

sprinkler focus

British Automatic Fire Sprinkler Association

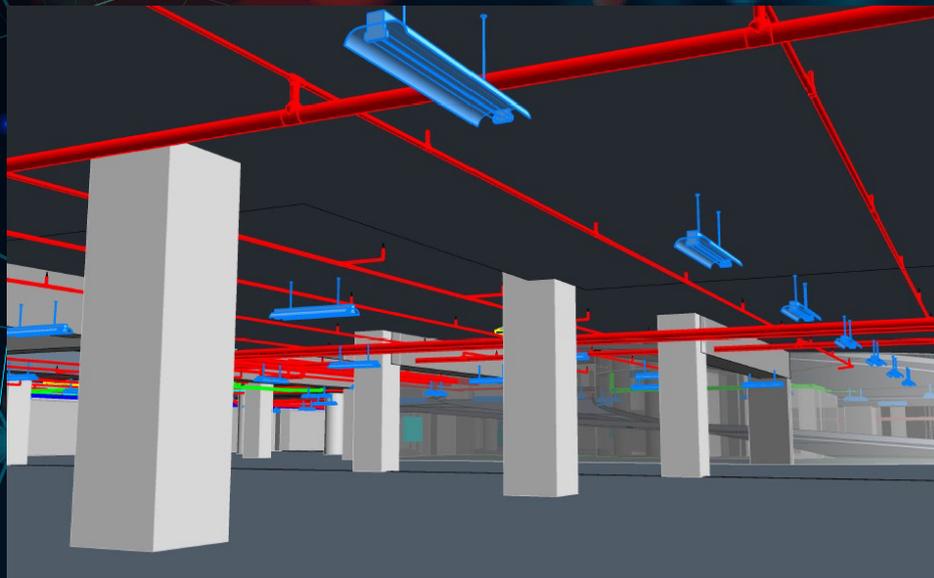
bafsa

NOVEMBER 2020

**Destroyed in England & Northern Ireland,
protected in Scotland & Wales ...**

**Why should it
be like this?**





Sprinkler System Design Courses from BAFSA

BAFSA delivers a range of Sprinkler System Design Courses for experienced engineers across the UK.

4 different courses will be available in 2021 :

Basic

Intermediate

FHC

Inspectors

The courses will be available online until such time as Government Guidance allows us to deliver them face to face.

In certain circumstances and subject to minimum numbers we may be able to offer bespoke courses in-house and face to face.

Interested in reserving a place on a course?

Please contact BAFSA ce@bafsa.org.uk,
and let us know your requirements for courses
and the number of places needed.

British Automatic Fire Sprinkler Association

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Front cover image courtesy of David Cadzow

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.

British Automatic Fire Sprinkler Association

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Designed by RIASCA

A word from the Chairman

WELCOME TO OUR Winter edition of Focus, I hope you and your families have managed to stay safe and healthy throughout this pandemic.

To say this has been a difficult year is an understatement, the huge loss of life and the implications for mental health and well being alone are far beyond our normal comprehension and I am certain we will see the fallout from this for many years to come.

In terms of the sprinkler industry it has been problematic in ensuring that our workforce remain safe and that we are able to deliver as close to business as usual. Certainly, in the early days of the pandemic and lockdown, many businesses in the industry struggled to ensure that contracts were dealt with and government guidelines complied with to ensure worker safety. New words came into daily use such as lockdown, furloughed, Zoom, Teams, WebEx, sanitiser and mask.

However, now we are nine months into the situation and despite some very high infection rates we are beginning to see some glimmers of hope, vaccines are being produced and there is discussion of how these will be administered. Let’s hope that by the time the next edition of Focus is produced that we will be in a much happier situation.

Indicators in the industry are that business is buoyant and that it is outperforming many other parts of the construction industry, we are gaining recognition for supplying quality products installed by a competent workforce.

Our plans for the year of expanding our training courses were put on hold as all the Colleges were closed from March to September. By the time the colleges were able to reopen in August we were able to

launch the L2 EWR Course wholly online including the practical assessment. This has resulted in a reduction in the course fees, together with less time away from the workplace. This method of study also allows the company and worker greater flexibility and a reduction in travel and accommodation costs.

Similarly, all of our design courses were also put on hold together with the accreditation examinations. We have now developed a package whereby all four of our design courses can be delivered online and we will be delivering the courses throughout 2021.

With the BAFSA Team we are now producing a series of online seminars to be held in 2021 until such time as the Government guidelines allow us to resume face to face presentations.

The changes to fire safety following the tragic Grenfell fire over three years ago continue to make headlines as the public inquiry progresses. At long last UK Governments are making changes to their Building Standards to require sprinklers in high rise dwellings and in Scotland in all social housing and houses in multiple occupation. This month has also seen the Northern Ireland Government go out to tender to install automatic fire sprinklers in many of their high-rise blocks, not something that has happened before. This is real progress and in the future sprinklers will become the normal in all new built housing in the UK.



JOHN McCANN
BAFSA CHAIRMAN

480 school fires in 2019

A new study from Zurich Municipal reveals 480 primary and secondary schools endured fires in 2019, a staggering 40 incidents every month.

As a result, almost 20,000 school children have had their education impacted or have been displaced from their usual school building over the same period. The research was compiled by the Zurich data science team through a freedom of information request to the UK Fire and Rescue Services.

Further data analysis by Zurich, a leading insurer of schools in the UK, shows that last year over 15,000m² of classroom space was damaged during blazes last year across 271 primary and 209 secondary schools. Only 2% (seven) of the schools had sprinkler protection in place. According to official figures, only 15% of all new schools built and open in the UK since 2011 have been fitted with sprinklers. Whilst sprinklers are compulsory in all new or major refurbished school buildings in Scotland and Wales, this is not the case in England.

Firefighters have been called to nearly 2,000 school blazes in England alone in the last three years. Malfunctioning appliances or equipment, faulty electrics, arson and kitchen blazes are among the leading causes of school fires. Larger fires in schools cost on average £2.8 million to repair and in some cases over £20 million.

Tilden Watson, Head of Education at Zurich Municipal, said: "As well as protecting pupils, sprinklers drastically reduce the extent of damage when there is a blaze, often confining the fire to a single room. This gets children back into schools and classrooms quicker as well as saving taxpayers' money?"

Andy Dark, Fire Brigades Union assistant general secretary, commented: "The poor standard of fire safety provision in our schools is nothing short of a scandal. Raising the level of fire protection and prevention in schools ticks all the boxes: protecting the education of students; protecting the community assets which the school infrastructure provides; reducing the damage caused by smoke and fire; and reducing the risks to both school-users and the firefighters who are called upon to extinguish the fires. It's time for the government to stop prevaricating. It's time for MPs of all parties to press for the government to urgently introduce the mandatory fitting and retro-fitting of sprinklers in all schools."

News

Current work in fixed firefighting systems' standards

BS 5306-0

(Selection of firefighting equipment)

- Major revision published August 2020
- Much improved; significant new guidance included
- Contains much new guidance on system selection and how to match systems to hazards and protection objectives
- Recommended reading for those in the sector <https://shop.bsigroup.com/ProductDetail?pid=000000000030388486>

EN 12845

(Commercial and Industrial sprinklers)

- Major revision underway (since 2012).
- Many changes: some good, some perhaps not so good for UK
- Debate to be held after BAFSA AGM (19th November) on pros and cons of the new version for UK. Sprinkler Installer companies urged to engage.
- EU wide public enquiry (consultation) on the draft and 1st vote expected next year (2021)

EN 14972-1 (Mist)

- Has passed public enquiry (consultation) and final vote.

UK consistently voted against. Will be published as EN.

- UK has serious doubts and concerns about it.
- UK has wide-ranging formal complaint lodged with CEN.
- BSI advise UK intend to continue to use BS 8489 series (?)

BS 9251 (R&D Sprinklers)

- Revision ongoing
- Enhanced requirements for high(er) rise buildings (~>45m): enhanced water supplies, additional resilience measures
- Several clarifications (residential vs non-residential occupancies, alarm and fault signally requirements)

Pumps (LPCB LPS for R&D pump sets, EN 17451 and EN 12259-12 CEN standard for commercial and industrial pumps and sets)

- Drafting work ongoing on all three standards – should result in many new and clarified requirements for each type of pump (pump sets are complex and critical components; lack of standards is not ideal).

A sad loss

BAFSA is sorry to report that Nick Hunt, of West Midlands Fire Service, passed away suddenly and unexpectedly on 2nd November.

Nick was a valued contributor to BAFSA's Communications & Market Development Committee and latterly found a passion for protecting heritage. His daughter Frances was very keen that the members of the Heritage Fire and Safety group know how proud Nick was of being part of the group and how much he supported its work.

Nick has been instrumental in so much work that the SIG has completed, indeed he recently submitted some suggestions on the review of the FPA guide. Nick also did so much through the CFOA groups and the production of guidance for West Midlands and neighbouring fire services. In addition to being such a professional, Nick was such a nice guy and will be greatly missed by family, friends and colleagues.

Future requirements under CPR

The British government has published its future requirements for products under the CPR when sold in the UK: <https://www.gov.uk/guidance/construction-products-regulation-from-1-january-2021>. General advice on using the UKCA mark was also published: <https://www.gov.uk/guidance/using-the-ukca-mark-from-1-january-2021>

As we understand, anything for which you now have to apply the CE-mark under a harmonised standard will also need the UKCA mark as of January 2022. So you have 15 months to get everything ready.

Only laboratories present in the UK can help with this process and once the laboratories have been identified which can help with sprinkler products have been announced. The FIA, BSIA and others have already written to the UK government on this subject and the position of the UK industry is that 15 months is not long enough and should be 3 years minimum.



Petitioning for sprinklers in schools

As part of its ongoing campaign to encourage the Government to update Building Bulletin 100 to require mandatory sprinklers in all new build and majorly refurbished schools, Zurich has launched an online parliamentary petition <https://petition.parliament.uk/petitions/549558> to generate interest amongst parents, guardians, carers, and the wider general public to create a groundswell of interest in school fire protection and safety and the current anomaly where schools in Wales and Scotland are sprinkler protected but those in England are not.

As we all aware, petitions which gather over 100,000 signatures will be considered for a debate in Parliament and additional pressure can be put on the Government as it launches the consultation into Building Bulletin 100.

31 tower blocks to get sprinklers in Northern Ireland

The Northern Ireland Housing Executive (NIHE) has set aside nearly £8m to fit sprinklers in 31 tower blocks. The NIHE wishes to procure suitably qualified and competent contractors for the survey (full scale survey), design and installation of sprinklers to the 31 residential tower blocks.

Currently it is envisaged that the NIHE will put in place 3 contracts (approximately 10 blocks per contract), this is subject to the final procurement strategy being agreed. The tower blocks which date from the 1950s-1960s, comprise of 1926 flats which primarily consist of two bed accommodation, with 275 now privately owned.

We finally achieve change

This was the day we finally got the change to Building Standards in Scotland, where it will now be mandatory to fit automatic fire sprinklers to all flats, social housing and houses in multiple occupation.

SCOTTISH STATUTORY INSTRUMENTS

2020 No. 275

BUILDING AND BUILDINGS

The Building (Scotland) Amendment Regulations 2020

<i>Made</i>	7th September 2020
<i>Laid before the Scottish Parliament</i>	9th September 2020
<i>Coming into force</i>	1st March 2021

The Scottish Ministers make the following Regulations in exercise of the powers conferred by sections 1 and 54(2) and schedule 1 of the Building (Scotland) Act 2003(1), and all other powers enabling them to do so.

In accordance with section 1(2) of that Act they have consulted with such persons as appear to them to be representative of the interests concerned.

Citation and commencement

1. These Regulations may be cited as the Building (Scotland) Amendment Regulations 2020 and come into force on 1 March 2021.

Amendment of the Building (Scotland) Regulations 2004

2.—(1) The Building (Scotland) Regulations 2004(2) are amended in accordance with paragraphs (2) and (3).

(2) In regulation 2(1) (interpretation)—

(a) omit the definition of “high rise domestic building”,

(b) after the definition of “sanitary facility” insert—

““shared multi-occupancy residential building” means a residential building occupied as a sole or main residence by more than six individuals where those occupying the building, or part of the building, share the use of sanitary facilities or facilities for the preparation of cooked food with other persons occupying the building, or part of the building,”

(c) after the definition of “site” insert—

““social housing dwelling” means a dwelling occupied by virtue of a Scottish secure tenancy within the meaning of section 11 of the Housing (Scotland) Act 2001(3),”.

(3) In schedule 5 (building standards applicable to design and construction) in the limitation to the standard contained in paragraph 2.15 (automatic fire suppression systems)—

(a) omit paragraph (c),

(b) at the end of sub-paragraph (d) omit “or”,

(c) after paragraph (e) insert—

“(f) is a building containing a flat or maisonette,

(g) is a social housing dwelling, or

(h) is a shared multi-occupancy residential building.”.

KEVIN STEWART

Authorised to sign by the Scottish Ministers

EXPLANATORY NOTE

(This note is not part of the Regulations)

These Regulations amend the Building (Scotland) Regulations 2004. They amend building standard 2.15 in paragraph 2.15 of schedule 5 of those Regulations and insert relevant definitions into regulation 2. Building standard 2.15 requires certain buildings to be designed and constructed in such a way that, in the event of an outbreak of fire within the building, fire growth will be inhibited by the operation of an automatic fire suppression system. The amendments extend building standard 2.15 to apply to buildings containing flats or maisonettes, social housing dwellings and shared multi-occupancy residential buildings.

Bernadette Hartley Award 2020 : Nicholas Coleshill, London Fire Brigade

This year the award goes to a man who over the last four years has demonstrated that despite having little previous knowledge of sprinklers, he could gain these technical skills by his own efforts and become an advocate for fire sprinklers in the UK's largest city.

NICHOLAS COLESHILL is retiring after thirty years' service in London Fire Brigade. Four years ago, Nick took over as the Sprinkler Coordinator for London Fire Brigade. Nick had no previous experience of automatic fire sprinklers, so in true fire brigade tradition this made him ideal for the job.

He immediately set about educating himself regarding fire sprinklers and their application.

Part of this process involved his networking within the sprinkler community throughout the UK and on occasions asking difficult questions regarding standards and accreditation and how these should be applied.

He ensured that the knowledge he gained was shared within the sprinkler community and in particular London Fire Brigade and its boroughs.

Part of this programme was to ensure that the Sprinkler Ambassadors in all the boroughs were well prepared and educated in the application of sprinklers.

He set up a CPD programme and invited both Tom Roche from the Business Sprinkler Alliance and me from BAFSA to set up these sessions and allowed Stewart Kidd and Ian Gough to deliver them.

With his usual dedication and eye for detail, Nick has already set up the next BAFSA CPD Day for the Ambassadors next Spring together with the London Fire Brigade/BAFSA Sprinkler Seminar for November 2021 so his successor will be able to hit the ground running.

I have been impressed by his dedication to the sprinkler cause, going far beyond the requirements of his role in London Fire Brigade. He has also ensured that his senior officers were well briefed to deal with politicians, the public and the media. As is often the case and I know having been one of those senior officers, we got the kudos however the real heroes were those in the background who prepared the work for us and allowed us to deliver a seamless presentation.

"It gives me great pleasure to congratulate Nicholas Coleshill on being awarded the Bernadette Hartley Award, for his work in promoting the use of sprinklers in London and London Fire Brigade."

**KEITH MACGILLIVRAY,
BAFSA CHIEF EXECUTIVE**



I am extremely grateful on behalf of BAFSA, NFSN, EFSN and the BSA for the promotion Nick has given to UK and European Standards together with advocating the use of Third-Party Accredited Installers. Have a long, happy and healthy retirement Nick, although I suspect we will see you again very soon in the sprinkler community.

**Put a firefighter
in every room**

**INSTALL
SPRINKLERS**

bafsa.org.uk

British Automatic Fire Sprinkler Association
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Who was Bernadette Hartley?



MANY NEWCOMERS TO THE SPRINKLER INDUSTRY WILL BE UNAWARE OF THE BACK STORY AND HISTORY BEHIND THE BERNADETTE HARTLEY AWARD AND WHO BERNADETTE HARTLEY WAS... A PASSIONATE AND ENTHUSIASTIC FIRE SAFETY CAMPAIGNER BUT THAT WAS IN LATER LIFE, FIRSTLY ASKS KEITH MACGILLIVRAY, BAFSA'S CHIEF EXECUTIVE, WHAT WAS HER BACKGROUND TO HER CAMPAIGNING?



BERNADETTE WAS BORN and brought up in East Kilbride, South Lanarkshire where her mother was a Labour Party Activist and the Election Agent for Tam Dalyell MP and her father was a further education lecturer. Sadly her father passed away when Bernadette was only nine.

Bernadette went on to become Head Girl at Holy Cross School in Hamilton and then to graduate in Geography and Politics at Glasgow University.

She then followed a career in teaching in the Merseyside area, concentrating on geography and economics. Bernadette then became Deputy Head of Croxteth Community Secondary School followed by Head teacher at Anfield Community Secondary school which became the first inner-city Beacon of Excellence School under the government funded programme.

In the 1990's she moved to Gloucestershire where she continued to work in areas of urban deprivation and poverty. She chaired the county's network of neighbourhood centres and was co-founder of the Gloucestershire Neighbourhood College.

A confirmed socialist and Labour Party activist like her mother, Bernie stood as the Labour candidate in the European elections but unfortunately was unsuccessful. However, her campaigning in Europe gave her a broad network of contacts which were soon to be put to good use.

Following a serious warehouse fire in Gloucester where she lived and remembering a tragic fire in nearby Hereford some years before where two Firefighters were killed, she started campaigning for sprinklers to be installed in warehouses and other properties where lives could be put at risk by fire.

Ironically, Bernadette was campaigning for sprinklers in schools in England back in 2006 and she organised a meeting with the then Secretary of State for Schools, Jim Knight MP. Bernie would be horrified that we are still campaigning for a review of BB100 in order to get sprinklers fitted in all new build schools in England!

Bernadette's contacts in Europe and the UK were put to good use to push for greater use of sprinklers throughout Europe and the UK.

I had the honour and pleasure of accompanying Bernadette on many campaign

trips to European capitals, the European Parliament, House of Commons and Scottish Parliament to drive home the message for sprinklers.

She was a very persuasive and eloquent campaigner and an excellent representative for the sprinkler industry.

Sadly, Bernadette passed away in 2008 aged only fifty-seven, leaving her partner Brian and daughters, Barbara and Amy.

I visited her during her final days and right to the end her thoughts were not on her illness but on the campaigning that had still to be done and goals to be achieved.

Bernadette was taken far too soon and too young, yet her legacy lives on through the Bernadette Hartley Award.

Following her death, we felt it was appropriate to set up The Bernadette Hartley award in her name to mark the achievements of those who campaign and support the work to install sprinklers to protect the public and Firefighters throughout the United Kingdom. The nominations for the award come from the Members of the National Fire Sprinkler Network.

Sprinkler Saves

MAY



22 : flat Staffordshire

A total of five fire crews with an aerial ladder were called to a kitchen fire on the eighth floor of the city centre Lindop Court tower block in Stoke on Trent. The fire, believed to be started in a chip pan, had already been put out by a sprinkler system when firefighters arrived at the scene.

1 concealed sidewall sprinkler had activated. The building had been retrofitted and has a BS 9251 tank and pump system.

There were no casualties.

JUNE



24 : flat, Cardiff

BAFSA member RSP Sprinklers Wales received a call out to a small block of flats in Cardiff where their sprinkler system successfully extinguished a fire. The fire had started on an external balcony, igniting a gas canister which exploded and set off the sprinkler inside the flat. The sprinkler successfully extinguished the fire both inside the flat and out on the balcony where the flames were within reach of the sprinkler spray pattern.

The call was received at 1542; their engineer arrived on site at 1626 and had the block fully protected again at 1654.

JULY



3 : flat, Hampshire

A fire which broke out in the kitchen in a high-rise block owned by Southampton City Council was successfully suppressed by the sprinkler system with minimal damage. Hampshire Fire & Rescue Service attended with multiple units but had little to do but check that the fire was fully extinguished.

Without the sprinkler activation the fire would have engulfed the whole flat before the Fire & Rescue Service arrived on the scene.

The flat, along with the others in the block, and all other blocks in the city, has benefitted from a range of fire safety works in addition to the sprinkler system.

Southampton City Council takes resident safety seriously and there has been 3 high-rise fires over the last 12 months effectively controlled by the sprinkler system and other fire safety measures are a testament to this.

“Without the sprinkler activation the fire would have engulfed the whole flat”



21 : sheltered housing, London

On 21st July a call was received by BAFSA member Triangle Fire

Systems advising the company of a fire in a flat on the 4th floor in Thornton Heath. The call was a result of the sprinkler alarm signalling the call centre but when London Fire Brigade attended and forced entry they learned the fire had been extinguished by the activation of one sprinkler head. It appears the resident was using a bedroom as a prayer room and had left the property leaving a lot of incense candles burning, it is assumed that these were the source of ignition but it is unclear what the item first ignited was.

Triangle had retrospectively installed a BS9251 sprinkler system supplied by a tank and pump which was commissioned in December 2019. Triangle engineer attended site and the sprinkler head was reinstated and the system made live within 24 hrs.

BAFSA notes that a second sprinkler head in the hallway had got hot enough for the cover plate to drop off but not to activate the head... A perfect example of how accurate sprinklers are. They really do not go off all at once!

OCTOBER



4 : commercial, East Sussex

East Sussex Fire & Rescue Service has praised a business in Hastings for installing the sprinkler system, which stopped a small fire quickly spreading throughout the building. Upon arrival, crews found a small fire located in the fan unit, which had been quickly extinguished by the sprinkler system. Andrew Gausden, Business Safety Manager said: “This is a timely reminder to other companies to invest in a sprinkler system which could protect your business from severe fire damage. A sprinkler system really can make a difference, in 2019 we attended a similar fire locally which resulted in the total loss of a business – sprinklers would have made the difference.

“Sprinkler systems are designed to contain a fire ensuring businesses are often up and running within a short period of time due to limited damage”



16 : flat, Derbyshire

A portable misting system (PMS) activated in a flat in Glossop, protecting the 72 year old female occupant and preventing a potentially serious house fire from developing. The PMS that had been fitted to protect the occupant of the Glossop property, activated extinguishing a fire that had started in the microwave. The PMS was installed in June 2019 following concerns that the occupant was at a greater risk of fire and more vulnerable due to mobility issues that would have prevented her from escaping safely should a fire have broken out.

NOVEMBER



5 : commercial, Tyne & Wear

Tyne & Wear Fire & Rescue Service were called to a fire in a multi-occupied, Grade 2 listed building in Newcastle upon Tyne, which had been undergoing extensive refurbishment to include a basement café, ground floor bike shop, first floor bridal wear shop and apartments to the second and third floors.

To address a non-compliant layout under the Building Regulations the owner installed a BS9251 sprinkler system throughout the premises.

Towards the end of the refurbishment, decorators had been using linseed oil to treat oak beams in the second floor apartment. These linseed soaked rags self-ignited causing a fire, which activated one pendant sprinkler head immediately above the fire. This suppressed the fire until the arrival of the owner who was alerted by a fire alarm autodial function direct to his mobile phone.

Fire service actions were limited to turning over the burnt materials and finally extinguishing the small fire, smoke clearance using forced ventilation fans and some salvage work to limit water damage caused by sprinkler run off to the floors below.

IF ONLY ...

**AUTOMATIC FIRE SPRINKLERS
HAD BEEN FITTED**

3 school fires

Around midday on 28th May, Derbyshire Fire & Rescue Service received a call to attend a fire in the roof of Harrington Junior School in Long Eaton. The school was evacuated and everyone made safe and accounted for. But two firefighters sustained minor injuries at the scene but were released from hospital to recover at home.

Group Manager Dean Gazzard, who was the officer in charge at the fire said: "The Service sends its thoughts to everyone affected by the loss of Harrington School. Schools are at the heart of every community and we know the consequences of this fire will be felt heavily across the communities of Long Eaton."

Firefighters remained on scene damping down hot spots. A poignant statement was posted on the school website during the height of the blaze - it said: "Our beautiful, vibrant school is on fire. No children in school today. All safe. Emergency services attending. Please stay away to help. I am heartbroken."

On 3rd October 6 fire engines supported by 2 aerial ladder platforms and the control unit from Long Eaton were called to attend a fire at St Mary's School, Broadway, Darley Abbey. On arrival the firefighters were met with a well-developed fire. Despite the best efforts of the fire crews attending, sadly the school was destroyed. The fire at St Mary's came only 48 hours before fire crews attended another deliberate school fire, this second fire being at Ravensdale Infant School in Mickleover where 12 fire engines and two aerial ladder platforms from across Derbyshire attended the Ravensdale fire, supported by the command unit, water carrier and welfare unit.

Area Manager Clive Stanbrook said: "Crews worked swiftly to control the spread of the fire, with the fire now under control, however sadly large parts of the infant school have suffered extensive damage. We expect to have a presence at the fire throughout the day. Tragically this is the second school fire in Derbyshire in less than 48 hours."



"Our beautiful, vibrant school is on fire. No children in school today. All safe. Emergency services attending. Please stay away to help. I am heartbroken."



A joint investigation into the cause of a fire at Ravensdale School, Devonshire Drive, Mickleover on Monday 5 October 2020 has concluded that the fire was deliberate in ignition. A police investigation into the circumstances of the fire continues. The joint fire investigation into the cause of the fire at St Mary's School, on Broadway in Darley Abbey continues.

The fire that completely destroyed Harrington Junior School in May was most likely caused by hot works taking place during a refurbishment project, prompting calls for thermal imaging and hot work training for construction workers.



Twenty years on



A PENDING HOUSE move forced Ian Gough, BAFSA Technical Adviser, to begin clearing out his garage and loft recently in an attempt to purge his hoard of journals, papers, files and other various bits and pieces collected during the previous 23 years. His findings inspired him to reflect on where we came from and where we are now in relation to fire protection of large single storey warehouses.

Of course, the trouble always when doing such a job is that one invariably comes across the odd nugget or two (or more) and starts reading. Progress is therefore worryingly slow. Indeed, I'm almost now grateful for Boris' second 'lockdown' to enable me to finish the task.

Nevertheless, readers might find these 'nuggets' of interest – especially those in relation to the fire sprinkler industry, recorded in my office diary for the year 2000, and which I consider to have some significance.

The bulk of 2000 was, for me, taken up with other sprinkler related matters. In particular, a major one related to a storage building on the outskirts of Northampton - the City Logistics' warehouse.

City Logistics' Case

Much has been written about the legal case *City Logistics v County Fire Officer* and many will know that ostensibly the problem arose because a high bay warehouse of some 11,000 square metres was allowed to be built with escape distances that exceeded the Government guidance on 'travel distances' for normal risk buildings but without sprinklers. Few will know, however, that the case initially focused on first-aid firefighting equipment and not sprinklers.

The 'Immanis' building on the Brackmills Industrial Estate, newly occupied by the City Logistics Company, was duly inspected by an officer from Northamptonshire Fire & Rescue Service – an activity of the fire and rescue service I feel obliged to say would probably not happen today.

The warehouse was found to be stacked to the gunnels with all kinds of flammable items including: rubber tyres, white goods, artificial Christmas trees and drums of Isocyanate chemicals. The officer was particularly concerned that artificial Christmas trees could "be seen touching overhead light fittings".

Based on the knowledge then available from BRE tests that *'flame can spread from the bottom of a 10m storage rack to the top in 2 minutes'*¹ the officer correctly queried the firefighting capabilities of the few water extinguishers scattered around to deal with any fire. Indeed, the brigade's first 'notice of steps' in accordance with the fire safety legislation applicable², was to provide hose reels to deal with any fire in the storage racking but with an option given of fitting sprinklers.

At that time most if not all fire professionals believed that 'appropriate means for fighting fires' must be provided in all buildings and so this seemed a reasonable approach to take.

Appeal to Magistrates

City Logistics Ltd promptly 'appealed' because as a 'storage building' there was no requirement to have a Fire Certificate and they consequently hadn't any legal duty to comply with any notice. They also deemed unjust the requirement for either hose reels or sprinklers. They took the view, quite irresponsibly in most minds, that they were entitled not to protect their building from an unwanted fire and, should such an unfortunate event take

place, that their building could be considered 'sacrificial' and simply burn to the ground. After all, if the fire brigade couldn't extinguish any fire insurers would simply replace the building and its contents.

The case was initially listed to be heard by Daventry Magistrates (who on the day actually felt disinclined to hear the case) but outside the hearing it was conceded that the legislation did in fact apply to warehouses because along with items being stored, picking and packing of various goods took place inside the building. Under old legislation³ such storage buildings could be deemed to be factories; an important point of law still relevant today.

Moreover, it was suggested by counsel for City Logistics that the dispute should not really be about hose reels and fire extinguishers and so it was agreed to revoke the notice and serve a new one simply requiring sprinklers. The scene was therefore set for quite a battle no one then had any idea would ultimately lead to the Court of Appeal.

The Company, as expected, appealed this second notice and at a hearing in Northampton Magistrates Court the Justices dismissed the appeal and backed the fire brigade. However, not to be thwarted, City Logistics headed for the Crown Court but not before the Company came up with another wheeze of offering to fit smoke vents and removing all firefighting equipment!

Smoke ventilation versus sprinklers argument

This strategy of smoke ventilation and no firefighting equipment was quite novel. It came about because fire engineering consultants suggested that sufficient time for workers to escape could be secured by



fitting vents into the roof and thus allowing for any smoke and hot gases to be released at high level before conditions became unsurvivable for any occupants. Interestingly, their calculations showed that there was ‘just sufficient time’ to allow for persons working in the warehouse to reach the exit before a ‘flash over’ occurred (calculated at possible within 5 and 7.5 minutes).

They conceded however that there existed little margin for error. Hence all fire extinguishers were to be removed to the outside perimeter wall and staff to be instructed never to use them. The thinking was that the normal presence of extinguishers would encourage firefighting and this would be dangerous. In short, as soon as any smoke was detected they had to run for it!

This was all argued over a three day hearing in May 2000.

Crown Court

In his judgement in the Northampton Crown Court Judge Hall said: *“Is there any obligation to provide within the premises any means for fighting fire itself? Are those in the building entitled to say: If we have a fire we have taken the decision not to fight it ourselves, we will not make any provision within the building actually for fighting the fire. We will tell the fire brigade and they will come. That is the decision which this company has made”*.

The Judge went on to say: *“The Appellant found it impossible to establish a protocol which would define the type of fire which it was worth fighting and would not put its employees more at risk than they were from the fire”*.

He continued: *“I find it hard within the context of the Fire Precautions Act to criticise them for it”*.

Judgement therefore went against the fire authority and for City Logistics. Something even non partisan observers saw as astonishing.

No means for fighting fire

This judgement effectively allowed no firefighting equipment to be necessary in any industrial and commercial buildings.

So to the High Court we all went in November 2000 (pre-trial review) with a further three day hearing early the following year as Northamptonshire appealed the Crown Court judgement.

Time and space prevents me from covering much detail from what took place in the Divisional Court but Mr Justice Turner, in allowing Northamptonshire’s appeal, found that it was not reasonable to simply allow buildings to burn down.

Importantly, following the Bradford City Football Club fire legislation² had been changed and Fire & Rescue Authorities did indeed possess the legal power to require automatic (as opposed to manual) means for fighting fire. This is an important point that



was never in dispute and accepted by all parties.

He also believed it was not in the public interest to allow buildings to simply burn without trying to extinguish a fire because of the safety of persons in and around the building, the safety of fire-fighters and the dangers posed to the environment. In effect, Judge Hall’s rulings were all overturned.

Surely, at long last, a sensible judgement that established extremely valuable case law.

Further Appeal & intervention

I would have hoped the story ended there; however, there was to be another twist in the tale of events as City Logistics appealed to the Court of Appeal. They did so principally on the basis that the Judge in the Divisional Court was wrong to conclude that the law applied to property. Something I concede was a good point. But of course, the fire & rescue service’s case was that means must be provided in buildings to fight fires – thus protecting some property – so that consequently lives generally are not put at risk.

It is this issue of property protection that causes such a problem – especially with HM Government.

A few days before the case was heard in the Court of Appeal there was an ‘untimely intervention’ of the then Secretary of State for the Department of Transport Local Government and the Regions (DTLR). Indeed, this intervention came as something of a shock because to all intents and purposes government officials had previously always offered their support in the actions taken by Northamptonshire.

The Court of Appeal (Lord Justice Kennedy) ultimately decided that the legislation² regarding ‘means for fighting fire’ was only

relevant to escape of persons in the building at the time fire occurred. It did not relate or protect persons outside the building on fire, fire-fighters or the environment. Northamptonshire was effectively instructed to go back to the beginning and start again.

Aftermath

The Court of Appeal’s ruling placed Northamptonshire Fire Authority in a difficult position. The City Logistics’ warehouse, without the argued for smoke vents, was still considered unsafe by all parties. Added to which, ironically, Northamptonshire Council tax payers were also saddled with a hefty bill for the opposing parties’ legal costs!

However, before a new notice could be prepared, the City Logistics Company conveniently folded - thus sparing the difficult decision as to what should be done to make the building safe in both the short and long term. A new occupier then significantly reduced the fire risk to an acceptable level - albeit still without installing sprinklers.

Finally, the most positive outcome was that the case generated significant debate as to the maximum compartment size of modern storage buildings unless fitted with sprinklers. Indeed, I doubt if the introduction of the 20,000m² rule in the Approved Document B for England & Wales in 2006 would have happened without such debate and publicity.

Looking forward

I still keep a paper diary. I shall therefore be happy to conduct a similar exercise twenty years hence. However, looking back at 2020 I fear the article might be rather short.

1 Fire Surveyor, volume 19, no: 1, Feb 1990
2 Fire Precautions Act 1971
3 Factories Act 1961



The Golden Thread of Information



IN RECENT MONTHS RITCHIE O'CONNELL, BAFSA'S REPRESENTATIVE IN WALES, REPORTS THAT HE HAS RECEIVED A LARGE NUMBER OF QUERIES FROM CLIENTS, AND PROSPECTIVE CLIENTS REGARDING THE 'NEW' REGULATION 38 - DESCRIBED IN DAME JUDITH HACKITT'S REVIEW AS FUNDAMENTAL TO PROVIDING THE "GOLDEN THREAD OF INFORMATION".

THERE APPEARS TO be a widespread lack of knowledge regarding this Regulation... Many of these queries emanated from clients who are architects, principal contractors, or quantity surveyors. Its suddenly greater visibility probably stems from its moving from an appendix piece to a new "Fire Safety Information" section in the 2019 version of Approved Document B. Whether or not this is the reason for its higher profile (despite the plaintive cries for help from some quarters), it can only be a good thing that it is now receiving wider attention.

So, what is this 'new' Regulation? Well for starters it's not new, there is a definite clue in its full title "Regulation 38 of the Building Regulations 2010". It has been around in its present form for 10 years, we are just hearing more about it now as a result

of the Hackitt review and the changes to ADB discussed above.

To paraphrase the Building Regulations, Reg 38 applies whenever building work, is carried out on a building to which the Regulatory Reform (Fire Safety) Order 2005 (RRFSO) applies or will apply on completion. This includes, but is not limited to, the erection or extension of such a building.

On or before completion of the building work, but no later than the occupation of that building (builder's handover), the person responsible for doing the work must provide to the person responsible for fire safety in the building, enough information relating to the fire safety design of the building and its services, fittings and equipment to enable that person to understand and implement the fire safety

strategy of the building, and provide them with enough detail to inform a fire risk assessment and maintain the fire safety systems provided in the building.

Regulation 38 is fundamental to providing the "Golden Thread of Information" described in Dame Judith Hackitt's review of Building regulations following the Grenfell fire.

For many years building designers, and principal contractors, did not pass on sufficient information to the building users on how the building was designed to perform in fire.

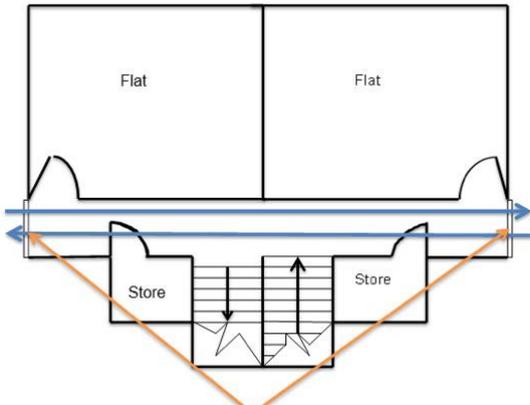
Without this information, incremental changes were made to buildings which whilst they did not initially appear to be fire related affected the way in which those buildings subsequently performed in Fire.

A few years ago, I attended a fire in a four storey block of flats which illustrates some of the problems which can occur as an unintended consequence of minor alterations, and their impact in relation to fire.

This 1960s general needs block of flats, owned by a housing association, had originally been constructed to British standard CP3, and a typical floor layout is illustrated opposite.

There were two flats per floor accessed via an open walkway. Each flat had a small store opposite it. A number of seemingly inconsequential changes were made to the building over the years, none of these changes when they were made seemed to be related to fire.

- The original design involved un-glazed window openings at either end of the corridor at each upper floor level, no other ventilation was considered necessary in the corridor or staircase; however, these openings were later fitted with double glazed windows which were not openable.
- All front doors had been replaced with standard UPVC doors.
- A 3rd floor flat had been fitted by the occupier with a steel security shutter causing significant damage to the UPVC door. (There was no requirement in the original design for the flat doors to be fire doors.)
- Many of residents had satellite dishes or standard television aerials fitted.
- Alongside the front door of each flat was a kitchen window, in one flat a hole was cut in this window by the occupier to create a vent for a tumble dryer,
- The evacuation strategy for this building was 'stay put', although not all of the tenants were aware of this, initially residents were informed but this seemed to have been forgotten.



The windows at either end of the corridor which had originally been left open to provide through ventilation were later enclosed with un-openable double glazing units

A fire risk assessment had been carried out but did not identify any of the issues discussed here.

In the early hours of the morning the store cupboard opposite a second floor flat was discovered to be on fire. This relatively small fire should not have created any serious problems, and all residents should have been able to remain safely in their homes.

Due to the small incremental changes the building did not perform as it was designed, in the original design the evacuation strategy was stay put, each flat forming its own fire compartment.

The smoke should have ventilated through the unenclosed walkway which was designed to have cross ventilation, this did not happen because the openings were enclosed with double glazed window units, the smoke, instead of dispersing, filled first the corridor and then the stairwell, compromising the escape routes.

Smoke entered the flat where the window had been compromised via the window vent, when the occupier subsequently tried to evacuate, they found the escape routes impassable, and had to be rescued via ladder.

The fire door which was damaged by the steel shutter allowed the smoke to enter the flat, the shutter became hot to the touch so the occupant could not escape the flat and this occupant was also rescued by ladder.

Smoke was found to have entered 3 other flats which had to be evacuated also by ladder, no obvious route for smoke entering the other flats could be found at the time of the incident on further inspection there were a number of small service penetrations (cables) through compartment walls and floors which had allowed smoke percolation.

The minor alterations carried out by the building owners and by the tenants had a significant effect on the suitability of the building for a stay put policy, the flats were subsequently designated unsuitable for stay put until such time as refurbishment works were carried out and the integrity of the compartmentation could be assured, to facilitate the new simultaneous evacuation strategy a new fire alarm system was installed to. The glazed units have been replaced with openable windows, the front doors have been replaced with fire doors. The window vent and the security shutter have been removed.

Whilst no one was harmed, apart from some minor smoke inhalation, this could have been far more serious, we have seen the tragic effects of similar issues at Lakanal House and Grenfell Tower. Regulation 38 is the first step in providing the golden thread of information which it is hoped will stop such tragic events happening again.

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When is a standard not a standard?



The motivation, explains Stewart Kidd, BAFSA Special Projects Adviser, for this piece of work arose from an observation overheard in a meeting when a representative of a housing provider questioned the need for BS 9251 to be specified for a sprinkler installation in a block of flats. His argument was that since BS 9251 had the subtitle ‘Code of Practice’ it did not need to be complied with as it was not a standard!

OF COURSE, THIS neatly begs the question as to the extent which any standard has to be complied with. Standards such as BS 9251 and BS EN 12845 are intended to be an aid to the specifier/end user and the contractor undertaking work. They allow a shorthand approach to specification and by their nature remove detailed technical issues from pre-contract discussions.

Recent civil litigation resulting from the destruction of a very large warehouse in an arson fire has provided observers with a slightly different view on how the provision of sprinklers is viewed by the law. In the absence

of any specific, mandatory requirement for this protection, most previous litigation has resulted in judgements which have said that while sprinklers are a good idea and useful, their provision is optional.

IGNORING STANDARDS - THE CONSEQUENCES

This most interesting recent judgement involves not only compliance with British Standards in respect of the physical security of premises but also goes further than before in distinguishing the difference between the ‘advice’ offered in Approved Document B from requirements for ‘mandatory protection’ against fire.

In **2Entertain Video Limited and others v Sony DADC Europe Limited ([2020] EWHC 972 (TCC))**, Mrs Justice O’Farrell DBE ruled that the claimants were reasonably entitled to assume their property, stored in premises operated by Sony DADC Europe Limited was safe and secure. In her judgement in respect of the security issues, the Judge ruled that Sony should and could have complied with the

recommendations contained in the relevant British Standard BS 8220 Part 3. Sony’s defence revolved around an assertion that this was not a well-known document. In her Judgement, Mrs Justice O’Farrell said:

It is no defence for Sony to suggest that it was unaware of BS 8220. That British Standard represented the acceptable standards and practice for the security of storage, industrial and distribution premises. It was incumbent on Sony, as the provider of logistics services and operator of a distribution facility, to ensure that it was cognisant of the appropriate guidelines.

In the matter of whether the warehouse was provided with adequate fire protection, the defendants claimed that as the building complied with the Regulatory Reform (Fire Safety) Order 2005 it did not need to be fitted with sprinklers and had received Building Regulations approval. Sony had relied on advice from an Approved Inspector (AI) who had said that sprinklers were not legally required and that based on the size and height of the warehouse, the AI did not believe that these would be effective.

The situation was further complicated by the fact that the original building, which had a floor area of 15,853m² was subsequently fitted with a mezzanine and ‘galleries’ which took the total floor area to 24,011m² or 23,974m². In a joint statement, the two architectural experts agreed that a ‘gallery’ became a ‘storey’ when this was extended to over half the area of the space into which they projected.

So, the Judge accepted arguments by the two fire consultants that it would not have been feasible to comply with the requirement in AD-B to provide compartmentation as a means of reducing compartment size. She ruled that, at the time of the fire:

“The Building Regulations and ADB in force at the time of the 2009 internal changes to the warehouse indicated that compartmentation and/or sprinklers were required to inhibit the spread of any internal fire. No compartmentation or sprinkler system was installed and there was no fire engineering assessment to justify the omission.”

She also accepted the arguments that a sprinkler system would have been effective:

it is likely that the installation of a sprinkler system in the warehouse, including sprinklers within the racks, would have suppressed the fire at an early stage and significantly limited the damage. The likelihood is that most of the claimants’ goods and the warehouse would not have been destroyed.

Rejecting an argument by the defendant that the arson attack was unforeseeable and amounted to force majeure, the Judge concluded that:

For the reasons set out above, adequate security measures that could have been taken by Sony probably would have deterred or delayed the attack on the warehouse and prevented the youths from gaining entry. Reasonable fire precautions, namely, the installation of sprinklers, probably would have suppressed the fire and significantly reduced any damage to the warehouse and its stock. Therefore, the fire and resulting loss did not amount to circumstances beyond the reasonable control of Sony and it is not open to Sony to rely on clause 14.1 as a defence.

This case is a powerful argument that ignoring or failing to comply with consensus standards is a dangerous way to run a business!

RELEVANT CASELAW

It is clear that in cases decided before the Sony DADC trial, judges were unwilling to impose duties on property owners to fit sprinklers where these were not required by law.

In **J Sainsbury PLC v Broadway Malyan** [1999] PNLR.286, HHJ Humphrey Lloyd QC ruled that Sainsbury had not been contributorily negligent in failing to put in sprinklers. He said:

“Sainsbury was in my judgment free to decide whether it was in its own commercial interest to install sprinklers. Others might have done so, but I do not consider Sainsbury was at fault in not doing so. BM knew that there would be no sprinklers, as did EGP. They must be taken to have accepted the risk that any damage caused by negligence might therefore be greater than it would have been. I see no ground for holding that there was contributory negligence in not having sprinklers.”

As to the absence of fire barriers in the ceiling void, the judge reached the same conclusion, pointing out that no one from the relevant professionals had suggested that there was anything wrong in omitting cavity barriers. However, the judge did go on to make a finding of contributory negligence on the part of Sainsbury in relation to one of the fire walls which had been built to a defective design which the Sainsbury representative had failed to pick up.

In **Fosse Motor Engineers Limited v Conde Nast and National Magazine Distributors Limited** [2008] EWHC 2037 (TCC) Akenhead J dismissed the claim against the defendants for reasons concerned with causation. His findings in relation to contributory negligence were therefore obiter. However, on the topics of compartmentation and sprinklers, he said:

“(a) It was asserted that much of the fire damage was attributable to the absence both of a suitable system of sprinklers and of compartmentation at the warehouse.

(b) There was no statutory requirement (such as Building Regulations) for a building of this size built in 1976 to have sprinklers or compartmentation.

(c) None of the literature at the time of the fire makes it clear that for an existing building of this age these are required.

(d) There are numerous warehouses which do not have such systems in. Put another way, there seems to be a respectable body of opinion among warehouse owners that they are not necessary.

(e) Fosse was not required by the Fire Brigade who checked the building over some time before the fire or their insurers to install sprinklers or compartmentation. Fosse had taken some steps to provide an expensive new fire alarm system and other safety measures.

(f) The evidence on compartmentation was not satisfactory. There was no attempt to explain what compartmentation was needed as a reasonable minimum or the extent to which it would have limited fire damage. If it was extensively compartmentalised the damage would have been much less; if it was limited to means of escape for people little of the building would have been saved.”

“There are standards, then there are standards, the latter need not be complied with”

In **Trebor Bassett Holdings Ltd & Anor v ADT Fire & Security Plc** [2011] EWHC 1936 (TCC) Coulson J said:

“During the course of the evidence, I pointed out that I have never tried a fire case in which it was not suggested by the defendant that the claimants should, long before the fire, have put in sprinklers. Nor have I ever tried a fire case in which the claimant’s claim for the cost of rebuilding did not include the cost of a full sprinkler system. Both of those elements feature in this case. But what is unique, in my experience, is that here the claimants’ management at Monkhill were advised, not once, but twice (and by their own Group Risk Department, on whom they said they always relied) to put in a full sprinkler system and, on both occasions, they failed to follow those recommendations.

“That is the most significant reason to distinguish this case from *Sainsbury v Broadway Malyan* and *Fosse Motors*. Unlike there, these claimants were positively advised that sprinklers should be put in; that sprinklers were the only certain way of eliminating the risk of fire. It is therefore necessary to look at the reasons why they were not installed, to see whether or not the conduct of the claimants can properly be criticised in refusing to follow the recommendations and, if so, what the casual significance of this default might be”.

Commenting on the failure of the claimant to follow the advice of their Group Risk Department, the Judge also said:

“The extent and scope of the claimants’ failure to take on board the recommendations of the Group Risk Department were exacerbated by the events in the summer of 2004 when, for the second time in a year, there was a clear recommendation to Monkhill to put in sprinklers. This time, the report even spelt out the financial advantages of sprinklers; for a spend of £500,000, a projected loss of just under £30 million would be reduced to just under £1 million (see paragraph 357 above). The advantages are not therefore only apparent in hindsight; they were, or should have been, clear at the time”.

1 BS 8220-3:2004 Guide for security of buildings against crime. Storage, industrial and distribution premises

British Automatic Fire Sprinkler Association

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Changes are on the horizon.. Again



IN THESE TROUBLING TIMES BUILDING DEVELOPMENT HAS BEEN STOP START IN MANY AREAS, WITH BUILDING CONSTRUCTION HAVING BEEN STOPPED FOR A CONSIDERABLE TIME IN SCOTLAND. HOWEVER THINGS HAVE BEEN HAPPENING BEHIND THE SCENES WRITES DANNY DOHERTY, BAFSA REPRESENTATIVE IN SCOTLAND.

FURTHER TO THE announcement in June 2018, the Scottish Government has now brought forward the legislation that requires sprinklers in a range of new build properties. This comes into force on 1st March 2021 and will require the need for automatic suppression in all new premises where the building contains a flat or maisonette, is a social housing dwelling, or is a shared multi-occupancy residential building. This is the result of both a wide reaching consultation process in the wake of Grenfell and the concerted efforts of David Stewart MSP within the Scottish Parliament which gained cross party support.

Scotland may not be as proactive in fire safety as some would like but it certainly cannot be accused of being unreactive. Dwellings aside, our existing suppression requirements at present are far higher than the rest of the United Kingdom. A testimony to the ability of the Scottish Parliament to legislate in light of tragedies that occur such as Grenfell and Rosepark. So although 2018/19 saw a change to the norm and dwelling fires fall 3.5% (SFRS statistics) in the year, the government still believes it is the right thing to amend the Building Regulations to include automatic suppression even though it has not been met with a warm embrace from certain areas.

Scotland believes that the sustainability of communities is vitally important and dwellings like schools, form part of that economic network which serve as social assets. As many of us know only too well the far-reaching implications of a significant dwelling fire go far beyond just the room of origin. Although we have not quite reached the achievements in Wales, we are not far behind and catching up fast.

Whilst our colleagues in the rest of the UK battle with the changes to BB100 there is on average 152 fires in Scottish schools each year, far less than the rest of the country which in 2019 had 26,866 (FS matter.com/Zurich-study-shows-need-for-school-sprinklers) but unlike the UK government we have acknowledged the significant costs in terms of the damage and disruption they cause so 'a school building (in Scotland) other than a building forming part of an existing school or an extension to a school building where it is not reasonably practicable to install an automatic fire suppression system in that building or extension' must have automatic suppression installed. It is beyond belief at times the unwillingness to acknowledge the implications and misery a school fire has on the community.

Similarly, since 2005 all new residential care properties have required the installation of automatic suppression in light of the tragedy at Rosepark in 2004. This tragedy could have happened anywhere in the UK and history has very nearly repeated itself throughout the UK on several occasions.

We are fortunate that BAFSA has forged a trustworthy relationship with our partners in both Scottish Government and the local authorities. It cannot be underestimated the value that we, as an organisation, provide in Scotland. We help and assist regularly and are now part of the team looking to present on a number of roadshows to the Scottish Community alongside Scottish Building Standards on the changes to forthcoming building standards. We are also working with other organisations to assist in supporting certification and gearing up for increase in projected workload.

We are far from the finish line in terms of where we would like to get, but we have taken another significant step forward. I will keep you updated.

The challenges of developing & delivering online learning



RUTH OLIVER, BAFSA SKILLS & QUALIFICATIONS ADVISER

The world of education has been evolving since time immemorial and COVID 19 has given many of us an opportunity to explore online learning reflects Ruth Oliver, BAFSA's Skills and Qualifications Adviser.

DEBATE HAS BEEN raging for some time now about the efficacy of online teaching over classroom teaching. With lockdown and COVID 19, sprinkler installers have a unique opportunity to experience online learning with the development and delivery of the SFJ IQ L2 Certificate in Fire Sprinkler Installation Online Programme.

However, development of online learning is not a quick and simple task. Using technology in the day-to-day business of keeping in touch with learners, monitoring learner progress, module and video setting assignments and assessments, and tests have had to be rethought for online learning programmes. It could be said there was an expectation from industry that colleges and their tutors were supposed to move their classes online right away without having additional training and an extra budget. The same can be said for BAFSA, perhaps being expected to develop a wide range of training opportunities within a short time and limited budget.

Comprehensive learning management systems have high costs, and any online learning provider must use numerous digital tools. Equally they must be able to handle large amounts of information whilst deciding on their teaching and assessment strategy.

When we say 'learning' what we mean is 'remote interactive learning' There must be full live interaction for the duration of the course which is something different from sitting in front of a computer screen. We therefore needed to use a platform which allows remote interactive learning so the tutor must be able to see candidates live and be able to communicate with them live, and two-way, ie candidates must also be able to speak.



(Skype/Zoom are platforms which easily allow this kind of interaction).

The learning programme would also be required to be accessed and used via computer, laptop and ipad and mobile phone technology.

Working with West College Scotland over the last months to develop the online programme quickly established the main challenge was the modules content and what interactive educational aids should be used and how to incorporate them. It is difficult to choose the right thing, but it is even more challenging to mould them according to the needs of the learners too.

Keeping in mind the 'invisibility' and lack of visible body language to gauge the mood of the learners, tutors have to mainly rely on the learners written word. In classrooms, learners enjoy and remember the nuances of a teacher, the gestures, and the expressions all of which add to the experience of classroom teaching. The major challenge we faced would be to handle the lack of these things. It was clear, a set of instructions was essential and everything within the programme had to be clearly stated with no ambiguity.

We also recognised four common problems faced by learners undertaking e-learning and which needed to be addressed :

- technical issues - computer literacy
- time management - self-motivation - isolation.

BAFSA and West College Scotland recognised that education is not only about gaining knowledge but is also about the interaction between learners and tutors. Our responsibility is not only to provide online learning but to support the learners, stay connected, and keep the programme integrity.

We are pleased to have developed a programme which allows easy two way communication and has many ways to engage the learner during the online modules: PowerPoint presentations, short videos, quizzes, on-the-go recordings, bite-size learning, video evidence and assessment... Ensuring constant contact: tracking the progress and giving feedback is another step to helping us keep each learner engaged. Strict criteria and guidance applies to ensure the integrity of evidence supplied by learners.

With no requirement to attend college, this is a programme which allows a learner to work at their own speed and time, a self-paced system, and a new opportunity for the sector, one which requires a different mind set in how learning is undertaken. Programme modules can be accessed at any time, and for however long a learner wishes, an advantage that a traditional education system cannot beat.

An average learner could expect to complete the 40 hour programme within 8 weeks and enrolments are on an ongoing basis. No term times!

NO SOONER SAID THAN DONE

COVID 19 RESTRICTIONS resulted in college activities ceasing in mid March with all face to face teaching postponed. Educationalists across the UK made it a priority to see the tens of thousands of learners who education was interrupted return to learning, complete their programme and gain their certification.

BAFSA picked up the challenge, and working with West College Scotland, developed an innovative, remote interactive learning programme for those installers with 3 years or more years installation experience to achieve the L2 qualification. What is not permitted by the Qualification Regulator is simply providing learners with a set of slides, notes, workbook, etc, and them working through it on their own. There must be full live interaction for the duration of the course.

Our chosen platform allows this remote interactive learning – so the tutor is able to see all candidates live and be able to communicate with them live and two-way.

We reviewed candidate eligibility criteria, reducing the requirement that installers have four years' experience down to three years. Learning outcomes remained unchanged and with the qualification encompassing both residential and commercial fire sprinkler installations colleges expect the candidate to have experience in both types of systems, demonstrated within the newly developed BAFSA Evidence of Prior Learning Record Book.

As part of the qualification evidence requirements candidates are required to complete this Evidence of Prior Learning portfolio for submission to the college. A downloadable template document is available free of charge from the BAFSA website.

Candidate Enrolment takes place on line with a robust candidate ID checking process being undertaken so we can be assured that the learner is the person undertaking the modules and assessment. Photograph ID is requested at enrolment individual log in details provided so they may access the learning programme.

An audio visual presentation introduces the course to the learner. There are online audio visual presentations, quizzes, self assessments, assignments and video assessments with remote face to face opportunities, and discussion forums for

each subject. Assessments dates and time limits will be set for learners to submit video evidence of practical competency all under strict criteria as set down by OFQUAL and SFJ IQ.

In summary, the interactive learning course consists of teaching and seven assessments, two competence based, and five knowledge based using a variety of media. All requirements of the L2 qualification are covered through the modules, each designed to allow learning and assessment:

BAFSA and West College Scotland recognise that education is not only about gaining knowledge but is also about the interaction between learners and tutors thus our responsibility is not only to provide online learning but to support the learners, stay connected, and keep the programme integrity.

The programme encourages easy two way communication with many ways to engage the learner during the online modules. Ensuring constant contact: tracking the progress and giving feedback is another step to helping us keep each learner engaged. Strict criteria and

guidance applies to ensure the integrity of evidence supplied by learners.

With no requirement to attend college, this is a programme which allows a learner to work at their own speed and time, a self-paced system, and a new opportunity for the sector, one which requires a different mind set in how learning is undertaken. Programme modules can be accessed at any time, and for however long a learner wishes, an advantage that a traditional education system cannot beat.

Given the lower cost of an online programme compared to a traditional day or block release course in a College and the forward thinking of the fire sprinkler industry employers and employees this new opportunity is one BAFSA is sure will be welcomed.

For further information and/or to book your programme place please visit the link below:

<https://www.bafsa.org.uk/sfj-iq-l2-certificate-in-fire-sprinkler-installation-experienced-worker-route-on-line-learning/>





Design is vital to success

THE DESIGN OF A SPRINKLER SYSTEM IS PARAMOUNT TO A SUCCESSFUL INSTALLATION REPORTS ALAN CRICHTON, BAFSA TRAINING FACILITATOR

CHANGE IS COMING in the form of new building standards. On November the 26th 2020 there will be a requirement to install sprinkler into all new built flats over 4 storeys high or 11 metres in England and from March 2021 all flats and social housing must have sprinkler installed to meet the new Scottish building regulations.

These changes to the building standards will put increase pressure on an already overloaded industry. To cope with the tsunami of work that is on the horizon new blood will need to be introduced into the industry with the result that training budgets will be stretched.

The introduction of trainees into the workforce will undoubtedly increase pressure on the senior designers who will have their own workload to cope with. External training will become essential to the industry to cope with the increased opportunities in this growing market.

There will be new players, some of which will be a welcome addition and some of which will be a risk to the industry. The challenge therefore is to control the quality of the installation thus avoiding a fatality in a sprinklered property. It is imperative that pressure be applied on government and that they require installing companies to be Third Party Accredited, demonstrating competence.

If a successful sprinkler installation is to be achieved, the design of that system is paramount but requires time for co-ordination of the process and to carry out the calculations correctly - even more so for supervised companies as training of staff is an essential part of proof of compliance.

Too often the fire sprinkler contracts are included within the Mechanical Package and put out to tender where the time from receiving the order to getting to site is insufficient to fulfil a complete design.

Sprinkler designs are central to the overall fire strategy of the building and should be created at an early stage.

To gain Third Party accreditation designers must be able to show competency through the existing schemes by successfully completing competence reviews. These reviews are not easily completed and only competent engineers will be able to pass them. In the UK there are a range of training course you can book through BAFSA for both the residential / domestic market and the commercial market.

The residential / domestic training courses that can be booked through BAFSA run for 4 days entirely online and cover the full design scope of a system from Classification through to Commissioning and Maintenance. This course is also approved to give 60 CPD hours.

To gain access into the FIRAS Third Party scheme for residential and domestic installations, this certificate is the minimum requirement to prove design competency and to get through the first hurdle of the certification process.

Commercial systems are more involved than the residential and domestic systems because the installations cover a vast range of premises from schools to retail to large sheds, covering roof and rack protection.

Also water supplies used in the commercial systems can be complicated using electric and diesel driven pumps that can generate 15,000 litres per minute or more in some instances.

Commercial systems are also covered in third party schemes however only the LPS1048 scheme requires engineers to sit and pass a competence review. If successful a certificate approved by the Institute of Fire Engineers (IFE) is raised and issued to the individual. A candidate can only sit this exam if they are in the LPS 1048 scheme. However it is generally recognised as the benchmark for commercial designers.

The commercial design reviews under the LPS1048 Scheme are: -

- **Basic Competence** - general knowledge of the rules and understanding of designing systems (mainly pre-calculated). These should be passed by designers, senior estimators, project managers and, potentially, senior maintenance engineers who carry out review of hazard reports.
- **Intermediate Competence** - mainly base build and high-rise office blocks contracts which includes multistage pumps. These should be passed by designers, senior estimators.
- **Full Hydraulic Competence (FHC)** - warehouse storage including rack design, fully hydraulically calculated system, sizing sprinkler tanks using pump and system curves. These should be passed by designers, senior estimators.

- **Commissioning and Inspection Competence** - inspection and commissioning of commercial fire sprinkler systems. These should be passed by project managers and potentially senior maintenance engineers who carry out commissioning of systems.

The LPS 1048 competence reviews are only for the designers within companies in the scheme and it does beg the question “do we need to get a nationally agreed accreditation for sprinkler design and make the third party scheme mandatory for installation companies in the same vein that GasSafe is for gas installers as these systems are designed to save lives and property from fire?”

BAFSA carries out a range of commercial design and inspection courses that are open to all, they are all both intense and comprehensive.

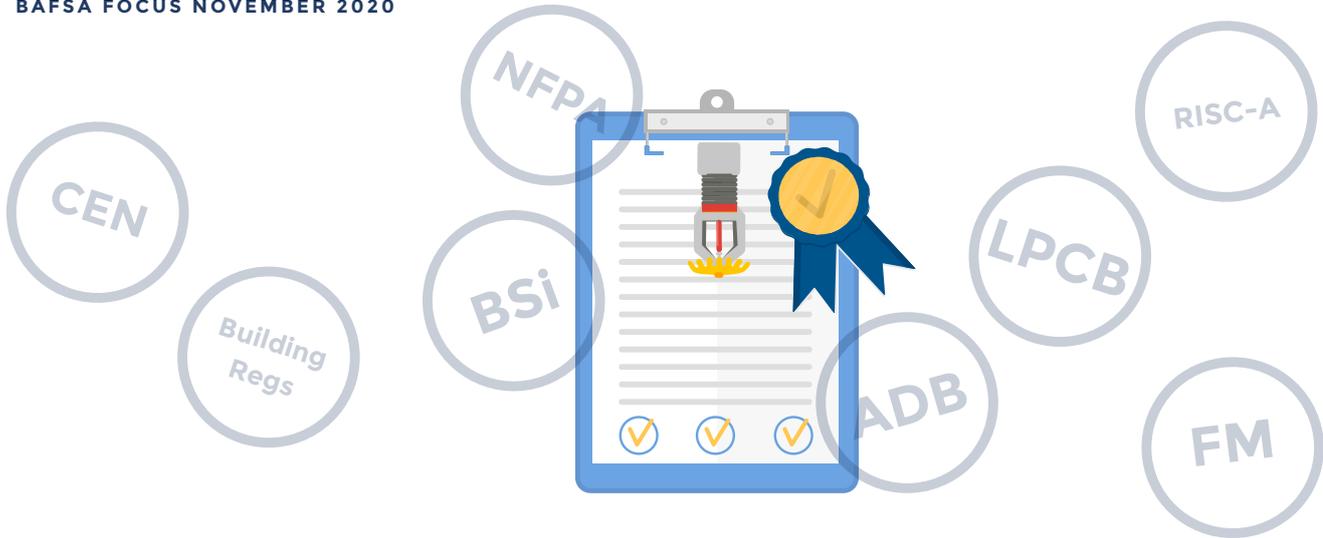
BAFSA’s four courses cover the following :

COURSE	DURATION	COVER
Basic	5 days	Classification of systems Storage types and Categories Water Supplies Spacing and Location of Sprinklers Spacing and location of Brackets Component selection Pre – Calc Pipework sizing Calculations System Types and Applications
Intermediate	2 days	Zoning of Systems Water Supplies (Multistage pumps) Alarms Hydraulic Calculation for High Rise Buildings
FHC	4 Days	Selecting Densities for warehouse roof protection Determining Densities for roof & Rack Systems Plotting heads in racks Hazen Williams Formula (Hand Calculations) Pressure & Flow Curves ESFR Protection Locating Remote & Favourable areas Hydraulic Calculations (with a calculation Package). Suction Pipe and NPSH Calculations
Commissioning & Inspection	2 Days	Water Supplies Installation Control Valves Spacing and Location of Sprinklers Spacing and Location of Brackets Selection of Sprinkler heads System Components

If starting from scratch, BAFSA recommends commencing with the Basic Design Course followed by the Inspection moving onto the Intermediate and finally the FHC Course.

Dates and costs for the individual courses can be found on the website.

Courses are generally followed up by the LPCB Competency exam.



Supporting Standards for Sprinklers

THE UK SPRINKLER industry can be very proud of its record, reflects Stewart Kidd as one of the pioneers of developing and supporting design, installation and maintenance standards for fire protection systems. The UK's first standard for the design of automatic sprinkler systems dates from 1885 and the first consensus standard (the FOC Rules) published by the Fire Offices' Committee date from 1892.

This had the effect of ensuring that virtually all sprinkler systems being installed in the UK had to follow this standard. The FOC Rules, in various incarnations reigned supreme until 1986 - even over-riding two attempts by the British Standards Institution to publish its own sprinkler standard in 1952 and 1979. The fact that a significant majority of sprinkler systems being installed in the UK up until 1986 (when the FOC was closed) was at the behest of the insurers meant that in effect, no one used the second BSi document, BS 5306 Part 2.

On the death of the FOC, the Loss Prevention Council took over responsibility for the FOC Rules and came to an understanding with the BSi over the production of a national sprinkler standard. However even this was insufficient to meet insurers needs so the revised BS 5306-2 was published with a set of additional requirements in a series of Technical Bulletins (TBs) - both documents in one binder under the LPC Rules title. For BSi to licence another party is an exceptional step and indicates the extent to which the FOC Rules had a hold on the sprinkler industry.

The revised BS 5306-2 and the TBs would appear to have satisfied the needs of the UK until a CEN group developed the first consensus European sprinkler standard published in 2004. This standard, with a new set of TBs remained in use (with a couple of interim amendments) until they were superseded in 2015. Within CEN, the responsible committee, TC191/WG5 appears

to have formed a view that the 2016 version was no longer fit for purpose. Comments such as '12845 is not being used for warehouse protection' and 'the lack of suitable guidance on emerging technology' such as ESFR (early suppression, fast response) sprinkler heads has led to attempts to force the standard into new directions. Described by one member of the WG as being 'revolutionary rather than evolutionary'. A radical change in the way hazard classifications are reached has also been criticised.

At the same time, according to some commentators, other standards are being widely used in Europe rather than EN 12845. Given that this standard is not harmonised under the Construction Product Regulations (that is, it is not listed as an EN) it is perfectly acceptable to use other codes and standards. It would appear that these include:

- NFPA 13
- FM Datasheets
- CEA 4001

The last may surprise some who are not aware of this European Insurers' document. However, it's a valid standard and is, for example, reportedly being called up in a major UK rail project.

Obviously, FM Global as an insurer promotes its own standards to its insured and given the expertise of FM-G's engineers this approach ensures a widespread degree of compliance and high level of system availability. The same is true of some other insurers who take exceptional steps to promote standards-compliance - including maintenance and annual hazard reviews. However, it is a reflection on the changing nature of the insurance market that much of the expertise which was once present in-house may be no longer available and underwriters are no longer able to rely on

regular hazard reviews and sprinkler system condition reports. In the same vein, some insurers through RISC-A and the FPA have expressed concerns that the maintenance and inspection requirements in EN 12845 and the LPC Rules are not being complied with. Despite showing some evidence of issues with suboptimal pump installation and maintenance and skimpy alarm valve servicing it would appear that these concerns are essentially minor and are not reflected in large scale system failures. Whether this is a factor of systems being over-engineered (and hence able to compensate for minor impairments) or good luck is not clear.

One result of the concerns expressed in some quarters has led to a toughening of the annual inspection clause in EN 12845. This now requires (Clause 27.1) periodic inspection annually by qualified personnel. The Clause recommends (but does not mandate) that:

...system inspections are undertaken by an independent body, e.g. not the system owner, building occupier, system installer (or competing installer) or service and maintenance provider (or competing service and maintenance provider)

This is a climb-down from the original wording which made the 'independent body' inspection mandatory and actually excluded the insurer from doing this work! As far as can be determined, no independent data has been adduced to prove that inspections undertaken by installers or maintenance companies are in any way inferior to others doing this work. A cynical observer might reflect on the fact that in some countries there are technical bureaux associated with standards bodies and national fire safety organisations which undertake such work. A UK observer could be forgiven for asking who will do this in the UK?

Experience in one country supports campaigns in others



THANKS TO OUR local people in different countries advises Alan Brinson, Chief Executive of the European Fire Sprinkler Network (EFSN), the Network has been able to continue its sprinkler campaigns.

In Belgium the Flemish government is co-funding more research on care homes, including a series of fire tests. The aim is to learn what can be achieved with smoke control, fire doors and sprinklers, individually and in combination. The goal is a solution providing low temperatures, good visibility and low concentrations of toxic gases conditions in a common living room even when the fire starts there. It is difficult to see how this could be achieved without sprinklers.

In France there is agreement that wooden residential construction should be permitted and that sprinklers should be fitted as a compensatory measure above a certain height. The wood industry has agreed to 28m, the French definition of a high-rise building, while fire brigades and insurers are insisting on 8m. Meanwhile developers will fit sprinklers in a number of wooden residential projects to avoid delay in approval. Another French initiative that could encourage the use of sprinklers is the Notre Dame project to develop fire safety guidance for French cultural heritage buildings, which will fund fire tests on sprinklers and water mist next year.

From November, Dutch fire safety regulations will require sprinklers in car parks below buildings where people sleep, including flats, hotels, care homes and hospitals. This will be the first sprinkler requirement in the Dutch regulations. The Netherlands has many underground car parks so this could lead to a significant new market. Further progress is possible, with the fire brigades calling for sprinklers in all enclosed car parks containing electric vehicles.

We apply experience in one country to support campaigns in others. In October there was a major fire in a car park below a residential building in Warsaw. 47 cars were destroyed and the structure was weakened, so that 150 people lost their homes. We have seen several large car park fires in other countries and this is helping us to argue that sprinklers should also be fitted in Polish car parks.

Spain only requires sprinklers in high-rise buildings if they are higher than 80 m, with the exception of hotels where the threshold is 28 m. We are campaigning for 28 m to be the threshold for all buildings. Our case was strengthened in August when a fire spread through the façade of a high-rise residential building in Madrid to destroy several floors. Fortunately, it started near the top of the building so unlike in Grenfell Tower, residents were not trapped above the fire.

To support our campaigns we need up-to-date standards for sprinkler systems and components to which regulators can refer. We have now addressed almost all the outstanding points for the draft review of EN 12845 and expect it to be circulated for comment in the spring. It will be complemented by a separate standard for ESFR and CMSA sprinkler designs. Although EN 12259-14, the residential sprinkler component standard, was recently published we will revise its scope to exclude o-ring sprinklers. No manufacturer uses o-rings and this will keep it that way. Parts of Europe suffer from



Fire Sprinkler International will now be held on 28-29 April 2021, in the Beurs van Berlage, a former corn exchange in the heart of Amsterdam. For more details and to register, see firesprinklerinternational.com

seismic activity and for them TS 17551, a technical specification for earthquake bracing, is about to be published. Led by British delegates, CEN has made progress with pumps. EN 12259-12, the pump standard, is almost ready for the CEN enquiry (comment) while almost all the comments on EN 17451, for pump sets, have been addressed.

Water mist standards are also making progress with EN 14972-1, the design and installation standard, about to be published. It will be supported by an increasing number of fire test protocols. EN 14972-8 & 9 for machinery spaces have been published; EN 14972-3 for offices, school classrooms and hotels is out for formal vote and EN 14972-14 & 15 for combustion turbines have passed the CEN enquiry. We also need key component standards. The first, EN 17450-1 for filters and strainers, will soon be published.

Once the Brexit transition period is over the CE-mark will be replaced by the UKCA (conformity assessed) mark. Fire protection products will have until January 2022 to apply this mark, using the same criteria as for the CE-mark. The EFSN is helping to clarify details and to inform its members of the new requirements.

Challenges and progress – we are not settling in... Nor should you.

A YEAR AGO the Chairman of the Business Sprinkler Alliance wrote about the need to keep going and not settling in the promotion of the use of automatic sprinklers in regulatory guidance. Now Tom Roche considers what a 12 months it has been.

We have witnessed the tremendous shock of COVID-19, the change it has brought to all our lives and efforts to continue to maintain businesses. The fight is not over with COVID. However, we must also recognise that, in the cause of making automatic sprinklers more of the norm, the last 12 months have been pivotal.

Ahead of the first lockdown we saw the English government commit to sprinklers

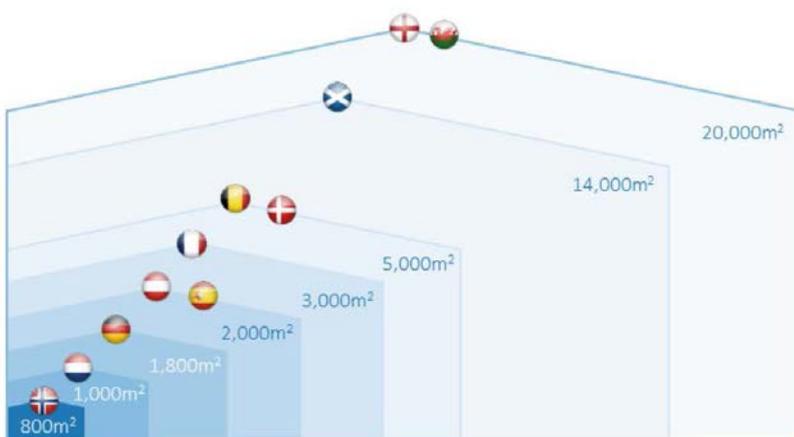
in residential buildings with a storey above 11m that comes into force this November 2020. Over the summer we saw the Scottish government finalise their legislation for sprinklers in residential properties which comes into force in March 2021. This sees the UK move to a position where sprinklers will be much more of the norm in the future for many buildings. A move ahead of our European neighbours. This position is incongruous given the position on schools, care homes and industrial buildings. We expect a lot more to come with other buildings in particular industrial buildings.

Despite the challenges of COVID the UK governments are continuing with their efforts

to reform Fire Safety. This saw the launch of several consultations this year: Scotland on External Wall guidance, Wales on their Fire Safety approach, a Fire Safety Consultation in England and the Building Safety Bill¹ being perhaps the largest proposed legislative change for a decade. The BSA has been working to promote the position on property protection within each of these government territories. We have responded to the Building Safety Bill to call for the scope to change. We know that if the scope of legislation is not changed then the current trajectory of regulation will continue to deliver the outcome of buildings that are disposable to fire which we believe is wrong headed.

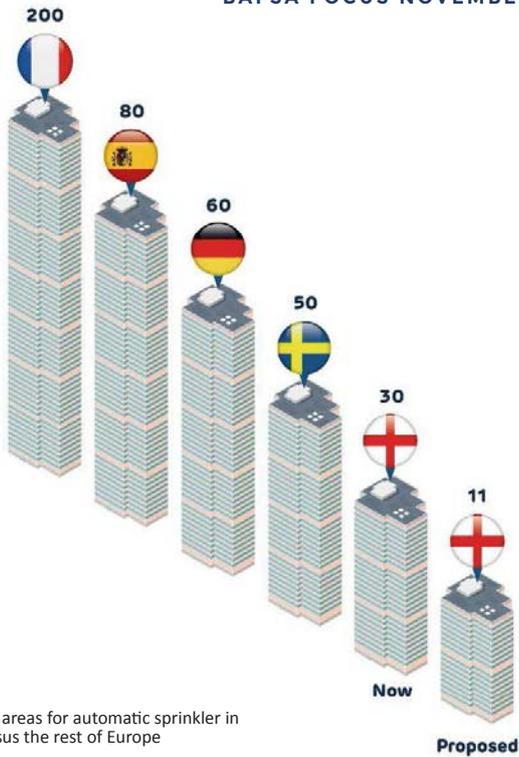
The technical phases of the review of regulatory guidance in England is now underway. We know it is not making the headlines, but it is happening, and government have instructed research across several areas. Therefore, it is imperative that we continue to use our collective voice and join in. Others will not directly champion our cause without effort. To this end the BSA has continued to submit responses to these consultations and provide input on technical issues. At the same time, we have worked with our members such as BAFSA, NFSN, the NFCC and through our membership of the Fire Sector Federation to share our thoughts so that where we have common views we can express them. Ensuring the government sees the widest possible agreement on issues around property protection and automatic sprinklers.

As we have not been able to conduct “in person” events the BSA has continued



Trigger heights for automatic sprinklers in England versus the rest of Europe





Trigger areas for automatic sprinkler in UK versus the rest of Europe

the efforts to conduct podcasts and online panels to influence the differing parts of the built environment. In the past months we have focused on architects due to their role in discussing building outcomes. To this end we have worked with Architecture Today on panel, roundtable, and webinar events. The latest of these focused on Designing for Fire².

We spoke last year of our online offering “Property protection and business resilience: automatic sprinklers – background and benefits³”. We are pleased to note that this won a 2019 Construction Marketing Award for the best digital marketing campaign. Given the ongoing challenges of COVID this use of online materials has gained pace. We have continued to execute more materials online through LinkedIn and Twitter to ensure the sprinkler message is gaining a broad view.

To this end it will not have escaped many people’s notice that we have been using video discussions on the myths around sprinklers⁴. At the same time, we have noted the rise of drone footage of significant fires. Our connections have secured them to develop compelling messages around the devastating impact of fire such as that at Langar Airfield Industrial Estate earlier this year⁵.

As we opened this piece, we noted that the past 12 months have been pivotal in changes on automatic sprinklers. We continue to apply pressure and network to ensure our messages are heard and that benefits of automatic sprinklers are understood by those deciding on legislative change.

The challenges may remain the same, but we should recognise that we are now more skilled with them. We need to ensure that the myths are viewed for what they are - myths, the benefits are clearly articulated and that we use effective technical arguments that focus on the evidence. The message therefore remains the same, this is not a time to settle but to work hard and continue to promote the benefits of automatic sprinklers. The BSA is committed to this and ensuring that we broaden the use of sprinklers into more industrial and commercial buildings.

1 BSA Submission to HCLG Select Committee - <https://committees.parliament.uk/work/361/prelegislative-scrutiny-of-the-building-safety-bill/publications/written-evidence/?page=1>
 2 Fire Design: Getting it Right – Architecture Today
 3 Business Sprinkler Alliance - Property protection and business resilience: automatic sprinklers – background and benefits
 4 Sprinkler Myths & Misconceptions - Business Sprinkler Alliance - YouTube
 5 Langar Industrial Estate Fire - Could a Sprinkler System have helped? – YouTube - <https://youtu.be/zuBxj7JAafQ>

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New members

A very warm welcome to all our new Members. Despite the difficulties we have faced in the sprinkler industry throughout the last nine months we have continued to attract high calibre companies to join our trade association. We also welcome back some Members who have re-joined BAFSA.

The list is a selection of Third-Party Accredited Sprinkler and Mist installers; a Mist Nozzle manufacturer and a pump products manufacturer; and companies specialising in Sprinkler System Design, Fire Engineering and Sprinkler Servicing and Maintenance. We look forward to welcoming all of them to our online committees and meetings.

Sadly, as is always the case each year we have lost some Members. Whether it is due to the COVID 19 situation or due to changes in company policies, we are always very sorry to lose Members and hope that when conditions change, they may come back and join us once more.

- Preheat Engineering Ltd
- Network Cable & Pipe Supports Ltd
- ASCP Group Limited
- Cannon Fire Sprinklers Ltd
- Plumis Ltd
- ASAP Fire Systems Ltd
- Bailey Fire Services Ltd
- Allianz Insurance PLC
- ELMech Ltd
- Fire Sprinklers Scotland Ltd
- Discovery Fire Sprinklers Ltd
- Aquatherm UK Ltd
- Argus Fire Protection Company Ltd
- Fireworks Fire Protection Ltd
- Congruent Design Solutions Ltd
- EFSN
- NFSN
- BSA
- IFSA

- No longer Members of BAFSA:
- AD Sprinklers Ltd
 - Bailey & MacKay Ltd
 - Geberit Sales Ltd
 - Woodford Pipeline Contracting
 - Firetech Pump Services Ltd
 - Dragon Sprinklers Ltd
 - Falcon Fire Sprinklers Ltd
 - Rad Fire Sprinkler Co Ltd
 - Pel Fire Sprinkler Services Ltd
 - Lenpart Group

From the sprinkler head

A ROUND-UP OF NEWS FROM BAFSA & ITS MEMBERS



Aspirated High Expansion Foam Generator

Viking has launched the first Aspirated High Expansion Foam Generator with UL Listing. The model VGH10000 High Expansion Generator (HEG) is intended for use in risks where total volume flooding is required such as aircraft hangars, warehouses, cable tunnels or engine rooms. High expansion foam can be a suitable protection method for ignitable liquids, ordinary combustibles and liquefied natural gas (LNG).

The VGH10000 is an aspirated type generator using the velocity of the foam solution flow to draw large amounts of air into the generator and onto a mesh screen along with the foam solution to create highly expanded and stable foam bubbles. This principle means no outside power requirements and no moving parts thereby eliminating possible failure points and minimising costly maintenance.

Viking
viking-emea.com



Purpose built office & warehouse

It was going to be an incredibly exciting and important year for Applications Engineering in 2020 but as we all know C-19 put a dampener on nearly everything. Despite this we were delighted to move into Liberty House, our purpose-built offices and spacious warehouse at the start of March.

Our new facility gives us the opportunity to increase our service levels, provide more product solutions for our customers and to help grow the company as we continue to welcome new business and exciting new product developments.

We are itching to welcome customers and suppliers to our new premises and look forward to 2021 when we hope to be able to finally officially open and celebrate Liberty House, Liberty House on Ashdown Business Park in Maresfield East Sussex as our new home.

APPLICATIONS ENGINEERING
Appeng.com

Two New Appointments

Preheat Engineering has announced two new appointments, both of which are new roles for the company.

Lynda Terry takes the role of Business Development Manager. Lynda has been in technical sales roles for a number of years. At Preheat, Lynda will be responsible for not only building new business relationships, but developing existing clients to enable them to benefit from Preheats products, services and manufacturing capability.

Melanie Frobisher joins from wide format printer distributor, Colourgen where she led the marketing team for more than 10 years. Prior to Colourgen she held various marketing roles in US-based company, Bell & Howell. Melanie will be responsible for developing marketing strategies, campaigns and assets, as well as over-seeing web and social media activities and expanding activity with association and regulatory bodies.

Simon Gristwood, Managing Director, says, "These are really exciting times for Preheat Engineering. Business has grown considerably for us over the past 5 years and with the introduction of the FALCON system alongside our renowned PEREGRINE heating system, we are set for further growth in a buoyant market. Both Lynda and Melanie come from technical backgrounds with great experience and I'm delighted to have them both on our team"

PREHEAT ENGINEERING
preheat.co.uk

From the sprinkler head

A ROUND-UP OF NEWS FROM
BAFSA & ITS MEMBERS



Industry's tallest ceiling- only warehouse protection

Johnson Controls has released the new TYCO® Model ESFR-34 Pendent Sprinkler (TY9286). This early suppression, fast response sprinkler provides the tallest ceiling-only fire protection and narrowest aisle width currently available. The ESFR-34 sprinkler helps protect storage arrangements of 50 feet (15,2 m) with a ceiling height up to 55 feet (16,8 m) and aisle widths as narrow as six feet (1,8 m). It can be installed with a maximum element-to-ceiling distance of 17 inches (432 mm), the farthest distance in the industry. These features make the ESFR-34 Pendent Sprinkler suitable for warehouse and storage operations seeking design flexibility for increased storage.

"With today's consumers increasingly turning towards e-commerce, the storage and warehousing industry is being reshaped through increased demand of an ever-changing set of products," said Lucas Eidenmuller, global product manager, Storage Sprinklers, Johnson Controls. "These expanding facilities require proper fire protection that helps them adapt to the needs of the business while keeping products and property safe at all times. This sprinkler provides an innovative solution to that problem."

With a nominal K-Factor of 33.6, the ESFR-34 sprinkler is especially advantageous as a means of eliminating the use of an in-rack sprinkler system when protecting high-piled storage. The sprinkler uses a fast-response fusible link available in both 165°F (74°C) and 212°F (100°C) and is approved for Class I-IV commodities and cartoned unexpanded plastics stored in single or double row racks.

JOHNSON CONTROLS INTERNATIONAL
tyco-fire.com



Quality, responsiveness & flexibility

One of the key Values of Sale Engineering Products is our positive and innovative attitude to customer service and responsiveness.

For some months now, any installing customer or end user can extend their 1 year warranty to 2 years for no cost whatsoever, simply by registering the (SEP-manufactured) product online – this takes just a minute, and is accessible on your smartphone using the QR code on our 'Thank You' slip inside every box. SEP's MD says, "We are surprised that more customers have not taken advantage of this – it costs not a penny and gives additional peace of mind for both you and your client. We fully stand by our products, and this is another demonstration of our commitment".

More recently, we have also been affixing an additional label to every manufactured product (compressors, initiation boards, booster pumps, and of course ZONE GUARDIAN) which gives access to our comprehensive Downloads page on our website – this can be filtered to get detailed data sheets and O&M information on our range, quick access to troubleshooting guides etc. Rob Bell again comments, "Our Downloads page was completely overhauled during lockdown#1, and now includes product filters to allow easy access to lots of information on everything we offer. It's quite common over time for hard-copy manuals to be misplaced, so a portal to our library allows anyone installing, maintaining or replacing our products to find what they need quickly and contact us if they need more help".

SEP is pretty sure that its Quality-Responsiveness-Flexibility ethos is what has kept us extremely busy at a difficult time, something we don't take for granted. Stay safe everyone.

SEP
firesprinkler.co.uk



UK funding award

Plumis has been awarded a Smart Grant of £349,526 from Innovate UK to enhance its ground-breaking fire safety technology. Trusted in more than 10,000 homes including eleven sheltered schemes managed by Lambeth Council, Plumis' award-winning fire suppression misting technology Automist® is an easy and cost-effective modern alternative to the traditional sprinkler.

For this particular half a million pounds project, Plumis will be funding 30 per cent towards the research and development costs. Determined to continue spearheading the innovation of the next generation of fire safety systems, Plumis plans on adding further value to its Automist® system by making it smarter and even more cost-effective for housing providers. William Makant CEO and co-founder of Plumis, said: "Our mission is to keep evolving our technology to ensure it meets the ever-changing fire safety needs and offers innovation to the housing sector when facing other technological challenges."

By combining its advanced engineering technology with Internet of Things (IoT) and home safety and security applications, Plumis plans on taking its advanced fire suppression systems to the next level. "In this next phase of research and development, we'll be utilising our systems temperature sensors to provide environmental monitoring that can link to smart thermostat functionality," continued William. "In addition to this, we are exploring the capability of our sensors being used to support housing providers with keeping vulnerable tenants safe in an independent living environment, by monitoring patterns of potentially dangerous behaviour like leaving the hob switched on after cooking. By implementing this feature, our aim is to be able to offer housing providers or carers a better understanding of any potential risk in the home, particularly for those whose vulnerability or health may have changed, enabling them to intervene and mitigate any risks."

PLUMIS
plumis.co.uk



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British Automatic Fire Sprinkler Association
bafsa



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Assessed to ISO 9001
Cert/LPCB ref. 1309

LPS 1048 Cert/LPCB ref. ASC-116

From the sprinkler head

A ROUND-UP OF NEWS FROM
BAFSA & ITS MEMBERS

Fireworks present keynote on fire suppression for Custodial & Mental Health Facilities Forum 2020

BAFSA member Fireworks, one of the UK's leading water mist fire suppression companies, gave a keynote presentation on the Essentials of Fire Suppression for the Custodial Sector during the Custodial and Mental Health Care Facilities Forum on 4 November.

The 60 delegates who attended the virtual forum were professionals associated with the custodial and healthcare sectors including M&E systems specialists, architects and representatives from the Ministry of Justice.

Based on Fireworks' experience in the sector, the presentation began by analysing the specific challenges of fire suppression in custodial premises utilising recent research. This confirms that deliberate fires continue to be a significant problem and some of these fires result in injury and death. Most of these fires are successfully extinguished by custodial staff on premises. The most effective approach is a combination of automatic fire suppression within accommodation and cells backed up by either conventional hose reels or manually operated, high pressure hose reels served by mobile trolleys.

The presentation then looked at how water mist specifically addresses these challenges and particularly its unique ability to suppress smoke, often without the need for in-cell intervention.

Delegates then learnt about some of the latest fire suppression innovations that Fireworks and its sister company Hydramist have been developing to meet the Ministry of Justice's needs.

Mandatory compliance for MOJ NOMS 045 and 054

Compliance with the latest Ministry of Justice standards NOM 045 and 054 is now mandatory. The presentation explained what these new standards actually mean and how these and other regulatory requirements are being put into practice. A number of case studies were discussed, with examples from mental healthcare facilities, prisons, policy custody suites and immigration detention centres.

For more details on complying with standards and other new developments in fire suppression solutions please contact us.



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Continuous supervision

FloWatch Monitoring Systems provide continuous supervision of the main functions of a fire sprinkler system and raises supervisory audible and visual alarms in the event of an impairment of a critical element allowing corrective action to be taken.

Fire sprinkler systems fail to operate when required in approximately 6 – 8% of fires in buildings which are sprinkler protected, with over 70% of the cases investigated being due to the system being isolated or there was insufficient stored water supply.

A FloWatch Sprinkler Monitoring system supervises monitored isolation valves and raises a supervisory audible and visual alarm to allow corrective measures to be taken. The FloWatch will also monitor low level switches within a storage tank and will raise an alarm in the event there is insufficient stored water. In addition, the system can also monitor booster sets for fault and flow. switches for system activation.

The FloWatch Monitoring system is fully addressable, has 24 hour battery backup, facility for remote monitoring via any web browser and email notifications of any supervisory alarm. The system is easy to install and setup via the windows based Setup Wizard.

IPS FLOW SYSTEMS
ipsflowsystems.com



New Monitored Ball Valve

With an increase in the Sprinkler Valve Set product range we have been working on a new and improved Monitored Ball Valve Unit to further assist

our customers and installers. With an increased demand to have a valve monitoring function available which gives the absolute position of the main flow ball valve we are now taking enquiries for this new purpose made unit which sits neatly onto our valve sets and gives a variety of options for the installer to take advantage of. Pricing and full specifications are being finalised so this unit is definitely 'hot off the press'.

APPLICATIONS ENGINEERING
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Research & Development tax incentives

Leading R&D tax credit consultancy, ForrestBrown, explain how BAFSA members can claim back large costs through research and development (R&D) tax credits.

R&D tax credits are a valuable government incentive designed to reward UK companies for investing in innovation. Established in 2000, successive UK governments have maintained the incentive because it delivers positive economic benefits. HMRC estimates that for every £1 of tax it foregoes, up to £2.35 in additional expenditure is stimulated.

It's not just good news for the tax authority, it's good for UK businesses like yours. R&D tax credits can help you with funding through difficult times. With specialist advice, they can be made to work alongside the government's emergency coronavirus funding.

Best of all, you can spend them however you choose. Many businesses use the incentive strategically to grow their business. Spending their R&D benefit on by further accelerating their qualifying projects. They enhance their technical capabilities and hire new STEM talent.

For an SME, the average claim value is currently £53,876, and for some, it's worth much more. To benefit from R&D tax credits, your business must be a limited company in the UK subject to corporation tax, have carried out qualifying R&D activities, and have spent money on these projects.

Does your work count as R&D?

Understanding whether you've carried out qualifying R&D can be the biggest hurdle for businesses of all different types. That's because the definition set out by the government of what constitutes R&D is purposely broad, so that it applies to companies from all different sectors, and sizes.

Typically, we find R&D in the fire suppression industry when business are investing in creating new products, processes or systems or are modifying or improving existing ones. This could be to meet changing building regulations, to meet unique site restrictions or to integrate two or more systems together to form a bespoke system. Anywhere where a non-standard approach is required.

Often businesses face technical challenges when trying to reduce costs, improve efficiency and enhance operational performance and it is these projects which may qualify for R&D funding. Ultimately, we are looking for innovation that's faster, safer, greener or cheaper.

5 ways you might be carrying out R&D

Are you:

1. Creating bespoke technical designs to fit a complex project brief?
2. Developing new installation methods to fit-out buildings retrospectively?
3. Modifying existing processes to adhere to changing legislation?
4. Designing or significantly modifying performance monitoring equipment?
5. Automating or better connecting aspects of fire sprinkler systems to form a bespoke system?

How ForrestBrown can help

We are the UK's largest specialist R&D tax credit consultancy and the standard bearer for quality. We are members of the Chartered Institute of Taxation and our multidisciplinary team includes chartered tax advisers, chartered accountants, sector specialists and former-HMRC R&D inspectors. Having these experts allows us to maximise your claim value, minimise your time commitment and ensure your claim stands up to HMRC scrutiny.

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Technical queries & resolutions

Joe McCafferty, BAFSA'S Technical Adviser reports that, as usual, the enquiries have been many... here are a sample

? Can we use quick response sprinklers on a dry sprinkler system in a carpark.

RESOLUTION

BS EN 12845 Sprinklers rules that are commonly used in the UK. In Table 38 of that standard it states that 'quick' response sprinklers are not acceptable for use in a Dry sprinkler installation. Sprinkler systems are designed for a limited number of heads operating and controlling/supressing the fire. This limited number of heads area is called the Assumed Maximum Area of Operation (AMAO). As the dry pipe system is filled with compressed air or another inert gas this must be expelled before water reaches the fire. The theory is that during the time air/gas is being expelled that the temperature will rise and open more than the designed number of sprinklers. The logic for not allowing

quick response sprinklers in a dry system is that probably more than sprinkler than the AMAO would open and overwhelm the water supplies. Interestingly Internet searches will show that there are a few schools of thought on this theory and some say quick response is better as it expels air quicker but more heads open. My advice is to design to BS EN 12845 as the results are predictable, any other scenario is not a predictable outcome unless a system specific calculation can prove otherwise.

? As an overseas manufacturer we are seeking information on standards for our product in the U.K.

RESOLUTION

The sprinkler standards commonly used in the UK are: BS EN 12845. BS 9251, BS EN 16925, NFPA 13, 13D, 13R

There is some product specific information in these standards and BAFSA advised buying the standards and to look at them in detail. This would clarify as to whether their products are suitable for use in sprinkler systems in the U.K.

? Can we use fire collars that crush CPVC pipe where it passes through a fire wall.

RESOLUTION

Any collars or sealants should not crush and restrict flow in a sprinkler system in a fire condition. Intumescent seals used with CPVC sprinkler pipe must be of a type approved by the manufacturer of the product. Any other means of sealing the penetration should be of a type that does not have a deleterious effect on CPVC pipe.

? We have a large retail store that has a sprinkler system. It is proposed to subdivide this large store into separate retail units. What do we need to do with the sprinkler system to make it compliant with regulations?

RESOLUTION

Some large retailers have their own standard/ regulation for sprinkler systems which may may/may not be in full compliance with BS EN 12845 sprinkler rules.

Some things need to be considered :

- Normally a sprinkler 'Installation' covers only one client's premises except in say a shopping centre where the landlord's installation is sub-divided with an electrically monitored zone isolating valve at each shop.
- If the existing sprinkler system is to be shared by separate clients, then the fire insurer (possibly different insurers for each client) should be notified and get their approval acquired.
- Consider future maintenance of the sprinkler system i.e. When the system needs to be isolated for maintenance/repair then ALL clients and ALL insurers must be notified.
- Who will have control of the water supplies for the weekly testing etc?
- Building control may have an opinion so you should get their approval for any new arrangement of the sprinkler system.
- It is possible that the existing system does not lend itself to being subdivided so there is the possibility that pipe routes may need to be rearranged and new equipment like an electrically monitored zone isolating valves may need to be installed .

? We are re-decorating our everything in our premises and were told that sprinkler pipework must be a specific colour, can you advise if this is the case? The pipework will be on show in the many of the areas like halls, café, and other rooms.

RESOLUTION

The British Standard for pipe safety colours is BS 1710. I have attached a document that shows how it needs to be done. There are companies who supply pipe identification colour bands and labels so it may help if you get in touch with them.

? BS 9251 states that where a stored water supply is used for both sprinklers and hot/cold domestic supply that it must be capable of supplying water at time of 'peak demand'. How is this calculated I can't find it in BS 9251

RESOLUTION

It is correct that BS 9251 does not address the 'peak domestic flows' for apartment blocks as this would be outside the scope of the committee that wrote that standard. Normally the stored water capacity is calculated by the M+E / Health engineer and the sprinkler installer works out the additional volume required for the sprinkler system. BAFSA suggests a chat with the developers M+E engineer and they can work out the 'peak demand'.

? Is it acceptable to install only one level of sprinklers at high level above an 'open cell' ceiling in a small retail shop?

RESOLUTION

BS EN 12845 Sprinkler rules have a very definite description in how to treat sprinklers above what it defines as a Suspended Open Cell ceiling i.e. Ceilings with a REGULAR open cell construction. Normally these will be constructed of a repetitive pattern of open cells.

Sprinkler can be installed above the ceiling where ALL the following conditions are met: The total open area of the ceiling must be a minimum of 70% of the total ceiling plan. Any ceiling mounted services like lights must be counted as solid surface and calculated to achieve the 70% figure. The open cells must be at least 25mm open or the depth of the ceiling whichever is the greatest dimension. The structural integrity of the ceiling cannot be affected by the operation of the sprinklers i.e. it should stay in place when wetted by the sprinklers.

There should be not storage below the sprinklers. Normal eye level shop displays would not be considered as storage. Sprinklers installed above the ceiling can be spaced at a maximum of 3000 mm apart and no less than 800 mm above the top of the ceiling (that is from the sprinkler deflector). Sprinkler must be installed below any obstructions at ceiling level that is more than 800 mm wide. The length can be longer than 800mm. Any services above the ceiling like air conditioning ducts can be treated as walls and sprinklers spaced around them. Read BS EN 12845 rule 12.4.14 attached.

If any of the ducts are wide sprinklers may be required below them within the ceiling void, read rule 12.4.10 attached. This last requirement usually causes the most problems as deep/wide ducts can make it impossible to comply with the 800mm above ceiling dimension for the sprinkler deflector

? Can we use 'unions' on sprinkler pipes?

RESOLUTION

Unions are allowed on sprinkler system pipework. They are normally installed in situations of pipe where there may be a need to remove pipe/equipment for servicing. It is common to use a union fitting where the sprinkler pipes connect to machinery etc. i.e. if sprinkler pipes are installed under/within machinery that may need to be moved it would be usual to fit an easily removable fitting like a union. Unions are not usually fitted on pipes larger than 50mm diameter nowadays as easily removable 'grooved' joints have eliminated the need for unions.

? We have an old sprinkler system protecting our building. It was put in over 50 years ago. It has two large connections from the local water mains. One of them is leaking badly and we must isolate it to attempt a repair. If it cannot be fixed how does this affect our sprinkler system?

RESOLUTION

The type of water supply described is from two town's mains is a SUPERIOR SUPPLY as defined in the sprinkler rules .The sprinkler rules in force 53 years ago were the 28th edition LPC rules and BS 5306 Part 2. If the water supply is downgraded by just having one incoming supply, it will still operate but becomes a SINGLE SUPPLY.

This is a consideration for building insurers (if this applies) as they 'grade' the sprinkler system reliability based on the type of water supply. One connection only reduces the reliability of the supply and could result in failure if that single connection is compromised. A few extracts from the sprinkler rules are attached that may inform you more.

? We have an old sprinkler system that has had some pipework rearrangements. Our sprinkler contractor is reluctant to pressure test all the system to the current regulations. Do they have to test all the system to comply with current rules?

RESOLUTION

There is always a concern in pressure testing old pipework a pressure higher than its normal standing pressure. If an old system had a standing pressure of 7 bar for twenty years, applying the sprinkler rules requirement of 15 bar may cause old 'set' joints to loosen and leak. There was an LPCB document issued in 2008 that gives a 'more lenient' approach to pressure testing old pipework. BAFSA does not have a later/current version (if one exists). It stated: it is not recommended to test existing pipework above its normal standing pressure as it could cause leaks. The older the system the greater the risk of failure. Any new separate sections of pipework should be tested to the current standards before connecting to the old pipework. A copy of the old LPCB document is attached.

British Automatic Fire Sprinkler Association

bafsa

Ensure the highest level of protection from fire

Demand an automatic fire sprinkler system which ticks all the boxes



Designed to BS9251 or EN 12845



Installed by a 3rd Party approved contractor



Utilising 3rd Party certificated products

Anything less will not protect you or your property



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