# prinkler British Automatic Fire Sprinkler Association oa s SPRING 2025 INSIDE **Preserving the past** Protecting heritage hotels with sprinklers Car parks & EVs A look at the latest European guidelines **United approach** BAFSA and CABE join forces to boost sprinkler adoption



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#### **BAFSA FOCUS SPRING 2025**

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**British Automatic Fire Sprinkler Association** 



"Our engagement across the sector is stronger than ever"

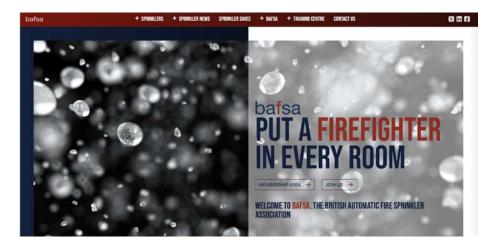


# From the chief executive

It has been a busy and eventful start to 2025 for the fire suppression industry, and BAFSA has been working relentlessly to support our members and promote their interests during this critical time.

One of the most significant developments came on Thursday 20th February, with FIRAS announcing the withdrawal of its certification schemes for commercial and industrial sprinkler systems, residential and domestic sprinkler systems and the installation of water mist systems. These schemes were immediately closed to new applicants and are set to close entirely on 31st August 2025. Recognising the seriousness of this announcement, BAFSA responded rapidly. Within 24 hours, we held meetings with FIRAS, the BRE, and IFC, followed shortly after by discussions with Part B officials and the UKAS Accreditation Director. We've facilitated direct contact between Third Party Certifiers (TPCs) and UKAS to ensure our members have a clear route forward. Additionally, BAFSA Council has agreed to implement a temporary sixmonth suspension of the UKAS-accredited TPC requirement for affected members from 31st August. This measure provides essential breathing space for companies to transition to alternative schemes or for non-UKAS accredited TPCs to secure accreditation. A review will follow at the end of this period to assess the next steps.

On the technical front, our Technical Committee continues to keep members informed of evolving standards and key developments. Members can find meeting summaries and updates via our website.



Notably, discussions continue around proposed amendments to EN 12845-2 and a working draft ISO project for design fires in enclosed parking garages.

Competence remains a high priority. I continue to serve on the Building Safety Regulator's Industry Competence Committee, chair the Setting Expectations Working Group, and lead both the Active Fire Protection and Fire Sprinklers Sector Led Groups. These roles ensure our sector is strongly represented in shaping national expectations for competence.

Training and qualifications through ABBE continue to expand, with the launch of our new CPD-accredited Principles & Practices of Automatic Fire Sprinkler Systems online course. This programme supports fire service personnel, architects, insurers, surveyors, and building control professionals in gaining essential knowledge.

Our engagement across the sector is stronger than ever. I recently chaired the National Fire Sprinkler Network, attended the European Fire Sprinkler Network in Salzburg and the SFPE Conference, and co-hosted a roundtable with the Chartered Association of Building Engineers to challenge common myths about sprinklers. I've also continued to press for stronger regulation through attendance at two All-Party Parliamentary Group meetings on Fire Safety and Rescue.

Finally, I'm particularly proud of the recent development of BAFSA's new website and back-office systems, which will enhance how we engage with members and deliver our services. My sincere thanks go to Ruth Oliver, Toni Maddox, Vicky Cuff and in particular Claire Mahoney, for their dedication and hard work in bringing this project to life.



#### New government data reinforces AFSS effectivness

New figures from the UK Ministry of Housing, Communities and Local Government have reinforced the crucial role sprinkler and water mist systems have played in managing fires across England between 2018 and 2024.

Released on April 26, the data focuses on incidents where these systems were active during primary fires. Encouragingly, the vast majority of systems that triggered were able to either extinguish or significantly control the fire.

The report reveals that systems positioned in the same room where the fire began were especially effective in containing the flames. Conversely, systems located farther away from the source of the fire had a lower success rate, underscoring the importance of strategic system placement.

While most systems performed well, the data shows that in a smaller number of cases, fires weren't fully contained. The reasons often included the fire starting outside the protected zone or technical issues with the system itself. In some instances, the exact cause of system failure wasn't

The findings paint a broadly positive picture: when functioning and properly located, sprinkler and mist systems are powerful tools in controlling fires and reducing damage.

A copy of the full report is available at www.gov.uk/government/statistics

#### RAAC money could be spent on retrofitting

RAAC redevelopment funds could go further in improving fire safety, BAFSA's Chief Executive, Ali Perry, has said in an interview in architectural and building magazine - Project Scotland.

Acknowledging the cost of installing sprinklers in existing buildings, Ali commented that the response to RAAC could present an opportunity to make cost savings and ensure the fire protection system is present in older builds.

"RAAC needs to be remedied and there's a huge amount of money being spent to remedy it, but why not fit sprinklers at the same time? We regularly see instances of school fires where parts or whole schools are destroyed. Money has been set aside to reduce the risk of collapse (because of RAAC), and with a little more spent we could see sprinklers fitted as well. Sprinklers are cheaper if you fit them whilst doing other work."

#### **BSI** publishes standard for **ESFR** and CMSA systems

The new BS EN 12845-2:2024 - Fixed firefighting systems. Automatic sprinkler systems. Design and installation of ESFR and CMSA sprinkler systems specifies requirements for the design and installation of early suppression fast response (ESFR) and control mode specific application (CMSA) sprinklers in automatic sprinkler systems.

ESFR (early suppression fast response) sprinklers tend to be used in high hazard storage scenarios to provide effective ceiling-only sprinkler protection (although ESFR protection schemes utilising in-rack sprinkler heads do also exist). Designs are typically specified in terms of k-factors, numbers of heads operating and required head pressures.

CMSA (Control Mode Specific Application) sprinkler protection tends to be used in a variety of high hazard storage scenarios, where alternative approaches are not considered suitable.

For further details visit: bsigroup.com

#### Second new entrants course added

Due to high demand BAFSA has added another new entrants course covering the Classification and Design of Pre-Calculated Commerical Sprinkler Systems to the BAFSA Training Centre.

The course will benefit from a Level 5 Award and is approved by the LPC and will run from September 2025 - one day a week for 15 weeks. All classes are online with full support for 18 months. The next course after this one will be in September 2026 so if you want a spot on the course you will need to book up quickly.

#### **Happy retirement Karen Taylor**

Good wishes have poured in for Karen Taylor who retired at the end of March this year after 30 years in the sprinkler industry.

Karen, who started with Armstrong Priestley as a temporary secretary and ended up as a director, also found time to work with BAFSA during her career. Taking over the role of Council Minutes Secretary in 2004 and going onto manage support and administrative duties for BAFSA's Council.

Stewart Kidd, former BAFSA Secretary General, spent many years working alongside Karen said. "We shall all miss Karen in the wider sprinkler community. She is one of the good ones and part of that team which took BAFSA from a virtually moribund organisation to the dynamic and effective pressure group it is today."

BAFSA's current Chief Executive, Ali Perry commented: "I first met Karen during my interview with BAFSA, and since then I've had the pleasure of working alongside her on Council. From conversations with other members and previous CEOs, it's clear that Karen has always been a thoughtful, collaborative, and highly respected voice within the association.

Her kindness and integrity have consistently stood out. Karen's retirement is a significant loss to BAFSA and to the wider fire suppression industry. I want to sincerely thank her for the dedication she has shown throughout her career - and personally, for the support she has so generously



#### **MEMBER NEWS**



#### **R Tindall Fabricators expands operations**

R Tindall Fabricators, a long-standing BAFSA member founded in 1969, is stepping up its game. Known for producing and supplying pipework for fire sprinkler systems, the company has seen a surge in demand prompting a major expansion.

Over the past year, the team has grown to 82 employees, and now, thanks to a £4 million finance package from Lloyds Bank, Tindall has added a brand new 23,000 sq ft industrial unit. That brings their total workspace to an impressive 45,000 sq ft.

The new space means more room for stock - an extra £600,000 worth - which helps speed up deliveries and improve service. On top of that, the company has invested in three semi-automated machines with the help of a £300,000 asset finance deal, making production faster and more efficient than ever.



#### **Government launches** independent building control panel

The Ministry of Housing, Communities, and Local Government has announced an independent panel led by Dame Judith Hackitt, to review the UK's building control system in response to the Grenfell Tower Inquiry Phase 2 recommendations. The panel will examine fire and structural safety, conflicts of interest, and the potential removal of commercial influence from the system.

Panel members include Elaine Bailey, Ken Rivers, Rt Hon Nick Raynsford, and Dr David Snowball. Their findings, expected in autumn 2025, will guide reforms aimed at delivering safer buildings. Minister Alex Norris MP called the panel "a significant step" toward a more accountable construction industry.









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# Taking charge

The European Fire Sprinkler Network (EFSN) was part of a task group that helped inform the European Commission's new guidance document on fire safety in car parks. EFSN chief executive Alan Brinson provides an overview and explains why it is broadly positive for sprinklers

Usually the European Commission (EC) refrains from writing anything about building fire safety, since the Member States of the EU have legislative competence (jurisdiction). However, the Directorate-General for Mobility and Transport became concerned that bans for fire safety reasons on electric vehicles (EVs) and charging stations in covered car parks could hinder the uptake of EVs.

A switch to EVs is important to achieve the EU's climate goals. Two years ago it formed a task group of which the EFSN became a member, firstly to look at what fire safety measures are applied for car parks across Europe and, secondly, to provide some guidance.

In March 2025 the EC's Sustainable Transport Forum published *Fire safety* – *electric vehicles and charging infrastructure*. Although it states, 'The document reflects the views only of the members of the STF. The document does not imply a policy position of the European Commission', it is likely to be seen as good practice by some.

The guide focuses on EVs intended for passenger transport, such as cars and vans equipped with lithium-ion batteries. It reminds us that internal combustion engine vehicles (ICEVs) are 8-10 times more likely



than EVs to experience a fire, although this may change as the EV fleet ages. Research conducted by RISE, a Swedish fire laboratory, showed that EV fires 'are not significantly larger, more intense, or more dangerous than those in ICEVs', nor do they spread faster to other vehicles but they do take longer to extinguish.

For the overview of national or subnational fire safety requirements for car parks it was difficult to present a fair view. Some countries had very few fire safety requirements for car parks but had introduced additional requirements for those accepting EVs or charging stations, while other countries already had stringent requirements so added nothing for EVs. Many countries require sprinklers in underground car parks, often with an area threshold. This is not always reflected in

the guide since it concentrated on the additional measures for EVs. Interestingly, some countries or regions now require sprinklers in above ground covered car parks in areas with EV charging points (Barcelona, Czechia, France), while others such as the UK recommend they be considered.

Next the guide explains and discusses thermal runaway and the difficulty to end it. The guide also discusses the hazards from battery fires, such as an explosion from the release of hydrogen and other flammable gases, as well as of reignition after extinguishment. To help with reignition risks, 'some vehicle manufacturers are developing new housing technologies that allow firefighters to directly access the battery packs'. What can cause a battery fire in an EV is discussed, as are the perspectives of car park owners and insurers.

Finally the guide addresses risk reduction, under Prevention, Detection, Evacuation, Propagation Control and Extinguishing. The evacuation section states, 'sprinklers are effective at controlling fire development within covered car parks'. In the propagation control section it states, 'Automatic fire protection systems play a crucial role in limiting the propagation of BEV fires in covered parking lots. Sprinkler or mist systems are the main technologies considered'.

A short paragraph explains how sprinklers work and mentions their acceptance by insurers. Water mist is also discussed and included as an alternative to sprinklers. Both systems are presented as a means to prevent fire spread between vehicles, protect the car park structure and reduce emissions of toxic gases. The guide briefly lists requirements for sprinklers in covered car parks in codes and standards, including in NFPA 88A, Standard for Parking Structures, the International Building Code, used in much of the USA, the design standards EN 12845 and NFPA 13, and in the Belgian and Dutch fire safety regulations. It also refers to the EFSN position paper on sprinkler protection of car parks that accept EVs. The guide ends with lists of recommendations. Sprinklers are not included as a core measure (nor are they in the UK) but are recommended as a measure to prevent damage.

This guide is positive for sprinklers and much better than initial drafts. It was the best achievable against competing interests, not least the car park owners who accepted sprinklers in new car parks but wanted to avoid any suggestion they should retrofit.

# Clearing the lines of communication







BAFSA has been working with the Chartered Association of Building Engineers (CABE) to explore some of the barriers to the uptake in fire suppression systems. Here we look at the key takeaways from these meetings

It is hard to ignore the rapid drumbeat of change in the building industry, including the re-writing of standards around building safety, and particularly the focus on improving life safety outcomes in the event of a fire. As part of this drive to improve safety, requirements for sprinklers in England have been progressively introduced for residential and other buildings at lower and lower levels of height (from 31m to 18m to 11m in residential properties, with requirements for care homes the most recent expansion of applicable scope).

At the same time, requirements for sprinkler systems in other building types, eg schools, are being reduced or removed entirely. Pressure to reduce overall capital cost is intensifying, putting further downward pressure on project budgets.

The result is complex and sometimes contradictory, with mixed messaging around the relevance and utility of fire suppression systems. This absence of a consistent approach in regulation and policy can leave specifiers and designers exposed to intense commercial pressure without the evidence and 'tool kit' necessary to justify inclusion of additional layers of fire safety beyond those specified in regulations. Given that building regulations have historically been based solely on life safety (rather than property protection) considerations, the application

of fire suppression systems remains patchy

For designers, this is particularly treacherous territory. They have already weathered a period where obtaining adequate Professional Indemnity Insurance proved both expensive and difficult, with extensive, and sometimes unworkable, exclusions on fire safety measures mandated by underwriters.

The additional liability on designers as dutyholders under the Building Safety Act has further increased specifier exposure, and case law1 is now clarifying that it is the ability to meet the functional requirements of the building regulations (rather than simply following the guidance in an Approved Document) that really matters when it comes to meeting contractual obligations for compliance.

As if this wasn't already a perfect storm, the Grenfell Inquiry Phase 2 Report raises serious questions as to whether assumptions about the effectiveness of compartmentation can be relied on, particularly where a 'stay put/defend in place' strategy is adopted within a building. Loosely translated, this implies that a building meeting the minimum standard where this is primarily reliant on compartmentation to prevent the spread of fire may not perform as well as expected.

Providing an additional level of mitigation by incorporating fire suppression systems, and sprinklers in particular, seems an obvious way for designers to address these multiple drivers for change. Adding sprinklers to an already compliant design clearly demonstrates that minimum standards have been exceeded - sprinklers provide significant added mitigation in the event of compartmentation failure, proven to save lives and prevent fire spread to a high degree of certainty. Specifying sprinklers provides additional confidence for insurers in terms of both professional liability and in assessing property-loss exposure. This appears a no-brainer, but widespread adoption of sprinkler and water mist systems is still far from the norm. So, what is going on?

Working with BAFSA, CABE has been talking to our members and architects in wider industry to understand how fire suppression systems are understood and why they are, or are not, adopted more widely.

Architects, designers and specifiers suggest that a wide range of factors make it harder to justify fire suppression system inclusion. Many of these aren't new, but what is surprising is that these barriers continue to persist despite the significant change in focus on fire safety. This suggests that there is a degree of 'safety washing' in

"What is surprising is that these barriers continue to persist despite the significant change in focus on fire safety. This suggests that there is a degree of 'safety washing' in industry, whereby stated commitments to improving safety outcomes are not followed through in practice."

industry, whereby stated commitments to improving safety outcomes are not followed through in practice.

#### Missed opportunity

Organisations commissioning building work frequently misunderstand the difference between life safety requirements in building regulations and whether those requirements provide for property protection — which they do not. Clients remain naive in this respect, and too often there is no linkage between the building brief (driven by capital cost) and lifecycle and operational cost. This disconnect between insurers of operational buildings and clients was often cited as a missed opportunity at the earliest stage of inception and created significant weaknesses at the procurement stage.

Clients and their cost consultants still see sprinkler provision as a luxury unless required by regulation. Clients in this context are primarily Design and Build, Tier 1 or Tier 2 contractors who have supplanted the end user as the primary source of decision-making for specifiers. Specifiers suggest that regardless of other considerations, the

bottom-line capital cost still predominates in decision-making, whether to win work or to maximise profit margins. This is a deep and wicked problem to address given the way in which costs are assessed.

In particular, budgets are typically based on previous project costs. If those projects don't require sprinkler systems, no allowance is made for sprinkler systems which remain prone to early so-called 'value engineering'. If it's not required in regulation, or a requirement specified by the end user (building owner or developer), systems will be ruled out. This then becomes self-fulfilling from one project to the next as budgets are inadequate to add further levels of mitigation.

#### **Complexity and clarity**

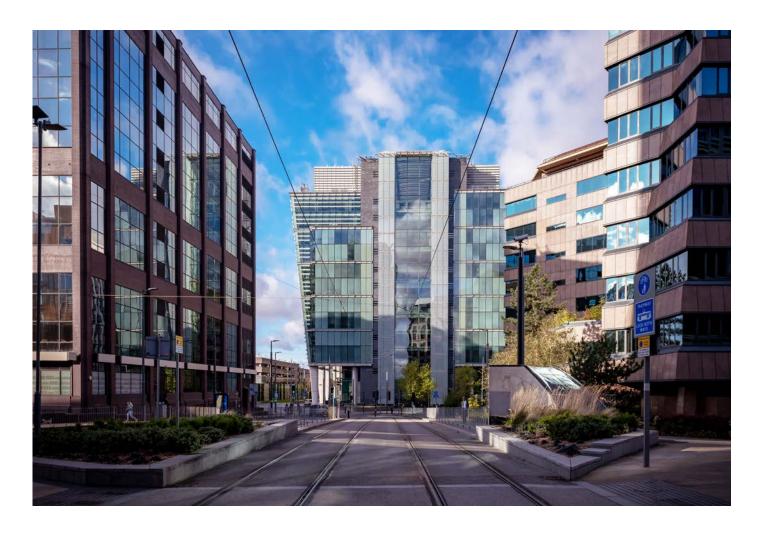
Designers and specifiers cite the complexity of applicable standards and system design as a problem in understanding how to integrate sprinkler systems into their building projects. Critically for the fire suppression industry, technical complexity is perceived as being mobilised to win work by suppliers using differing system terminology to differentiate

products or arguing that different approaches are superior without basing those statements in fact.

These may be considered legitimate sales strategies in some sectors, but in practice this undermines designer/specifier confidence in fire suppression systems overall. If designers are not confident that they understand what they are arguing for, they are more likely to avoid making the case for sprinkler provision overall.

The difference between new build and retrofit properties has been identified as an area where competition between differing systems can be detrimental to the best outcome. Whilst some designers note that space for tanks and pumps is always an issue in smaller existing buildings, others state that maintaining compartmentation and accommodating distribution pipework was a significant concern, particularly given the need to maintain compartmentation.

These issues were amplified in retrofit to existing buildings where introducing extensive pipework could cause new fire safety problems unless undertaken to the highest standard, or where constraints make



larger diameter penetrations for sprinkler systems difficult to accommodate.

In these circumstances, alternatives such as mist systems requiring smaller more manageable penetrations and lower pressure may be beneficial but get ruled out because their performance is often queried in comparison to a traditional sprinkler system. This is viewed as a potential own goal - a viable mist system in an older high-rise building may be the best possible improvement, but confidence issues generated by competition between system suppliers can obscure the positive case for their inclusion.

#### Appetite for change

The discussions to date suggest a significant appetite amongst informed designers to increase specification of fire suppression systems - they understand the life safety and property protection benefits which transfer into their own responsibilities and liabilities. But they need help to make the case for change. Rather than designers being seen as the problem, they need recognising as allies in increasing fire suppression system use.



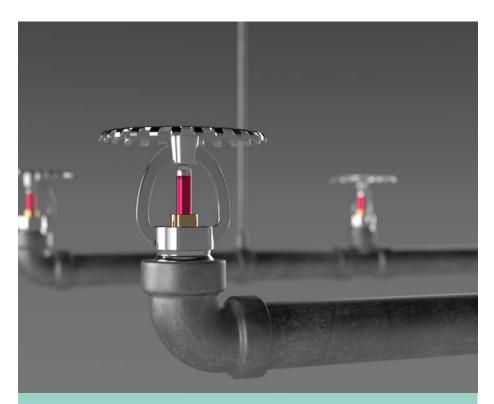
#### **About CABE**

CABE is a member-focused, nonprofit organisation that brings likeminded professionals together. A multi-disciplinary Chartered body and **Professional Engineering Institution** licensed by the Engineering Council, CABE shares knowledge, raises standards and develops professionals, enabling a construction sector that works to create better, safer and more sustainable buildings.

Find out more by visiting www.cbuilde.com

#### **BAFSA & CABE Partnership**

BAFSA will be continuing to work alongside the team at CABE to share knowledge and expertise in the areas of fire safety in relation to sprinklers. For the latest updates on this please follow BAFSA on LinkedIn or check our website:www.bafsa.org.uk



## Working together

#### Specific takeaways from BAFSA and CABE discussions raised the following points

- Client requirements are key; there is a need to improve client understanding of life-cycle risks and benefits, the difference between life safety and property protection, and to build bridges at the commissioning/briefing stage between building operators/end users and operational insurers.
- 2. The case needs to be made for sprinklers and fire suppression systems being the additional level of mitigation required to provide evidence of exceeding minimum regulatory requirements, which in turn helps demonstrate new duties for designers and clients – both parties win.
- 3. The industry needs to simplify system complexity for specifiers so they have confidence in making recommendations to clients. The aim must be to grow the market, rather than seek to improve margins on the same market size – only by increased use of fire suppression systems will we see improved life safety and property protection outcomes.
- 4. More research and better guidance is required on using the full range of fire suppression systems in the right context. In particular, confidence needs to be increased in systems that are viable in existing buildings, even if the overall performance is less certain than systems that would be specified in a new build.



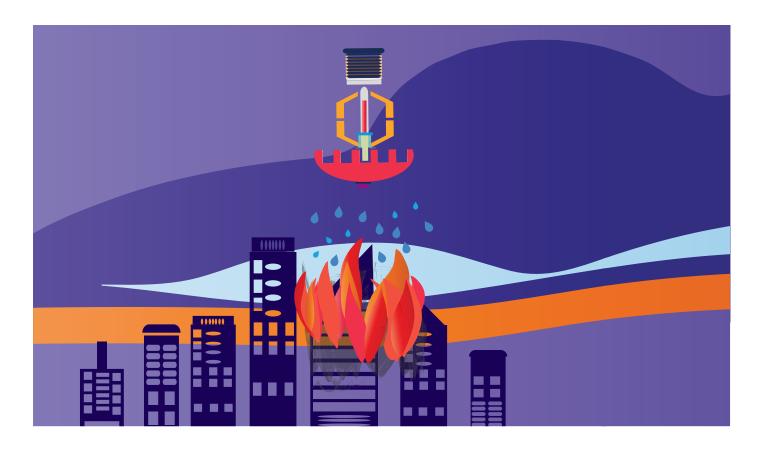
Note: Sometimes it is necessary to reply to enquiries by giving 'an opinion' rather than referring to any hard and fast stipulation in the sprinkler rules, either UK, European or American.

Question: Who is responsible for specifying the automatic sprinkler system hazard category for the building. Is it the specialist fire engineering firm or the sprinkler contractor or some other company/body? Joe: Sprinkler contractors commonly work with fire engineering companies at the very early and planning stage of contracts. This

gives them the possibility that they will be allowed to tender for the contract, though this is not guaranteed.

During these early stages they can advise on the hazard classification and any complexities about the contract. So basically, some fire engineers may make use of this free service offered by the sprinkler contractor. The fire engineers may have their own people capable of classifying the risk. Some of the larger fire engineering firms will have people very capable of defining the hazard classification without any further assistance from the contractor.

When the contract is at the early/ planning stage the contractor must specify:



the sprinkler rules being used, the hazard classification and many other aspects on tender drawings and the sprinkler specification. If the hazard classification is not disputed by any AJH or AHJ or fire insurers, then the responsibility lies with all concerned.

All AHJ or AJHJ's and fire engineers have an opportunity at the very early stage to dispute classification and I think most sprinkler installers would get this agreed before work commences. As for BAFSA, it can only have an opinion based on what the sprinkler rules specify. These are clear, but the list of 'authorities having jurisdiction' is not very extensive. I have come across lots of jobs where the hazard classification has been dictated by, say a fire engineer or maybe the fire insurers. I have also seen many jobs where the sprinkler contractor sets the hazard classification at tender stage.

This is what BS EN 12845 states:

4.2 Initial considerations: When preparing the outline design, consideration shall be given to aspects of building design, building systems and work procedures that might affect the performance of the sprinkler system. Although an automatic sprinkler system usually extends throughout a building or plant, it should not be assumed that this entirely obviates the need for other means of fire protection, and it is important to

consider the fire precautions of the premises. Account shall be taken of interaction between sprinkler systems and other fire protection measures. Where a sprinkler system or an extension or alteration to a sprinkler system is being considered for new or existing buildings and industrial plant the relevant authorities shall be consulted at an early stage. The authorities should be consulted when the hazard classification is being determined.

BS EN 12845 describes authorities as follows:

3.13 authorities organisations responsible for approving sprinkler systems, equipment and procedures, e.g. the fire and building control authorities, the fire insurers, the local water authority or other appropriate public authorities.

NOTE: None of the descriptions of what/ who are classified as 'AUTHORITIES' mention fire engineers. The description of 'authorities' is who/what organization/company has a say on whether the building complies with regulations i.e. public authorities and fire insurers. I think where things stand currently is that the contractor may or may not have the hazard classification dictated to them at tender/specification stage.

LPC Sprinkler rules lean more toward having the insurers advise and/or approve the hazard classification. LPC Sprinkler Rules Technical Bulletin 205 mentions the

following:

TB205.1 Ccnsultation: It is essential that the fire insurer be consulted at appropriate stages in the planning and construction of a sprinkler system or alteration of an existing sprinkler system where sprinkler protection is a prerequisite of the acceptance of the risk or where property protection is considered in determining the insurance premium. COMMENTARY AND RECOMMENDATIONS ON TB205.1 The insured is required to consult the relevant authorities at an early stage in planning the sprinkler protection (see BS EN Clause 4.2). Following the initial consultations the fire insurer may be prepared to assist an insured with the production of an outline sprinkler system specification, helping to ensure the acceptability of the design concept and uniformity of criteria for any competitive tender. The insured should not overlook their responsibility to satisfy the requirements of other interested authorities.

Question: We have a sprinkler system in our house and were advised that the system was maintenance free for 50 years. Seems a very long time, is that correct?

Joe: I have never heard of a sprinkler system that is 'maintenance free' for any period of time let alone 50 years. I suspect maybe what you were told is that the materials the

#### **BAFSA FOCUS SPRING 2025**

sprinkler system is made from have about a 50-year life expectancy. There are no sprinkler systems that are maintenance free. All sprinkler system rules/standards have maintenance/testing periods varying from weekly, three monthly, six monthly, yearly and so on. If the system has not recently been maintained then it needs to be urgently checked, tested and maintained and at regular intervals thereafter.

Question: Looking through Approved Document B, the only recognised standard that I can find for non-dwellings is BS EN 12845. There is no mention of NFPA 13 or any other standard. Would a building fitted with sprinklers designed to NFPA 13 be permitted in the UK. Is NFPA very different from BS EN 12845, can you advise which might be the more onerous?

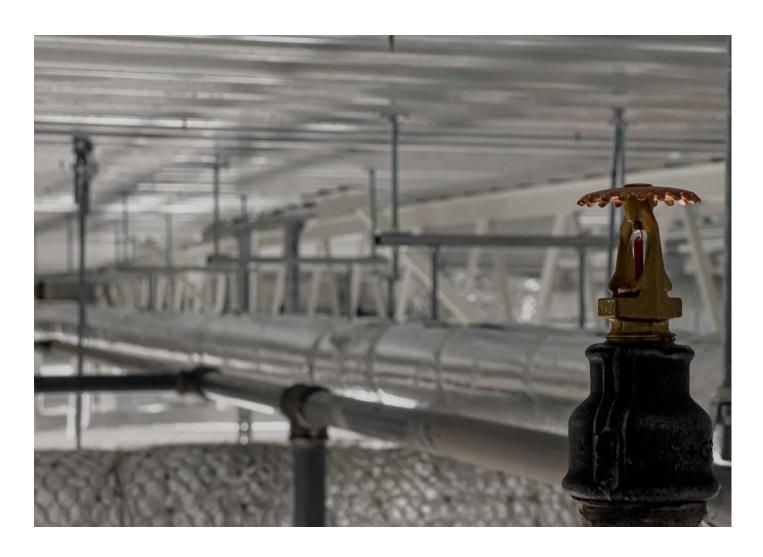
Joe: I have not heard of using NFPA 13 to comply with ADB but it's a good robust standard that is as good as BS EN 12845. There are differences between NFPA 13 and BS EN 12845 like water supplies, areas

of sprinkler operation, selection of water supplies from graphs rather than set tank sizes. But it not particularly onerous in comparison to BS EN 12845. Before you get too deep into NFPA research I would suggest you speak to the relevant building control department in the area to see how they feel about using NFPA 13 for compliance with ADB. NFPA 13 is a sound standard that is used quite often in the UK particularly for some American hotel groups and probably others. So, Building Control will have come across it. You can have a look at NFPA standards free online access on their website. NFPA have a Life Safety Code in NFPA 101 that would probably be used by the equivalent of Building Control in the US, might be worth your while having a look at it online. Maybe you can convince Building control if you also apply NFPA 101 as well as NFPA 13. One of my BAFSA colleagues advised the following: Building Regulations do allow the use of other standards than the BSEN standards, they will require assurances that the system installed meets both the requirements of the standard used and the

functional requirements of the Building Regulations. This is normally achieved by selecting a designer and installer with the necessary accreditations.

Question: We are refurbishing an old building where we have to install a sprinkler system to satisfy local Building Control requirements. We have employed a plumbing contractor and were wondering if they could also install the sprinklers. They say they have not done this type of work before.

Joe: Can your plumbers install the sprinklers? Yes they can, but if they do not have experience of installing sprinklers there is no guarantee that the system will be done correctly or at worst may not operate in a fire situation. Approved Document B mentions the following: Suitably qualified and experienced construction professionals should also be engaged where necessary. Since Building Control are asking for the sprinkler system, they 'would probably' want to see a 'certificate of compliance' which only a 3rd-party accredited sprinkler installer





can provide. Can the plumbing contractor be trained to install sprinklers. Yes, but it's not a quick process. BAFSA have several training courses that you can view on our website: www.bafsa.org.uk

Question: When BS 9990 states: "Fire mains and associated pipework and fittings should be of suitable heavy quality steel to meet the pressure, robustness and durability requirements of the system in question". Does it have to be the 'heavy' grade in BS 10255, or can we use BS 10255 'medium' type which is still suitable for the water pressures encountered in the system?

Joe: BS 9990 is clear on the type of pipe it recommends, i.e.heavy. The opening pages BS 9990 states the following:
Use of this document: As a code of practice, this British Standard takes the form of guidance and recommendations. It should not be quoted as if it were a specification, and particular care should be taken to ensure that claims of compliance are not misleading. Any user claiming compliance with this British Standard is expected to be able to justify any course of action that deviates from its recommendations.

As the use of 'medium' quality steel pipe is an 'action that deviates,' I would expect the installer to justify the deviation by getting written approval from ALL the AHJ's that this deviation is acceptable to them. If a client/consultant/other specifies that the system 'must' comply with BS 9990

then the installer must tender on that basis and point out any deviations that are not in full compliance. BS EN 10255 has two main types of pipes i.e. Heavy and Medium. It is my understanding that when BS 9990 states 'heavy' it means the 'heavy' type in BS EN 10255 or similar in any other standard of pipe.

Question: We have an underground pumproom housing the sprinkler pumps. Can the weekly pump run, and inspection be done by using a remote starting device and CCTV monitoring? An annual physical inspection would still be done. Our engineers say this is considered a confined space as it can only be accessed through a ground level access hatch and a ladder.

Joe: According to the confined space regulations a "confined space" means any place, including any chamber, tank, vat, silo, pit, trench, pipe, sewer, flue, well or other similar space in which, by virtue of its enclosed nature, there arises a reasonably foreseeable specified risk. Your underground pumproom with this singular limited access would be considered a confined space. You would like to test the pumps etc without having to go into the underground confined space pumproom. BS EN 12845 (sprinkler rules) only states the pumps must be run weekly without further elaboration on how to manage this task in a confined space. If there are fire/property insurers involved they should be consulted with a plan of proposals

of how testing can be done remotely. They may or may not agree but may give an opinion of what they find acceptable. The Loss Prevention Council Rules (LPC Rules) states the following on its introduction page: Care and Maintenance of automatic sprinkler systems: Weekly testing has incorporated the need to never leave a pump running unattended.

And in its technical bulleting *TB203* it mentions the following: 203.2.2.4 b): The pump shall not be left unattended at any time while testing. The LPC Rules also includes a good booklet titled *FPA Guide to working in confined spaces* which may be useful reading for you.



To submit an enquiry or questions to Joe visit the BAFSA website www.bafsa.org.uk







The tragic fire that recently claimed 78 lives at a Turkish ski resort has once again cast a harsh spotlight on the deadly risks hotel fires pose to both people and property. In response, Stewart Kidd dives into the critical challenges and emerging solutions surrounding the retrofitting of fire suppression systems in hotels, with a particular focus on the unique demands of heritage buildings

The need for historic building conversions to comply with current fire safety standards has always been controversial. It's not just a matter of cost and aesthetics, the impact on historic fabric also causes concern from listing authorities and the amenity lobbies.

It has been argued that as fires in UK hotels are relatively rare, the need for expensive fire safety measures should be considered on a cost/benefit basis. However, the very rarity of multiple fatalities means that when these do occur, this tends to amplify the horror felt. For example, in the case of the January 2025 fire in a Turkish ski resort where 78 people are reported to have lost their lives in the Grand Kartal Hotel, reports suggest that none of the expected fire safety measures were present, or if they were, they were not working.

Sadly, Scotland has suffered two serious fatal fires in hotels in 'traditional buildings' in the past 10 years. The first in the Cameron House Hotel in December 2017. A luxury hotel on the shores of Loch Lomond, it consists of the original 19<sup>th</sup> century B-graded structure and several modern extensions. On 18 December 2017

a serious fire destroyed much of the older part of the house and killed two guests.

On 2 January 2023 another serious fire in Scotland broke out in the 19<sup>th</sup> century New County Hotel in Perth where three residents died.

Both fires occurred during the nighttime and in both cases reports suggest that statutory fire safety standards were not being complied with and that recommendations from the fire service had not been complied with.

#### **Regulatory reform**

It has long been recognised that hotels present a special risk in terms of fire and life safety.

Many of the greatest death tolls in fires internationally have resulted from fires in hotels. Fires in hotels and similar sleeping accommodation have been subject to special controls in the UK for many years – these being finally codified in the Regulatory Reform (Fire Safety) Order 2005 and the Scottish and NI equivalent.

In fact, the Fire Precautions Act 1971 was influenced by public concern following the fire at the Rose & Crown, Saffron Walden on 26 December 1969 which killed 11 people. There have been no further very large life loss UK hotel fires in the past 50 years compared with other countries.

While there have been several serious fires resulting in the virtual destruction of quite modern hotels – for example, the 2019 fires in the Holiday Inn, Willenhall and the Premier Inn, Bristol, there was no loss of life in either fire. To some extent, these two fires have resulted in a degree of complacency in official circles. 'Surely,' the argument goes, 'the fact that there were no casualties proves that the present fire safety regime works'. Despite the loss of both buildings and all that entails.

#### **Reasons for concern**

The reasons why the potential for large scale life loss is a concern in hotels is implicit in their function and operation. If we consider the key life risk factors for all buildings as set out in Government guidance, all of the prescribed factors are likely to be present.

In the case of heritage or historic buildings the usual FRA criteria should be augmented by consideration of the heritage, aesthetic and cultural value of the property and its contents as well as factoring in the impact of firefighting activities. In the case of older buildings, special attention needs to be paid to the potential problems of structure and materials. Fires spread more easily where there is insufficient compartmentation and where there are unstopped shafts, ducts, voids and flues (factors in the spread of the Cameron House Hotel and New County Hotel fires). The age of the building will usually determine its type of construction and the inherent fire risk and fuel load.

#### The Cameron House Hotel fire on 18 December 2017

Unusually, the causes, spread and impact of the fire are well documented as a result of the SFRS investigation mandated by Sherriff Thomas McCartney under the Inquiries into Fatal Accidents and Sudden Deaths etc (Scotland) Act 2016<sup>1</sup>.

Quoting directly from the Sherriff's findings, the two deaths resulted from:

"...a fire which began in the concierge cupboard of the Hotel, as a result of hot embers within ash igniting combustibles within said cupboard. The fire spread from the cupboard through voids and cavities in the structure of the building and escaped into the reception area once the door to the cupboard had been opened, thus causing fire and smoke and fire gases to spread extensively throughout the old part of the Hotel".

This the proximate cause of the fire was therefore:

- Careless disposal of hot ash i.e., the removal of hot ashes from open fires in the hotel as part of cleaning them; exacerbated by:
- The presence and impact of hidden voids allowing easy and rapid fire and smoke spread.

#### The benefit of automatic fire suppression systems

There can be no doubt that the installation of automatic fire suppression systems is an effective method of protecting life and property in hotels.

This was recognised in Sherriff McCartney's Report which included the recommendation that:

- The Scottish Government should consider introducing for future conversions of historic buildings to be used as hotel accommodation, a requirement to have active fire suppression systems installed.
- The Scottish Government should constitute an expert working group to more fully explore the special risks which existing hotels and similar premises may pose through the presence of



The Cameron House Hotel fire December 2017. Fire sprinklers have been included in the rebuild. Picture: Geograph



Grand Kartal Hotel Turkey which was ravaged by fire in 2025. Picture Melih Rustu Calikogl

hidden cavities or voids, varying standards of workmanship, age, and the variance from current standards and to consider revising the guidance provided by the Scottish Government and others.

It's worth noting that within his Section  $26(1)(b)^2$  observations regarding fire suppression, Sherriff McCartney went so far as to suggest that: 'Given the potential added fire protection provided by an active fire suppression system, if such installation was said to be impossible or impractical in specific premises, it may be that such premises are simply not suitable as hotel accommodation.'

In 2023 the Scottish Government set up a working group to consider whether and how Building Standards should be amended to require fire suppression systems in certain hotels. The conclusions and recommendations of the working group<sup>3</sup> are presently being considered by Ministers.

#### Heritage buildings: Public domain guidance

The weaknesses of some heritage buildings and the specific causes of the Cameron House Hotel fire are covered in several publicly accessible guides. Most specifically, in Historic Environment Scotland Technical Advice Note No 28: Fire Safety Management in Heritage Buildings can be found advice on the need to fire stop or compartment historic buildings which are being converted to new uses.



Royal Albion Hotel Brighton seven days after the fire of 2023 picture Wikimedia Commons

# "Many of the greatest death tolls in fires internationally have resulted from fires in hotels"

This is covered in great detail in Historic Environment Scotland's Guide for Practitioners Guide Number 6 which provides in-depth data on how traditional buildings can be converted to new uses in compliance with Scottish Building Standards. Guide Number 7 covers in some detail deficiencies in fire separation and how fire suppression systems can be retrofitted and makes it clear that, where the original structure may not comply with current standards, the sensitive introduction of (for example) fire sprinkler systems will compensate for deficiencies in compartmentation and separation and even means of escape.



The iconic, Palm Court Hotel Torquay on fire in 2010. Picture: Derek Harper

#### **Conclusions**

On 14 February 2025 in the mid-afternoon a fire broke out in the former Chiltern Street London Fire Brigade Station, now a five-star hotel and restaurant. 125 firefighters struggled to contain the fire and save the structure. Fortunately, no one was injured but the building has been seriously damaged and will remain closed for some time.

Consequentially, a valuable asset has suffered serious and extensive damage. A popular hotel and eating place is no longer earning revenue and employing people. A major function, the Netflix post BAFTA party had to be relocated, and local businesses have complained about the impact on their customer footfall.

One might ask whether anyone considered installing fire sprinklers in the building during its conversion. Damage to heritage fabric can hardly have been a reason for not doing this given the need for significant insertion of building services demanded in a modern hotel. Let us hope that fire suppression is included in the rebuild – as it has been at Cameron House.

- 1. Scotland does not hold Coroner's Inquests.
- 2. 1. S.26(1)b of the Inquiries into Fatal Accidents etc Act 2016 requires the sheriff to make such recommendations as they may consider appropriate in respect of necessary improvements and preventative measures.
- https://consult.gov.scot/local-government-and-communities/buildingstandards-fire-safety-cameron-house-hotel/





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# Hydrotech Fire & Mechanical Ltd High Rise Fire Protection Specialists New HydroSMART Product Range

#### Hydrotech Fire & Mechanical Ltd are proud to launch our new HydroSMART product range.

The HydroSMART products are specifically designed for the Residential Fire Sprinkler market, compliant with BS9251:2021. Our Residential Riser valves, LPCB approved flow switches and residential pumpsets have all been tested to ensure compatibility with the HydroSMART Inim Sprinkler monitoring system. HydroSMART, industry leading Residential Fire Sprinkler products.



NOW AVAILABLE to purchase through our distribution partners, please contact sales@hydrotechfire.co.uk or call 0161 413 6960 for further details.









# BAFSA keeps training top of the agenda

Ruth Oliver head of BAFSA's Training Centre and also our Skills & Qualifications advisor outlines the association's renewed commitment to Continuing Professional Development and the appproval of two new accredited learning programmes on the new BAFSA Training Centre

These last few months have seen further success in the Skills & Qualifications arena. After considerable development activity and submission to ABBE and subsequently OFQUAL (The Office of Qualifications and Examinations Regulation – a non-ministerial government department that regulates

qualifications, exams and tests in England. Colloquially and publicly, OFQUAL is often referred to as the exam "watchdog") BAFSA is pleased to announce the approval of a new qualification to be delivered via BAFSA Training Centre (www.bafsa.org.uk/bafsatraining-centre).



#### **ABBE Level 5 Diploma in System** Classification & Design of Pre-**Calculated Commercial Fire Sprinkler Systems**

This qualification will be delivered in two wavs:

- An experienced worker already within the industry can take the course which will entail a five-day online virtual classroom over one week, with post course work (designs) and an end of programme written exam to be completed within 12
- New entrants (new to the industry) can take the course which will entail 15 days online virtual classroom (one day per week over 15 consecutive weeks), with post course work (designs) and an end of programme written exam to be completed within 18 months.

The assessment and outcomes for both are the same. However, new entrants will have additional teaching included within the delivery of this qualification to ensure they are confident in meeting the learning outcomes and assessment for the qualification.

The content of the qualification will cover:

- **Understanding of Commercial Fire** Sprinkler Systems
- Classification of Commercial Fire Sprinkler Systems
- Design of Installations for Commercial Fire Sprinkler Systems
- Design of Water Supplies for Commercial Fire Sprinkler Systems
- Pumphouse Design

Assessment of the qualification will be via:

- Online electronic examination
- Set and marked classroom-based examinations under invigilated conditions
- Portfolio of evidence

#### New online learning programme with practical focus

BAFSA has also achieved CPD accreditationfor its new online programme: The Principles & Practices of Automatic Fire Sprinkler Systems.

This online programme consists of approximately 60 hours of online learning. Learners can work through the programme modules in their own time and at their own speed. Those who successfully reach the end of programme multiple choice test will be awarded a BAFSA endorsed CPD Certificate.

The programme is designed for those who may wish to build on the Awareness of Automatic Fire Sprinklers online CPD programme (available on our website) and for those professionals working on the periphery of the sector or those within construction related activities who wish to widen their knowledge and understanding. The programme is also available to those working within the fire sprinkler industry.

There are over 13 topics included within the programme including:

- Systems Key Functions & Facts
- System Components,
- Water Storage Tanks
- Installation Control Valves
- Sprinkler Heads

After course completion the learner will understand the workings of automatic sprinkler systems and understand the different types of systems and components.

#### **BAFSA** establishes CPD Committee

With the success of the two learning programmes the work of the Skills & Development Committee continues to ensure the sector workforce has the necessary skills and qualifications to embrace the opportunities and challenges within the industry.

Alongside qualifications, change in culture and behaviour, CPD is becoming more sought after and a new BAFSA CPD Committee has been established to support this area.

#### Why is CPD important?

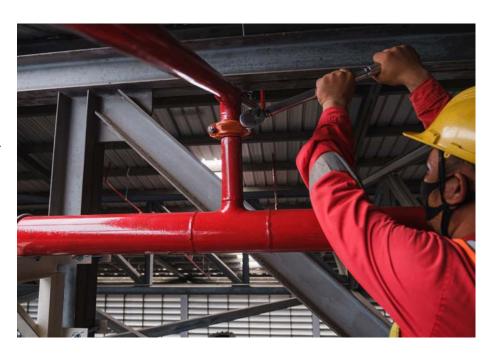
CPD is important; it helps you develop skills and knowledge, and in some cases can advance your career and may help you stay up-to-date with standards and regulations.



In addition, CPD can help you with developing confidence in your role, can help ensure you are practicing safely and legally and can demonstrate your commitment to your chosen career or profession.

The new CPD Committee will be working to define potential areas of CPD training programme development and the appropriate methodology for delivery and assessment. This will take time, it is not a subject that can be rushed or programmes developed without careful thought and, even more importantly, taking into account the various programmes and training opportunities that are currently offered by many of the members to their employees. Sharing good practice of programmes already in existence will be an essential part of discussion.

A new area of development to be commenced in the next month will be an online CPD programme for system owners and cccupiers covering the obligations that are placed on the owner or occupier of a building or structure which is fitted with a sprinkler system.



# Current BAFSA course list



- BAFSA Awareness in Automatic Fire Sprinkler Systems (CPD)
- BAFSA Principles & Practices of Automatic Fire Sprinkler Systems (CPD)
- ABBE Level 2 Certificate in Fire Sprinkler Installation (Residential)
- ABBE Level 2 Certificate in Fire Sprinkler Installation (Commercial)
- ABBE Level 2 Certificate in Fire Sprinkler Installation (Residential & Commercial)
- ABBE Level 3 Award in Inspection & Commissioning of Commercial Fire Sprinkler Systems
- ABBE Level 5 Diploma in System Classification & Design of Pre-Calculated Commercial Fire Sprinkler Systems
- BAFSA FHC Commercial Design (Refresher)



#### Taking training online

In September 2024 BAFSA established its own Training Centre which permitted delivery of the newly revised ABBE L2 Certificate in Fire Sprinkler Installation wholly online.

With over 80 enrolments since October 2024 this shorter, programme offering three pathways, residential, commercial, and residential and commercial installation is proving successful.

The development of a new BAFSA e-learning platform, providing an automated booking system, will take the success of the online delivery of the L2 qualification and over time provide

BAFSA the ability to deliver other qualifications and courses online.

Currently delivered in person and now under development is an online programme for the ABBE L3 Inspection & Commissioning of Commercial Fire Sprinkler programme along with a facility for an online exam. It is anticipated that these will be available by September 2025.

With eight courses available access to course information, course start dates, booking and enrolment is via the BAFSA Training Centre website (www.bafsa.org.uk).

#### About BAFSA's Skills & Development Committee

The Skills & Development Committee and The CPD Committee meet quarterly with a remit to develop opportunities for the workforce to evidence their competency.

If you wish to be involved within this important work and would like to join a committee please contact Ruth Oliver, Chair of the committees (qualifications@bafsa.or.g.uk)









#### It's really quite simple, fire sprinklers save lives.

- Sprinklers will protect your home 24/7 even when you're not there.
- Sprinklers are proven to be the quickest and most effective way to control or extinguish fires.
- When buildings are protected with correctly certified sprinkler systems, 99% of fires are controlled by the sprinkler.
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# Fire Sprinkler Systems: Report on Fire Incidents in Greater London (February–March 2025) by Nick Coleshill Sprinkler Saves UK

This report acknowledges the significant contribution of the London Fire Brigade (LFB) in promoting fire safety, particularly in relation to Automatic Fire Suppression Systems (AFSS). Their active support in reporting sprinkler activations is critical to raising awareness about the life-saving impact of sprinklers and other AFSS technologies. The report highlights key fire incidents from February and March 2025, extracted from the Incident Recording System (IRS), where sprinklers and other suppression systems played a role in containing, controlling, or extinguishing fires in Greater London.

The data showcases how fire sprinklers, as part of a broader fire safety strategy, mitigate the destructive effects of fire and help save lives, protect property, and assist firefighters during emergency operations. Through this report, we aim to increase awareness about the value of sprinklers and AFSS systems, which are crucial in improving fire safety in residential, commercial, and industrial settings.

The incidents covered in this report have been collated from the IRS for February and March 2025, focusing on cases where where sprinklers and other forms of suppression were reported as being present and effective. The aim is to illustrate the real-world impact of sprinklers and suppression systems in fire incidents, furthering the understanding of their effectiveness. Additionally, it supports ongoing efforts by the National Fire Chiefs Council (NFCC) and the National Fire Sprinkler Network (NFSN) to encourage fire services across the UK to collect and share data on AFSS performance.

#### The role of the incident recording system (IRS)

The IRS is a critical tool used by fire services to document the details of every fire incident they attend. The data is inputted by the Incident Commander (IC) and records vital information such as:

- Time and date of the call
- Location and type of building

#### **Key statistics**

incidents:
Fire extinguished by the activation of sprinklers

incidents:
Fire contained/controlled
by sprinklers

incident:
Fire controlled by a
drencher system

incident:
Sprinkler systems impact
not known

incidents:
Sprinkler system did not operate which was due to either

- Insufficient heat
- System not in the vicinity of fire

Further enquiries to be made to establish the facts with LFB for one incident recorded as not known.

- Cause of fire
- Fire spread and casualties
- Effectiveness of fire safety systems

A key component of the IRS is the fire fighting system type, which tracks the type, location, and performance of fire suppression systems like sprinklers, water mist systems, and drencher systems. This data is invaluable for evaluating the effectiveness of these systems in real-world scenarios.

#### Key Data on AFSS in the IRS:

- Type of system installed
- Location of the system in relation to the fire
- System's activation and impact
- Any failure or malfunction of the system

It's important to note that the quality of the data depends on the fire officers' experience, training, and thoroughness in recording details about the suppression systems involved.

#### Overview of incidents

Thirteen incidents were reported during February and March 2025 where AFSS were present and impacted the course of the fire. These incidents highlight both successes and challenges in the deployment of sprinkler and suppression systems.

incidents were reported during February and March 2025 where AFSS were present and impacted the course of the fire



All sprinkler activations can be reported by the FRS using the Sprinkler Saves sprinkler activation reporting form at www.sprinklersaves.co.uk





#### Case examples



1. Westminster (Bus/Coach Station) February 2025

#### LOCATION

Corridor/Hall

#### AFSS

Sprinklers

#### OUTCOME

Fire contained and controlled by one sprinkler head. Firefighters used a hose reel jet to extinguish the fire.



2. Westminster (Takeaway, Fast Food) February 2025

#### LOCATION

Kitchen

#### AFSS

Watermist

#### ОИТСОМЕ

Fire extinguished by water mist system, fire confined to the room of origin.



#### 3. Kensington and Chelsea (Converted Flat) February 2025

#### LOCATION

Kitchen

#### AFSS

**Sprinklers** 

#### ОИТСОМЕ

Fire extinguished by two sprinkler heads, contained within the flat. No further firefighting required.



4. Waltham Forest (House) February 2025

#### LOCATION

Kitchen

#### AFSS

Sprinklers

#### OUTCOME

Fire extinguished by one sprinkler head after a chip pan fire. Firefighters rescued two people.



#### 5. Southwark (Restaurant/Café) February 2025

#### LOCATION

Kitchen

#### AFSS

Sprinklers

#### ОИТСОМЕ

Fire extinguished by one sprinkler head, limited to 5m<sup>2</sup> of damage.



#### 6. Westminster (Public House) March 2025

#### LOCATION

Basement Kitchen

Drencher system

#### ОИТСОМЕ

Fire contained and controlled, the

kitchen and ducting were damaged. Note: Further enquires would have to be made with LFB regarding the IRS primary fire data recorded for this incident as a drencher system is designed primarily for exterior fire protection



#### 7. Newham (Purpose-Built Flats) March 2025

#### LOCATION

Living Room

#### AFSS

Sprinklers

#### OUTCOME

Fire extinguished by two sprinkler heads, fire contained to the room of origin.

#### Incidents where AFSS did not operate:

- Incident 1 (Croydon)
   Sprinkler system did not activate due to insufficient heat.
- Incident 2 (Southwark)
   Sprinkler system did not operate due to insufficient heat from a microwave fire.
- Incident 3 (Kensington & Chelsea)
   Sprinkler system did not activate due to insufficient heat from a dishwasher fire.
- Incident 4 (Hillingdon)
   Sprinkler system did not activate due to insufficient heat.

#### **Advice For Building Managers**

The following advice is intended for building managers and individuals who have responsibility for fire safety within a building. It is paramount that fire protection measures in buildings can function effectively in the event of a fire. Here are six steps to help achieve this:

- 1. Regular system maintenance to ensure operational readiness.
- 2. Comprehensive building fire plans that outline the locations and functions of suppression systems.
- 3. Reinstatement procedures to restore systems quickly after activation, minimising the risk of subsequent fires.

Recommendations for building managers:

- Routine Checks: Ensure regular maintenance of all fire safety measures, including sprinklers, to ensure they function during a fire.
- Emergency Response Plans: Maintain clear plans that include details on sprinkler locations, as well as evacuation and rescue procedures.
- System Reinstatement: After activation, ensure that sprinklers and other AFSS are promptly reinstated to guarantee continued protection.

#### Conclusion

The reported incidents demonstrate the critical role of sprinklers and other AFSS in controlling and extinguishing fires. These systems significantly reduce the risk to life, property and firefighters, proving that they are an essential part of the fire safety strategy in in the built environment of the United Kingdom, especially in high-rise residential developments. Moving forward, continuous reporting, monitoring, and improving the effectiveness of these systems will ensure they meet the growing demands of fire safety in urban environments.



#### Further reading and sources

Sprinkler Saves Review 2023/2024

Efficiency and Effectiveness of Sprinkler Systems in the United Kingdom: An Analysis from Fire Service Data

BAFSA Information File: A Guide for Responsible Persons and Duty Holders

The above documents are availabe from www.sprinklersaves.uk and the resources section of www.bafsa.org.uk

#### "These incidents highlight both successes and challenges in the deployment of sprinkler and suppression systems."



#### The London Fire Brigade (LFB)

The London Fire Brigade is one of the largest firefighting and community safety services in the world. It is responsible for protecting the lives and property of the over nine million residents in Greater London, alongside workers and visitors.

In 2023, the LFB attended 126,464 incidents, including 16,120 fires. The diversity of fire risks in London, from high-rise residential buildings to complex industrial and commercial structures, makes fire suppression systems essential, especially considering that approximately 50% of London's population lives in flats, a sharp contrast to the rest of the UK.





# Residential Sprinkler monitoring and compliance with BS9251:2021

#### Interview with Jonny Holt, General Manager at Hydrotech Fire and Mechanical

#### What is meant by Residential Sprinkler monitoring?

Residential Sprinkler monitoring is the continuous supervision of the main functions of the sprinkler system, i.e those whose failure might impair the correct automatic operation of the system in case of fire, and the raising of a supervisory alarm to allow corrective measures to be taken.

### Why is Residential Sprinkler monitoring important as part of a Residential Sprinkler system?

Residential Sprinkler monitoring ensures the responsible persons are made aware if the sprinkler system is not in full working condition and if there is a fire/sprinkler activation within a residential building. In addition, the Residential Sprinkler monitoring system should have a direct link to an alarm receiving centre (ARC). The alarm receiving centres (ARCs) are responsible for onward communication to the Fire & Rescue services, so they are notified and will attend.

#### What is the applicable British Standard for Residential Sprinkler systems?

BS9251:2021 is the British Standard and code of practice for Residential & Domestic Sprinkler systems. This includes design, installation, components, commissioning, service and maintenance.

#### How is Residential Sprinkler monitoring included within BS9251:2021?

Section 5.18 provides the details on requirements for Residential Sprinkler monitoring

Key content includes 'As sprinklers have a high level of reliability in fire situations, coupled with very few unwanted actuations, the sprinkler fire alarm needs to be treated as a confirmed fire signal'.

For clarity, a confirmed fire signal, means the Fire & Rescue Service will attend in the event of a fire.

In line with the above and also included is, 'to ensure an emergency response to a

sprinkler fire alarm, account needs to be given to clearly distinguishing a sprinkler initiated fire alarm from a signal generated by automatic fire detection.'

### What has been used previously in the High-Rise Residential market for monitoring purposes?

Alarm Detection panels have been used for many years, whilst being excellent products for use with Alarm Detection, they are often lacking standard Fire Sprinkler process management. Some of these offered are bespoke systems, which may not have been subject to 3rd party testing and certification.

### Why is there a need to clearly distinguish a sprinkler initiated fire alarm from a signal generated by automatic fire detection?

This is due to automatic fire detection signals now commonly being communicated to alarm receiving centres (ARCs) as unconfirmed signals, this is due to a large number of false alarms/Unwanted Fire Signals (UwFS) for the Fire & Rescue services. In many cases in response to an unconfirmed signal, the Fire & Rescue Services may not attend unless they receive a call to identify and confirm the presence of a fire. Therefore, sprinkler initiated fire alarms need to be clearly distinguished as confirmed fire signals, to ensure the Fire & Rescue Services do attend, as sprinklers have a high level of reliability in fire situations.

### How does a Residential Sprinkler monitoring system meet the BS9251:2021 standard?

Meets the BS9251:2021 standard by compliance with the below:-

- Section 5.18 provides the alarm receiving centres with a confirmed fire signal for a sprinkler fire alarm
- Section 5.18.1 supervised circuits covered for all devices that provide a fault signal or an alarm device signal
- Section 5.18.2 fault conditions in Table 5 all indicated at the panel and transmitted onwards



 Section 5.18.3 – water flow detectors conforming to BS EN 12259-5

## Does the HydroSMART Inim Residential Sprinkler & Fire Detection monitoring system meet the requirements of the relevant industry standards?

Yes HydroSMART Inim meets and exceeds BS9251:2021 for Residential Sprinkler monitoring. It exceeds BS9251:2021 with the remote monitoring information available via the Inim Cloudfire portal and Inim Fire app. It also exceeds by communicating three separate signals for fire, tamper and fault when used with the HydroSMART Residential riser valve & flow switch.

HydroSMART Inim is also fully compliant with the EN54 series, applicable to Fire Detection and Fire Alarm systems.

### What were the key factors in your motivation for launching the HydroSMART Inim product?

The sprinkler industry has by it's own admission lacked innovation using technology for many years. From extensive market research we identified gaps in the market. We embraced new technology, with a focus on compliance with industry standards. We also used feedback directly from installers in the design of the HydroSMART products.

#### What are some of the key features of the **HydroSMART Inim product?**

- Inim Cloudfire portal & Inim Fire app for remote monitoring
- Push notifications and graphics maps
- Digital log of information available, allowing full traceability and compliance with the Building Safety Act 2022 / Golden Thread
- Labour cost and time saving when installed with the HydroSMART Residential Riser valves & flow switches

#### What is a Residential Riser valve and how is it used in a Residential Sprinkler System?

A Residential Riser valve is used to control, test and monitor the pressure and flow of water in a Residential Sprinkler System.

#### How does a Residential Riser valve set conform to BS9251:2021?

BS9251:2021 states that 'except for category 1 systems, all valves which control the flow of water to the system should be electrically monitored for the open position'. In addition, it states that they should be lockable and locked in the open position to prevent accidental or deliberate interruption to the water supply. With regards to the flow switches, the standard includes 'water flow detectors conforming to BS EN 12259-5' should be used, which means they are required to gain 3rd party testing certification.

#### How have you achieved compliance with BS9251:2021 with the HydroSMART Residential Riser valve & flow switches?

The HydroSMART Residential Riser valve includes an upgraded cast for all sizes, with less joints to minimise leak paths. A key feature is a robust and durable magnetised reed switch for the lockable inlet ball valve monitoring. The valve set also offers integrated monitoring with use of the HydroSMART flow switch. These have achieved LPCB approval conforming to BS EN 12259-5. Uniquely, we have integrated monitoring within the flow switch to transmit the signals required. For the Inim compatible flow switch, this patent pending product includes an integrated Input/Output module. This significantly reduces the amount of cabling required, and therefore reduces labour cost and installation time on site. We have also introduced a HydroSMART testing component, where you can dry test the flow switch signal before pressurising the system with water, this will ensure the cabling is all correctly installed.

#### What 3rd party testing certification is available and applicable to Residential Monitoring systems and has HydroSMART Inim achieved these?

Yes it is. See details below:-

- HydroSMART Inim Panel EN54-2 Control and Indicating Equipment / EN54-4 Power supply units / EN54-21 Alarm transmission and fault warning routing equipment / EN12094-1 Components for gas extinguishing systems - electrical automatic control and delay devices / EN54-13 Compatibility of system components / UL-EU listed
- HydroSMART Inim EU311 I/O module LPCB approved & UL-EU listed
- HydroSMART Residential flow switch -LPCB approved

#### The Building Safety Act introduced in 2022 has moved to drastically improve standards in the construction industry, can you give us a brief overview?

The Building Safety Act 2022 is the most significant change to building and fire safety regulation in a generation. The Act is challenging how all in the construction industry must operate, from clients, principal designers, manufacturers, main contractors to operatives working on site.

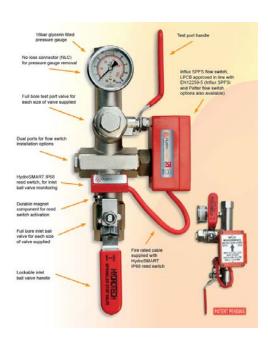
The competence of the workforce is at the heart of the Act, it defines competence as having the appropriate skills, knowledge, experience, and behaviours (SKEB) and places a legal duty on companies and individuals carrying out construction work to be competent for their roles.

#### What is the Golden Thread and how can HydroSMART products help fulfil this legal requirement?

The Golden Thread requires a digital record of information about a building, if they are a higher-risk or high-rise residential building. Residential Sprinkler monitoring systems can fulfil this regulatory requirement. HydroSMART Inim provides a digital log of all system events, which can be downloaded at any point and used to submit to as proof that the sprinkler system is in full working condition.

#### Ensuring competence is a key message within the Building Safety Act 2022, how will you ensure competence for HydroSMART Inim in the market?

In the provision of training to ensure competence of installers, including best practice for installation and commissioning in accordance with the relevant standards.



We will also regulate who is provided with training, to ensure that training is only provided to companies with 3rd party accreditation in place.

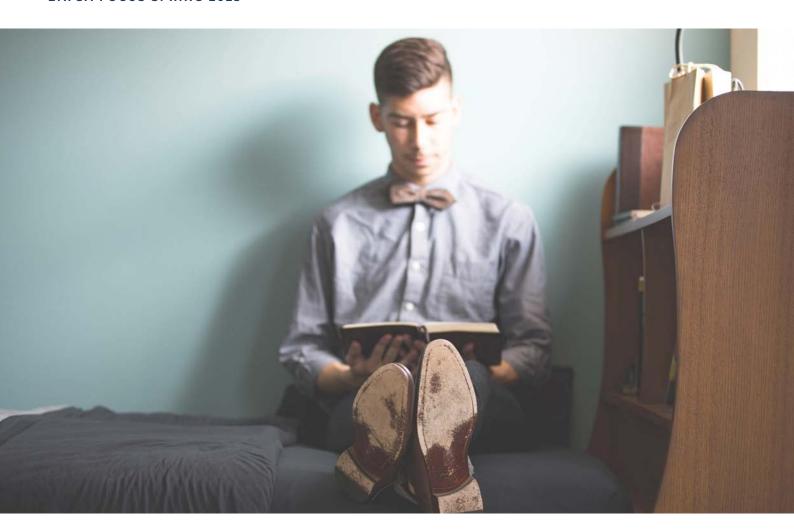
#### What training is available for installers and how accessible is this?

Engineer training is available for all installers at the Inim Training Centre in Aldridge, West Midlands. These sessions are interactive with live demonstration systems and include full programming guidance. We also provide CPDs and introductory sessions to all interested parties within the Residential sector, these have proved hugely popular.

#### Who should people contact if they would like further information or have enquiries regarding HydroSMART Residential Sprinkler products and training?

E: sales@hydrotechfire.co.uk T: 0161-413-6960

> Jonny Holt is the General Manager of Hydrotech Fire & Mechanical and also a member of BAFSA and BSI technical committees. Hydrotech are a leading supplier of High-Rise Fire Protection products, including Dry & Wet Riser and Residential Sprinkler products.



# Sprinklers in student accomodation

In light of a change in legislation for sprinklers in buildings over 11 metres in height in Northern Ireland, Nick Coleshill explains why he believes sprinklers in student accommodation should become mandatory in England.

In 2019 a fire broke out in Bolton at a student accomodation block called The Cube. The Incident¹ report completed by Greater Manchester Fire and Rescue Service referenced the fire at The Cube spreading rapidly and posing a real risk to residents' safety. Two residents were trapped in their flats by fire, heat and smoke. One was pulled from a sixth-floor window by a firefighter on a high reach aerial platform while the second was assisted by firefighters to

escape from a second-floor window using ladders. It was reported that some students didn't start evacuating in response to the fire alarm sounding because they had grown accustomed to regular false alarms going off almost daily. Thankfully on this occasion there were no fatalities but the incident highlighted the current failings of the building regulations. At the time of the fire the mandatory threshold height for the installation of sprinklers was for purpose

group 1a (Residential block of flats), high rise buildings with a top storey more than 30 metres above ground level, which did not include other types of buildings providing sleeping accommodation such as student accommodation.

In September 2019, The Ministry of Housing Communities & Local Government launched a consultation "Sprinklers and Other Fire Safety Measures in New High-Rise Block of Flats" proposing a reduction of the

2018/19	2019/20	2020/21	2021/22	2022/23	Total Incidents
5	2	2	6	14	29

Table 1: FOI request 2018/19 to 2022/23 for England, Scotland and Wales, primary fires attended by FRS in which sprinklers were reported as present, having an impact within student halls

30-metre height threshold for the installation of fire sprinklers. This was one of a series of consultations launched by the Government following the post-Grenfell Hackitt Review of building regulations and fire safety.

In response to the consultation<sup>2</sup> the Government announced the mandatory installation of sprinklers in new high residential buildings with a top floor of 30m above ground level to 11m, something we and the fire sector have consistently called for and which is much welcomed.

Despite the lowering of the threshold, it remains a concern that this decision does still not include other types of buildings such as student accommodation, hostels and hotels or buildings housing vulnerable residents such as hospitals, sheltered accommodation or retrofitting existing residential buildings with sprinklers.

The demographic change in the specialised and supported housing population has resulted in an increase in the occurrence of mobility difficulties, reduced sensory capability and cognitive difficulties, all of which bring greater risk from fire, in terms of the likelihood of fire and vulnerability in the event of a fire.

England's national building and fire safety regulations still trail behind its neighbours. Governments in other UK jurisdictions have set lower mandatory thresholds for the installation of sprinklers in new purpose-built student accommodation. For example, following the introduction of new fire regulations in Northern Ireland, fire sprinklers are now required for student accommodation with a storey more than 11m above ground level.

The Government should be looking to emulate the policies in the devolved governments to support unitary policy across nations by lowering or removing the acceptable height, floor area, or occupancy threshold dependent on building type.

Student accommodation Is undoubtedly a challenging environment from a fire safety perspective. University life brings independence and social opportunities as well as the academic challenges. But unfortunately it also it brings with it a lifestyle typically associated with a reduced level of caution when it comes to appreciating risk or identifying the importance of fire safety.

Fire start location	Grand Totals	
Kitchen	17	
Bedroom/Bedsitting room	8	
Bathroom/ Toilet	2	
Boiler room/Powerhouse/plant/generator	1	
External fittings and structure	1	
Grand Total	29	

Table 2: fire start location in which sprinklers were reported after reported add in brackets (FOI request 2018/19 to 2022/23 for England, Scotland and Wales)

"London Fire Brigade have reported that over the past five years London firefighters have attended more than 1,200 cooking-related fires and false alarms in university students halls involving kitchens"

#### Other student accomodation fires

In February 2025, Dorset Fire & Rescue Service reported a student accommodation kitchen fire involving an air fryer in Bournemouth. Thankfully the building was sprinkler protected and extinguished the fire. The fire was caused by the resident setting the air fryer alight after seeing a cleaning hack they saw on TikTok.

Figures are not available to confirm the number of fire sprinkler installations completed for student accommodation, or currently being undertaken across the country. However, data on fire incidents allows us to capture where sprinklers are reported and if they have activated. This provides a means to looking at the trend of sprinkler incidents and by extension capturing a picture of presence of sprinkler installations in buildings.

Following a freedom of information request for incident recording system data relating to data relating to primary fires attended by FRSs in which sprinklers were present for England, Scotland and Wales for the financial years 20198/19 to 2022/23, 29

incidents were captured involving student halls of residence or communal living.

Unsurprisingly the low figures reflect current government guidance that sprinklers are not required in student accommodation. Only three incidents were reported in Scotland with the remaining 26 incidents located in England.

Kitchen fires accounted for the highest number of fire incidents with 17 where sprinklers are reported as being present followed by bedroom/bedsitting fires with eight.

This data supports the findings of the<sup>4</sup> London Fire Brigade who reported that over the past five years London firefighters have attended more than 1,200 cooking-related fires and false alarms in university students halls involving kitchens. People living in rented or shared accommodation are<sup>8</sup> seven times more likely to have a fire involving unattended cooking. From the 29 reported incidents, 17 incidents were reported where sprinklers were recorded as operated having an impact.

Kitchen fires accounted for the highest number of incidents, extinguishing six fires

	Fire start location	Extinguished	Contained/ controlled	Did not contain/ controlled	Not known	Activations
	Kitchen	6	2	1	1	10
	Bedroom/ Bedsitting room	6	0	0	0	6
	Bathroom/toilet	0	1	0	0	1
	Grand Total	12	3	1	1	17

Table 3: FOI request 2018/19 to 2022/23 for England, Scotland and Wales, where sprinklers have operated by fire start location within student halls

bafsa

with a further two incidents containing controlling the fire. Further interrogation of the data would have to be completed for the remaining two incidents where the fire was not contained, controlled or not known.

It is refreshing to see that universities are identifying the benefits of sprinklers for life safety for their property portfolio. The University of Nottingham for example have published a Fire Safety,<sup>5</sup> Fire Sprinkler policy identifying that sprinklers should be installed in all university buildings meeting a certain criteria:

- All new sleeping accommodation
- Refurbishment of halls of residence

It is interesting that reference is made to the benefit sprinklers can have for property insurance policy premiums, making insurers more willing to accept the risk where sprinklers are fitted.

#### Communal kitchen fire

Within the last 12 months Nottinghamshire Fire Rescue Service have reported four sprinkler activations, three of which involved student accommodation. On each occasion the fire was either contained, controlled or extinguished by the sprinkler system.

The latest incident involved a communal kitchen fire involving an electric air fryer which caught light and was extinguished by the activation of two sprinkler heads before the arrival of firefighters. Fire damage was contained to the compartment of origin — the air fryer, kitchen worktop, cupboards with smoke staining reported. The occupants self-evacuated with one casualty treated on the scene for smoke inhalation.

When comparing this incident to a similar air fryer kitchen fire in Weymouth in December 2024 where the premises was not sprinkler protected, the difference is startling, the kitchen was severely damaged by the fire.



Weymouth kitchen

Credit Dorset & Wiltshire FRS



Nottinghamshire student kitchen fire

Credit Nationwide Sprinkler Ltd

The Cube fire was a near miss. Will it take another Grenfell Fire, this time involving student accommodation for the Government to act, making the installation of sprinklers mandatory for student accommodation and buildings housing vulnerable residents such as hospitals, sheltered accommodation? For change, we need the evidence — if you hear of a sprinkler activation report it.

#### References:

- 1 The GMFRS Cube Incident Report
- 2 Government response: Sprinklers and Other Fire Safety Measures in New High Rise Blocks of Flats
- 3 NFCC Automatic Water Suppression Systems Policy Statement
- 4 LFB Over 1200 cooking related fires and false alarms in London university student halls
- 5 Fire Sprinkler policy, The University of Nottingham
- 6 Nottinghamshire Student Accommodation saved by sprinkler activation
- 7 Sprinkler Saves Uk
- 8 Merseyside FRS Student fire safety

#### **Driving change**

It is the view of the British Automatic Fire Sprinkler Association and the National Fire Chiefs Council<sup>3</sup> that sprinklers should be installed in all new student accommodation regardless of height, as well as existing buildings undergoing refurbishment.

To drive change, we need the evidence to support our ongoing campaign lobbying government for more buildings to have sprinklers. We have achieved notable success in the sector.

- Reducing the height threshold of sprinklers in residential block of flats from 30m to 11m
- Sprinklers becoming mandatory in all new care homes irrespective of height

But we still have a long way to go influencing policy makers to review this anomaly. One tool which helps us to achieve this goal is Sprinkler Saves UK7, a designated website working in collaboration with the NFCC where we encourage Fire & Rescue Services and our sprinkler colleagues across the UK to report real life tangible examples of where sprinklers have actuated and in doing so saved life and property from fire promoting the benefits of sprinklers as part of a package of fire measures proving a further layer of safety from fire for our communities.

For change, we need the evidence – if you hear of a sprinkler activation report it.
Email nick.coleshill@bafsa.org.uk



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