnt for days and some for even weeks... And have created significant logistical problems for communities. As an example, a fire at Smethwick in which 100,000 tonnes of recycled plastic was involved, required the attendance of 39 fire appliance and 200 firefighters over 200 hours of firefighting activity. The same fire consumed 14 million litres of water simply to contain it and released an estimated 19,000 tonnes of carbon into the atmosphere.

One of the problems with current UK fire legislation – and more specifically, with the fire elements of building regulations in England and Wales is that these are solely concerned with matters relating to life safety. Thus, where there is no historic evidence of fire-related fatalities or injuries, there tends to little requirement beyond ensuring that the occupants of a structures can escape safely and that neighbouring buildings are not put at risk from fire spread.

This is the same legislation which allows single storey warehouses with a 20,000m² footprint (equivalent to approximately 4 soccer pitches) to be constructed without any form of automatic fire suppression systems. So, given people do not die or suffer injury in fires in recycling centres, it’s clear concerns about these fires can only be alleviated by the intervention of the Environment Agency or the Fire Authority for the area.

There is evidence such intervention can be effective with a prosecution in Derbyshire which resulted in the facility being closed and the manager imprisoned and barred form future employment as a director.

Perhaps the only encouraging aspects of this litany of fire and destruction are the instances where enlightened operators have taken the decision to install automatic fire suppression systems and where such systems have successfully operated and significantly minimised both the damage, the need for fire service intervention and the downtime which follows so many fires.

Deciding to install automatic fire suppression systems significantly minimises both the damage, the need for fire service intervention and the downtime which follows so many fires.

As with all workplaces, it is essential for the operator or owner of a recycling site to manage fire safety in a structured manner incorporating:

- Develop and issue a written fire safety policy. Effective internal mechanisms should exist to ensure that the policy is properly implemented and covers not only the normal operating regime of the location but take into account special or occasional events.
- Undertake a fire risk assessment (FRA) and review it regularly and in the event that any material fact changes - for example, if you start accepting a different class of material.
- Take steps to eliminate or reduce any hazards disclosed by the FRA.
- Ensure that a single person is made responsible for all fire safety matters and that everyone on site knows whom this is.
- Each property should compile a fire safety manual setting out its strategy and detailing its plans in case of fire and as a basis for training. Locations should also maintain a logbook to record all fire-related events such as training, drills, inspections and equipment maintenance.
- Upgrade and maintain both passive (fire separation, construction etc) and active fire safety measures (detection and suppression) as necessary.
• A systematic and effective training programme should be introduced to ensure that all staff know how to minimise fire risks, how to raise the alarm in case of fire and to provide enough trained staff to tackle incipient fires quickly. ‘Hands-on’ training with portable fire equipment (including hose reels if fitted) should be provided for any staff member who is likely to encounter a fire.

• Put in place effective precautions to manage contractors and maintenance work and in particular, to control all hot work.

• Set up regular liaison meetings with the local fire and rescue service and, in the case of larger sites, consider inviting personnel from the nearest fire stations to visit the site and familiarise themselves with its access roads, layout and equipment. Ensure that, where available, a copy of the fire and rescue service’s ‘tactical plan’ for the site is obtained and understood.

• Ensure that the risk of arson is considered and appropriate security precautions are in place to prevent intrusion.

• Consider the need for a business continuity plan.

Fighting fires is acknowledged as a dirty and dangerous activity and fighting fires in recycling centres is no exception. Anything that facilitates a swift and effective response will provide significant benefits in terms of reducing the damage on site, reducing the environmental impact of a fire, reducing the volume of water consumed and, most importantly minimising the risk of injury to firefighters.

The most effective way of dealing with any fire is rapid intervention; to attack it in its earliest stages. Not only does this minimise the damage caused by heat and smoke but also the collateral damage caused by water. It is a well-established fact that the application of water from a sprinkler system on to a developing fire two or three minutes after it starts uses up to 90% less water than will be applied by the fire service when they arrive. Another significant benefit from early suppression is a reduction in the volume of fire water run-off which in the quantities likely from fire and rescue service intervention is an environmental threat which the Environment Agency takes seriously.

The options for firefighting equipment are:

Portable fire extinguishers:
• Fire hose reels
• Fixed manual systems
• Deluge/waterspray system

Water monitors/cannon:
• Water Mist systems
• Smoke ventilation

Sprinkler systems will probably provide the optimum level of protection inside buildings and structures, including covering storage areas, sorting areas and provide optimum levels of protection over conveyors and hoppers. Foam additives which can be injected into sprinkler systems may also be considered for sites accepting high volumes of plastics or other higher risk wastes. The use of foam as a wetting agent will also reduce the volume of water needed to fight a fire.

There is increasing interest in waste-derived fuel for the generation of electricity and this effectively means that some recycling centres contain small power stations - with all the hazards that implies from steam or combustion turbines, large volumes of hot lubricating oil, oil-filled transformers and rotating machinery.

It is BAFSA’s views that the hazards of burning waste-derived fuels in generating plants can be countered by following the advice in BIF 25 – Fire Suppression Systems for the Waste Management Industry. And the best sources of guidance for this will be from insurers or from the US National Fire Protection Association’s Code of Practice NFPA 950:2010.4 FM Global, an international insurer also publishes useful data sheets on fire protection of turbines and related power generation equipment.

For specialist storage systems, the selection of the optimum levels of fire suppression will depend on the specific situation. For example, in the case of silos storing wood chips or pellets great care should be taken that the way in which water applied does not generate a solid mass of material which could shelter a fire generating a very dangerous situation for firefighters. Water mist or a gas inverting system may be more appropriate in such cases. This is one area where specialist advice from insurers, the fire service or other competent source of advice is essential.

Systems which generate or move large amounts of dust may need to be provided with explosion suppression systems - usually based on dry powder. Again, specialist advice should be sought in this case. Bag filtration systems and cooling towers and related plant should also be considered to be at high risk and a fire suppression provided as indicated by the FRA.

Standards and Third Party Certification

The utilisation of British and European (CEN) standards is essential when procuring fire protection systems.

By purchasing equipment which is designed and installed in accordance with such standards, the owner of a site can demonstrate that he or she has effectively discharged any statutory duty in this respect.

At the same time, utilising the services of an installer who is subject to a third party certification process and who will install equipment which has itself been tested independently and certificated will demonstrate the highest standards of care in complying with the responsibilities of a dutyholder. For more information on third party certification refer to BAFSA Information File No 20.

Note that systems being installed to satisfy UK insurers’ conditions may also
have to comply with the LPC Sprinkler Rules for Automatic Sprinkler Installations which incorporate the contents of BS EN 12845 together with additional Technical Bulletins. Note that in certain circumstances, for example, where there is a very high roof and a dry sprinkler system, the design requirements set out in BS EN 12845 for non-storage hydraulic criteria and choice of sprinkler heads might not be adequate or appropriate. In such cases, specialised insurance input is essential.

Some far-sighted and enlightened operators of recycling operations have in fact installed fire suppression systems in their plants and in 2013, successful actuations of sprinkler systems prevented serious damage to a wood pellet plant in Bridgend, recycling plants in Stockport and Shropshire and a paper recycling plant on Deeside. A major fire was averted in March 2014 in a Westbury, Wiltshire, plant. In the latter case, the fire service said: “The sprinkler system saved the day - a number of sprinkler heads were operating, containing the fire to one area”. All of these protected plants were back in business almost immediately with little or no damage to the structures and equipment. Is it any wonder that some insurers now insist on fire suppression in recycling plants as a condition of providing insurance cover?

While recycling is an essential part of the UK’s economy and critical in enabling the country to comply with its international obligations to reduce the volume of refuse going to landfill, proper management of centres receiving, processing and converting waste is essential. The number of serious fires in such premises over the past five years demonstrates the need for a re-think in the design, construction and operation of such centres and this must include the provision of modern automatic fire protection and suppression systems where necessary.

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Duff House – 25 years of safety with sprinklers

Duff House, on the outskirts of Banff, is a Grade A country house on a grand scale which was designed by William Adam in 1735 for William Duff, 1st Earl Fife and remained in that family until 1906.

By 1995 Duff House was largely empty and unused and underwent a major refurbishment in order to make it a suitable location for the display of arts and antiquities from the collections of the National Galleries of Scotland.

The work undertaken had been largely informed by a major review and included an automatic fire sprinkler system protecting the whole property.

The presence of the sprinkler system was deemed essential not only to protect this important building which is open to the public but also to protect the valuable contents which are in the care of the National Galleries of Scotland. The property’s location means that the initial fire service response is from the retained fire service and even under ideal conditions it could take up to 90 minutes for additional appliances to respond from Aberdeen or Inverness.

Historic Environment Scotland who manage the building have a track record of supporting the installation of automatic fire suppression systems. HES is currently considering recommendations to install AFSS in Glasgow Cathedral and Iona Abbey.

The upcoming 25th anniversary means that the Duff House sprinkler system will undergo the 25-year test protocols as required in TB 203 of the LPC Sprinkler Rules. At the same time, a new packaged pump house and water tank will replace the original underground tank which has proved to be unsatisfactory from a maintenance perspective.
In June 2018 the Scottish Government announced that it would legislate to require sprinklers in all new social housing and in July 2018 it published a consultation on proposals to require sprinklers in all new apartments and in large Houses in Multiple Occupation (HMOs) with 10 or more residents.

At the time of writing (October 2018), it is our understanding that legislation will be passed in 2019 and take effect in 2021. It is also possible that the sprinkler requirements may be extended to more buildings in which people sleep, possibly to match Wales where sprinklers are required in all new housing.

We will continually campaign for sprinklers to be more widely used to improve fire safety. If the Scottish proposals are enacted this would be a major success, albeit affecting a relatively small population of about 5 million. Danny Doherty, BAFSA’s representative in Scotland, analyses what led to this success.

Fire safety is a national area of legislative competency so it is essential to have someone local to be able to attend meetings at short notice, talk to the media, rebut misinformed claims and answer questions. As a retired senior fire officer, I have excellent connections with the fire service, which in all countries is seen as an authoritative body without a vested interest and continually working with government officials and local politicians. Also in BAFSA’s favour, is that our Chief Executive Keith MacGillivray MBE worked directly for the Scottish Government as Head of its Fire Service Inspectorate and therefore the officials responsible for building fire safety are former colleagues.

Contacts
In all jurisdictions there are officials responsible for fire safety regulations. Often they know little about sprinklers yet changes to fire safety regulations must usually either be proposed by these officials or at least endorsed by them. It is therefore essential to identify who they are and establish a good working relationship, providing information in response to their needs. Officials are tasked with implementing the policies of their political masters. They also try to
balance competing interests, for example our campaign for increased use of sprinklers against objections from the construction industry that does not want to pay for sprinklers. Sprinklers are so effective that they sell themselves, as long as one has the facts.

Regular meetings with officials ensure they are well-informed, while these exchanges can provide insight to progress a campaign, for example that a particular interest group needs reassurance, a document needs to be made available or translated, or further research is needed in a specific area.

Political engagement

There is a political dimension to any new sprinkler requirement because there will always be someone who now has to pay for sprinklers who previously did not. Often the construction industry resists sprinkler requirements, either through a trade body or directly when CEOs of large companies write to ministers claiming sprinklers will lead to less construction. This is a powerful argument, although proven by research to be nonsense, and needs to be countered. To be successful, our campaigns need political relationships such that we will be given an opportunity to reject such claims. Without good contacts with politicians we will not have this opportunity. We cannot assume that officials will respond on our behalf and they may not have all the available evidence.

In Scotland our campaign began in earnest around the millennium, initially focussed on the fire service, securing its support through statistics and live burn tests. Senior fire officers also learned from colleagues in the USA. The fire service pressed local politicians, supported by the efforts of a lobbyist working on behalf of the EFSN, NFSN and BAFSA. Individual sprinkler installers also helped fund political events and journalists in local newspapers were kept well-informed and wrote positive articles about the campaign. This all led to the introduction of a Private Member’s bill by a member of the Scottish Parliament, to require sprinklers in care homes. The legislative initiative was blocked by the Scottish Government but months later a fire in a new care home in Glasgow in 2004 killed 14 people. A version of the bill was passed within months and from 2005 sprinklers were required in all new care homes in Scotland, as well as in apartment buildings higher than 18m.

At a local level in Scotland a number of local councils introduced a policy to fit sprinklers in all new social housing. Once one council had shown this could be done, others joined. Similarly, 31 of 32 councils in Scotland adopted a policy to require sprinklers in all new schools. This lowered the threshold for the Scottish government to introduce a requirement for all new schools to have sprinklers (only one council had to change its policy). Regular contacts with Members of the Scottish Parliament, either in Edinburgh or through exhibition stands at political party conferences, kept fire safety and the potential benefits of sprinklers on the political agenda. The Scottish government funded a cost-benefit analysis on residential sprinklers. It came out firmly against sprinklers in houses but was less clear for apartments and pointed out that for high risk groups there could be a strong case for sprinklers. A debate held in the Scottish Parliament saw Members calling for sprinklers in social housing. When the Grenfell Tower disaster struck, Scottish politicians were ready to act. One introduced a Private Member’s bill calling for sprinklers in all new social housing and in all new apartments. 100 of 150 Members of the Scottish Parliament indicated their support. The fire service is also supportive. In response the Scottish Government has announced that it will require sprinklers in all new flats and has proposed that it will also require sprinklers in all new social housing.

A functioning market

When in 2005 the requirement to fit sprinklers in new care homes and apartment buildings higher than 18m took effect, it meant that for the first time residential sprinklers had to be installed in Scotland. Residential sprinkler projects tend to run in different ways to those in a factory or warehouse (different design criteria, little or no prefabrication, CPVC pipe, less project management) so installers created special teams to look after this new line of business, which held up well when the commercial or industrial parts of the sprinkler market experienced a downturn. Over time installers became more efficient at this work, reducing installation times and costs, which in turn strengthened the case for residential sprinklers.

If residential sprinklers are to be required more widely, they must work. The sprinkler industry, led by trade associations such as BAFSA and the Residential Sprinkler Association, worked with accreditation bodies to set up Third Party Accreditation schemes for residential sprinkler installers, to ensure the competence of new market entrants.

These schemes are less onerous than those for accredited installers of commercial sprinkler systems, only covering installations in accordance with the British residential sprinkler standard, which itself can be used for houses, care homes and apartment buildings. This standard is about to be replaced by EN 16925, the European residential sprinkler installation standard.

As the market grew, with more voluntary installations to add to those required by Government, BAFSA identified a need for more designers and fitters. In advance of the
Welsh requirement to fit sprinklers in all new housing, which took effect in 2016, BAFSA set up training courses in colleges around the UK, including in Scotland and is presently working to set up a course for residential sprinkler designers.

**Long-term approach**

Our efforts to change Scottish fire safety regulations began in 2001. The first success came in 2004, followed by further success with schools. We expect the requirement to fit sprinklers in new apartments and new social housing to be published in 2019 and to take effect in 2021. That will not end our work in Scotland; we will next campaign for sprinklers in large factories and warehouses.

**Conclusions**

Sprinkler campaigns are most likely to be successful when:

- they are well-organised and led by a local person
- good contacts are developed with officials and those who influence them
- national and local politicians support sprinklers
- the infrastructure is in place to serve any new sprinkler markets
- a long-term view is taken
- sprinkler manufacturers continue to advance cost-effective technologies
After long years of campaigning for a review of Approved Document B (ADB) government have indicated a technical review will be announced this Autumn. The recent work of the BSA has been dominated by responding to consultations from the reports by Dame Judith Hackitt, the HCLG Select Committee and recent consultations from England and Scotland on fire safety. Although these processes may feel very paper bound and dry they are incredibly important as they ensure our voice is heard.

The technical review will start with a “Call for Evidence” that will be open to everyone to participate in. So please do so and make your opinions known. For the BSA we are well positioned to participate in these discussions through our inclusion on working groups, the Fire Sector Federation and prior work. In terms of prior work, we will put forward our work supporting the technical and economic benefits of the use of automatic fire sprinklers in large single storey buildings.

On the political front the BSA continues to make our voice heard as we engage with MPs to highlight recent fires in their constituencies. We are actively working to broaden our political discussions and understanding of the processes around the review of Building Regulations to be more effective.

The fire in a 40,000m², 15m high warehouse in Daventry in March of this year highlighted all our concerns. The building had only been completed in December 2017 and was not sprinkler protected. Thankfully everyone escaped the building but there was no way the property could be saved – the fire was just too big to fight. The business that operated within the building put itself up for sale in September of this year to avoid administration. That is despite insurers supporting their recovery and having relocated to alternative premises some 100 miles away in Kings Lynn.

Once again, this incident highlighted the huge personal and financial impact from such a fire event. An event that could have been successfully minimised by automatic fire sprinklers and stronger enforcement of our already loose regulatory guidance.

The BSA is following this event, sharing information with the local MP and raising the issue of sprinkler for the rebuilding of the site.

The Daventry fire has been a key part of our work to spread the message on automatic fire sprinklers in industrial and commercial building. The BSA has participated in several events recently. We took a stand at the Charter Association of Building Engineers (CABE) conference. At the same time to broaden our message into the developer community we have participated with Estates Gazette, a well-respected property developer journal, on a roundtable discussion and presenting at their Finance and Asset Management conference to put sprinklers onto the agenda.

However there remain challenges. The BSA completed a survey of 100 decision makers on recent industrial and commercial build projects to look at attitudes to sprinklers. Surprisingly there are challenges with the “myths” around sprinklers and the question of cost that are effectively barriers. To combat these the BSA are working on materials to clarify how sprinklers work ranging from handouts, to shareable presentations and videos. At the same time, it is gathering information on sprinkler installation and maintenance costs. In the coming months we are preparing to launch a campaign to highlight the positive impact of sprinklers by contrasting sprinklered fires and unsprinklered large scale fires. The intent is to ensure that there is an active decision on their use.

Returning to the opening theme, and as noted above, there are many opportunities to use our collective voice. To quell the “myths”, to add real knowledge to those seeking to make use of sprinklers, supporting technical studies or to join into consultation process around a review. We cannot afford to let these opportunities pass and expect someone else is going to send our message. We would encourage all interested parties to make their views known and heard.
the current work programme, which covers EN 12845, the above deluge valve standard, residential sprinkler standards (see below) and pump standards. The UK has always been at the forefront of commercial sprinkler standards, with EN 12845 largely based on preceding British standards and insurance guidance. The same holds true for residential sprinkler systems. In August the members of CEN (BSI is the British member) approved EN 16925, a new European residential sprinkler system design and installation standard. BSI delegates contributed more to the drafting than any other national delegation. 20 national standards bodies voted in favour. One, BSI, voted against and submitted several comments in support of its negative vote. At the time of writing it is not certain whether any of these comments will delay publication of EN 16925 but it is perhaps indicative that AFNOR, the French equivalent of BSI, shows on its web site that it plans to make the French version of the standard available from 19 February 2019.

In response EFSN is upping its game and we are now providing professional drafting support for sprinkler standards in the shape of Björn Schaumburg, who used to work for DIN (the German equivalent of BSI). Björn is funded by more than a dozen EFSN members, all of whom wish to see more rapid progress in the creation of European sprinkler standards. Initially he will support the current work programme, which covers EN 12845, the above deluge valve standard, residential sprinkler standards (see below) and pump standards. The UK has always been at the forefront of commercial sprinkler standards, with EN 12845 largely based on preceding British standards and insurance guidance. The same holds true for residential sprinkler systems. In August the members of CEN (BSI is the British member) approved EN 16925, a new European residential sprinkler system design and installation standard. BSI delegates contributed more to the drafting than any other national delegation. 20 national standards bodies voted in favour. One, BSI, voted against and submitted several comments in support of its negative vote. At the time of writing it is not certain whether any of these comments will delay publication of EN 16925 but it is perhaps indicative that AFNOR, the French equivalent of BSI, shows on its web site that it plans to make the French version of the standard available from 19 February 2019.

To complement EN 16925, a sprinkler head component standard, EN 12259-14, has also been drafted and is now with BSI and the other national standards bodies for comment. The EFSN and its members support sprinkler campaigns in Belgium, France, Germany, Netherlands, Poland, Sweden and the UK. Thanks to these campaigns, sprinklers are more often seen as a potential solution for fire safety challenges. Their benefits are better understood by fire safety designers and officials so national sprinkler markets are growing, particularly in countries where officials are used to accepting alternatives to the passive fire protection measures in prescriptive codes.

Sometimes the alternative solutions are codified. This year we have seen new requirements and incentives to fit sprinklers in underground car parks in Belgium and France, and a new fire safety code in Finland that introduced many incentives to fit sprinklers. One of those incentives was in wooden buildings, where sprinklers are required if they are three to eight storeys. Wooden construction is increasing across Europe and causing some alarm. A French government-funded research project on the use of wood in buildings will include an assessment of the benefits of fitting sprinklers. Meanwhile in Belgium tests will be run on sprinklers in underground car parks. Not every campaign is about market development: earlier this year we secured an exemption from Flemish emissions limits for diesel engines used to drive sprinkler pumps.

We are still not active in some major European countries. To that end, our next conference Fire Sprinkler Europe 2019 will be held in Madrid on 27th March 2019. This one-day, bilingual conference will be an opportunity to catch up on developments in sprinkler standards and research. See firesprinklerinternational/madrid/ for more information.
A first for BAFSA & IPS

Congratulations to IPS FlowSystems Limited who have successfully achieved BAFSA Course Accreditation in respect of their CPVC training for fire sprinkler installers.

IPS FlowSystems, based in Seaham, Co. Durham have been supplying CPVC fire sprinkler systems for almost 25 years and its Managing Director Kevin Curran said:

"BEING THE FIRST ORGANISATION TO ACHIEVE BAFSA COURSE ACCREDITATION, IS A REAL ACHIEVEMENT AND RECOGNISES THE HARD WORK AND COMMITMENT OF OUR EMPLOYEES AND IS SOMETHING THAT WE ARE REALLY PROUD OF."

Residential Zone Guardian

Following the highly successful launch of their Zone Guardian remote flow switch testing device in late 2016, and its LPCB approval in summer 2017, Sale Engineering Products (SEP) have received a steady stream of customer requests, both directly at Sale Engineering Products and through our nominated distributor Zeffire Ltd, for smaller pipe sizes for residential applications.

Ever striving to meet our customers' exacting demands, SEP have now developed what is referred to as their "ZG-resi" which is available in both steel and CPVC, in 1”/25mm, 1¼”/32mm and 1½”/40mm. Whilst not yet LPCB approved (which will be driven by customer demands) SEP believes these will be a successful supplement to their existing 'commercial' range (pipe sizes from 2” to 6”) which has been flying out of the door.

LPCB accreditation

Congratulations to BAFSA member, FSE Fire Safety Systems Ltd (T/A FSE Sprinklers & Risers) for achieving LPCB accreditation LPS 1301 on 3RD July 2018. The design team at FSE are pretty 'chuffed' to say the least with themselves reports Stuart Rye, "our sprinkler business continues to grow with more staff added to the engineering and administrative team in order to keep pace with our customers demand. We believe 2019 will be just as exciting!"

New owner for ITF

BAFSA member International Tube & Fittings (ITF) has been purchased by CMT Engineering. Owner and CEO Anjali Agrawal says, "This acquisition is wonderful news for CMT. ITF’s business is a perfect fit with our own, allowing us to offer a wider product range to our customers.”

Sales Manager Steve Pickett is equally enthusiastic. “The Borusan tube and Mech Brand malleable fittings that ITF stock both have an excellent reputation for quality.”
New storage protection options

Throughout North America and globally, NFPA 13 is one of the most widely used standards for the design and installation of fire sprinkler systems. This standard has existed in one form or another since 1896, and after undergoing more than 60 revision cycles, has grown to over 500 pages. The 2019 edition has been available since August 2018 and in addition to a complete restructuring of its chapters, it features some exciting new options for protecting storage risks.

Now for the first time, designers are able to realise the benefits of Extended Coverage sprinklers for in-rack sprinkler systems. Combined with horizontal fire barriers, Extended Coverage In-rack Sprinklers can protect high hazard commodities with low water demand and at less cost than before.

Water demand is minimised because the overall system flow demand is determined by either the ceiling-level sprinklers or the in-rack sprinklers, whichever is the higher demand (not the two combined, as required by traditional in-rack protection schemes.)

Costs are subsequently reduced because of the reduced water storage requirement and also fewer in-rack sprinklers & less pipework is needed – this also means installation times can be reduced.

This new protection scheme, which has its origins in the research pioneered by Reliable at Underwriter’s Laboratories in the U.S.A., is now featured in section NFPA13 25.8.3. and is suitable for category I-IV and Cartoned & Exposed Group A plastics.

As well as the cost savings, one of the big attractions of this scheme for Warehouse Operators is the elimination of Face Sprinklers. Instead, water from pendent Extended Coverage sprinklers, located centrally between pallets, reaches across the aisles to protect the aisle facing side of storage on adjacent racks either side as well as protecting the flue spaces between pallets.

Approved line of nitrogen generators

The CE approved Potter IntelliGen® (EU) line of nitrogen generators utilise patent pending intelligent corrosion prevention technology which facilitates every aspect of the nitrogen generators including pressure, runtime, power, connectivity, and operational mode. This ensures that the unit is working at optimal performance. Using proprietary algorithms, the IntelliGen® can determine if the unit needs to be in Bypass Mode or Nitrogen Generating Mode. Also, by monitoring the generator activity, the unit can indicate development of sprinkler system leaks, user interaction, and if maintenance needs to be performed on the generator.
ONE OF THE questions I have asked of me time and time again by employers, is whether they should invest and train to develop their employees. The simple answer is, “yes” as there are many added business benefits. So, what exactly are the benefits of training and development for the employer?

The main benefits for the employer can include:

- Improved productivity and profitability;
- The ability to embrace new trends and technologies without suffering from skill shortages;
- Opportunities for business growth;
- Improved product or service quality;
- Improved customer satisfaction;
- Greater flexibility to adapt to new and changing markets;
- Better employee attitude and time management;
- Less wastage of valuable materials;
- Reduced absenteeism;
- Better communication and leadership skills;
- Fewer workplace accidents;
- Lower maintenance costs for capital equipment;
- Greater opportunity to promote from within; and
- Reduced external recruitment costs.

**What about the employee?**

The main benefits for the employee can include:

- Improved knowledge and skills;
- A greater understanding of the business;
- The opportunity to gain nationally recognised qualifications;
- Better promotion and salary prospects;
- Greater job satisfaction; and
- Better motivation and morale.

If you need further convincing, bear in mind that employers are under a legal duty to provide all their workers with all necessary information, instruction and training to ensure their health and safety. There is no other legal duty to provide occupational training or employee development. However, employers who fail to provide occupational training and then dismiss an employee on the grounds of poor performance, may have difficulty in convincing an employment tribunal that the dismissal was fair.

So, the combination of a long list of business benefits and legal requirements should provide enough compelling reasons to make training and development a key part of any business strategy. Remember that to be effective, training and development is not a “one off” or occasional activity, it is part of an ongoing process.

BAFSA has invested significantly over the last years, at member requests, to ensure a qualification and training is available for those installing fire sprinkler systems be it residential, domestic, commercial or industrial. With five major colleges now providing this training across the UK it is difficult to see why courses are not completed filled by BAFSA members. At present non BAFSA members are often the first to enrol.

Colleges delivering the Level “Certificate in Fire Sprinkler Installation are keen to work with BAFSA and employers by being as flexible as possible, although minimum numbers will always be a requirement for a course to run.

To register your interest in a future course please contact qualifications@BAFSA.org.uk

HERE RUTH OLIVER, BAFSA SKILLS & QUALIFICATIONS EXPERT REFLECTS ON THIS BURNING QUESTION
BAFSA has introduced a Course Accreditation scheme in accordance with BAFSA’s intention to recognise high quality training and endorse it with the aim of increasing the availability and quality of training available to everyone who works in the sector. We can all recognise that “accreditation” stands as a mark of quality for the training that businesses have already put in place but what benefits does this mark of quality really bring?

As well as being an investment for the organisation itself, and its employees, accreditation is also viewed as a prerequisite to success. High quality training becomes a vital component of an organisation’s consistency towards working standards and practices. Course Accreditation is the formal recognition that ensures training is meeting the appropriate criteria for best practice and that it meets or exceeds nationally recognised training standards.

Accreditation promotes accountability. It is the ultimate measure of quality, it is a professional seal of approval that assures clients and employees that the training they are undertaking has met rigorous standards and is a genuine quality assured programme.

Of course, various types of accredited training bring about key sector-specific benefits, but it is also possible to distinguish some more general positive consistencies. Adding accreditation to in-house training brings about key sector-specific benefits, as well as in-house training schemes for the sector, giving employers and individuals confidence that the training they are considering has been approved by the trade association.

First to achieve BAFSA course accreditation was IPS Flow Systems Limited, who have successfully achieved BAFSA Accreditation in respect of their CPVC training for fire sprinkler installers. IPS Flow Systems have been supplying CPVC fire sprinkler systems for almost 25 years and have always put great emphasis on product awareness and installer training. Kevin Curran, Managing Director, said “we were delighted to support the BAFSA skills and development committee in the development of the L2 Qualification and now, being the first to achieve BAFSA course accreditation, is a real achievement. The company, which was one of the first to gain the prestigious ‘Investor In People’ Gold Award continues to demonstrate the importance of investing in skills and training.

Shortly after IPS had achieved its unique status, Technical Innovation Services which works alongside Utility companies to provide solutions, efficiencies and cost savings through a whole range of key services secured accreditation for its Socket-Fusion Welding course.

To find out more about BAFSA Course Accreditation visit bafsa.org.uk/bafsa-course-accreditation/

London Commissioner commends college

Attending London South East Colleges’ unveiling as BAFSA’s preferred provider in London and the south of England to deliver the IQ Level 2 Certificate in Fire Sprinkler Installation qualification course Dany Cotton, the London Fire Commissioner said, “Sprinklers play a really significant role in reducing the impact of fire on people, property and the environment and London Fire Brigade has long been campaigning for sprinklers to be included more widely as a matter of course. I am delighted that London South East Colleges and BAFSA have got together to introduce this first of its kind qualification - colleges have a real role to play in equipping people with skills to help make everyone safer.”

The qualification, developed by BAFSA is aimed at individuals employed in the fire sprinkler industry and is designed to help people employed in installing fire sprinklers to develop the knowledge and competencies necessary to meet the industry installation standards.

Rob Lynch, Head of Kidbrooke Construction Skills Centre said, “Our first cohort of trainees start in November and London South East Colleges is delighted to have the opportunity to deliver such a well-respected course. Both organisations are committed to ensuring that those working in the sector have the skills they need to ensure that sprinkler systems are fitted to the highest professional standards.”

Speaking at the launch event Ruth Oliver, BAFSA Consultant said, “We are delighted to announce London South East Colleges as the fifth preferred provider to offer this course. This national qualification will enable those operating in the industry to upskill and ensure that they have the right skills, knowledge and training required to meet the challenges of the 21st Century.”
Put a firefighter in every room

INSTALL SPRINKLERS
FOLLOWING THE GRENFELL TOWER FIRE, QUESTIONS WERE RAISED ABOUT THE PART THAT BUILDING REGULATIONS PLAYED IN THE TRagedy THAT CLAIMed THE LIVES OF 72 PEOPLE AND INJURED OVER 70 OTHERS. CONSEQUENTIALy, ON THE 28TH JULY 2017, AMBER RUDD, (THEn HOME SECRETARY), AND SAJID JAVID, (THEn COMMUNITIES SECRETARY), COMMISSIONED DAME JUDITH HACKITT TO CONDUCT A REVIEW INTO BUILDING REGULATIONS AND FIRE SAFETY. IAN GOUGH, BAFSA TECHNICAL ADVISER CONSIDERS THE REVIEW.

THE REVIEW HAD a PARTICULAR FOCUS ON REGULATIONS AS THEY APPLY TO HIGH-RISE RESIDENTIAL BUILDINGS AND SHE PRODUCED AN INTERIM REPORT IN DECEMBER 2017 WITH A FINAL REPORT1 PUBLISHED IN MAY THIS YEAR.

The key findings of the report can be summarised as follows:

- a general ignorance of the regulations and guidance
- a lack of priority on safety measures for the sake of keeping costs low
- a lack of clarity on roles and responsibilities
- inadequate regulatory oversight and enforcement

With over 150 pages of text and complex diagrams, Dame Judith’s report is no easy read and I suspect many within the sprinkler industry who have taken more than even a cursory look at the document, will question the relevance of such a tome to the fire sprinkler industry. However, the document does contain some important and useful recommendations - and not just in relation to ‘higher risk residential buildings’ (HRRBs).

Note: HRRBs are defined as being new and existing high-rise residential properties which are 10 storeys high or more.

Responsible testing & marketing

BAFSA is increasingly being asked to express views on the use of automatic fire suppression systems that do not comply with recognised design and installation codes of practice. Usually these enquiries relate to residential and domestic occupancies but recent examples are being unearthed of products being installed in commercial properties.

Importantly, it should be recognised by anyone specifying fire protection products - but particularly building control authorities who are clearly approving the use of them - that the recommendations emanating from Chapter 7 in Dame Judith’s Report, regarding product specification and testing, applies just as much to automatic fire suppression systems and any other safety critical product as it does to insulation and cladding materials.

As a consequence, we should all take every opportunity to remind others, including would-be customers, of the importance of this report and the liabilities that could now clearly come from ignoring these recommendations.

Patchy levels of competence

The Review identifies a need for competence in those responsible for fire prevention matters in design, construction and management.

The building industry as a whole is criticised for ‘patchy’ levels of competence but Dame Judith makes a particularly interesting proposal in relation to those who install and maintain fire safety systems (such as sprinklers and water mist systems) and other safety-critical systems.

She suggests that all bodies representing active and passive fire safety system installers should come together to agree a comprehensive and coherent framework for ensuring competence of their workers and any enhanced levels of competence necessary for working in higher risk residential buildings.

Whether or not BAFSA feels a need to join forces with other bodies is something that will generate a wide range of opinions and much debate but there can be no doubt as to the importance of the work currently being done in relation to vocational training and accreditation of installers and system designers.

Happily in this area, BAFSA is probably ahead of many other disciplines within the fire sector but it will be of vital importance to our industry to continue ensuring that the workforce is properly trained and qualified and can provide evidence that this is the case.

Moreover, as many of our members are increasingly taking on work in higher risk residential buildings—and with much more to come—it would be prudent to take note of such warnings and invest both in the current IQ Level 2 Certificate in Fire Sprinkler Installation (QCF) and also see progress made with the development of the proposed Level 3 Qualification in 2019.
Exhibitor profiles

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FIRE PROTECTION ASSOCIATION
The Fire Protection Association is the UK’s not-for-profit national fire safety organisation, we author and supply the UK’s most significant sprinkler installation standard, the LPC Sprinkler Rules. The rules incorporate the BS EN 12845 standard and additional technical bulletins, for a comprehensive and authoritative guide to best practice in Sprinkler installation and maintenance. The FPA is unrivalled in experience and expertise where Sprinkler installation and maintenance standards are concerned, so you can be sure that you are receiving the highest quality service in accordance with the very best practice. This expertise combined with use of our fire testing laboratory means the FPA is one of the leading sprinkler testing and training facilities in the UK. We offer the following services in order to assist you:
- Sprinkler Inspection Service
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As a prominent pump manufacturer, Grundfos also offers a wide range of fire pump systems that are designed to operate within both sprinkler and water misting applications. These systems can be installed in a range of situations that include: individual homes, a wide range of commercial and industrial applications, as well as within high-rise settings. Because of the plug ‘n’ play nature and versatile installation, Grundfos’ systems can be retrofitted to address existing risk as well as being deployed in new builds.

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28 | bafsa.org.uk
HENDERSON INSURANCE GROUP

Henderson are proud to be members of BAFSA and support the members as we have been supporting the Fire Protection Industry for over 15 years. Henderson are the leading insurance broker for the sector and can offer a full portfolio of insurance products including both motor and non motor. The cover arranged will always include inefficacy extensions amongst over important sector requirements with the support of specialist insurance facilities provided by top UK insurers. The claims service offered is from cradle to grave with dedicated fire protection claims handlers who guide our clients through following incident.

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IPS – for exceptional service & support
IPS Flow Systems have been involved with the fire sprinkler industry for over 25 years and were instrumental in the introduction and development of the CPVC fire protection range of products. CPVC offers all of the fire protection and reliability of traditional piping systems whilst offering a lower total installed cost, compared to systems made from metallic materials.

IPS provides unrivalled service and support to the industry, our stock holding allows us to ship over 98% of orders complete on time, first time. We have always put great emphasis on product awareness and installer training which is offered as part of 3rd party accredited quality assurance system.

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INTERNATIONAL FIRE CONSULTANTS (IFC GROUP)

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RELIABLE

Reliable Automatic Sprinkler Co., Inc. is a global manufacturer and distributor of fire protection products. Reliable manufactures the highest quality and most innovative fire sprinklers, valves and special systems on the market; distributes a full line of best in class system components; and backs it up with premier customer service. Reliable’s corporate headquarters is located in Elmsford, NY; manufacturing plant in Liberty, SC; international headquarters located in Crawley, United Kingdom; and regional sales and distribution centres across the world.

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SALE ENGINEERING PRODUCTS

Sale Engineering Products (SEP) has been a manufacturer and supplier of “specialist products for the fire sprinkler industry” for over 25 years. Following a change in ownership in 2014, we are fully focused on our new ethos of “Responsive, Flexible and always High Quality” – this, along with ongoing product development and improvement, is helping us grow rapidly and provide an elite service to the industry. We are well known for our air compressors, pump initiation boards, alarm valve booster pumps and latterly our LPCB-approved ZONE GUARDIAN.

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VICTAULIC

Victaulic® innovation began in 1919 with the first grove-end mechanical pipe jointing technology. Today, Victaulic technology includes a complete offering of sprinklers, couplings, fittings, valves, accessories and tools to meet the needs of any fire protection application. One of Victaulic’s revolutionising innovations is the FireLock® IGS line. And, as with most Victaulic products, visual confirmation of pad-to-pad installation ensures leak-free joints for increased customer confidence. Other Victaulic products that made an impact on the market include the FireLock NAXTM devices, the VicFlexTM Flexible Sprinkler Fittings and the Installation-ReadyTM coupling and fittings. All these products guarantee a fast and secure installation.

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VIKING

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