British Automatic Fire Sprinkler Association

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INFORMATION FILE

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Sprinklers in Schools

The Covid-19 pandemic of 2020 has brought into sharp focus the problem which enforced school absences, with teachers, politicians and parents expressing grave concern over missed educational opportunities for pupils. This concern is well founded, there is a distinct correlation between missed academic sessions and attainment. The Department for Education (2016)[1] report that there is a statistically significant negative link between absence and educational attainment at key stages 2 and 4, stating "…every extra day missed was associated with a lower attainment outcome"

Clearly there are also other issues arising from absence at school with concerns being expressed around children's mental health, emotional wellbeing and welfare which led to school places being provided throughout the closures for children identified as being vulnerable. Wade et al (2007)[2] report that, in addition to the direct and indirect economic impact of school fires, there is a significant emotional, social and educational detriment to children following large loss, school fires. The impact on children's education is not just based on lost course work, but often includes longer travelling times, disrupted social groups and poorer facilities due to overcrowding.

THE SCALE OF THE PROBLEM

On average there are 935 primary fires in mainland UK schools per year.

The most recent Government figures for the overall costs of school fires are from 2004 when the cost of school fires was £52 million. It is clear that this figure will have increased significantly in the intervening 16 years. Zurich Municipal[3] estimate that larger school fires cost on average £2.8 million each.

A single fire at Temple Grove Primary school resulted in Lakehouse PLC paying Lewisham Borough Council and Haberdashers Askes Federation Trust £8.75m in December 2017 to cover costs, interest and damages caused by the fire.[4]

These costs, as alarming as they are represent direct costs only. When the indirect costs such as uninsured and social costs are taken into account e.g. loss of coursework, teaching aids, community facilities etc, the true cost is far higher.

London Fire Brigade (LFB) figures show there were 759 fires in London schools between 2009 and July 2017 and sprinklers were only installed in 15 of these cases.

School buildings also play host to community clubs and groups thus school fires have a devastating impact on the communities which those schools serve, along with the environment and the disruption to students, teachers, and families.

Regardless of what criteria is used to assess the impact, it is the enforced absence from school which is the issue not the cause of that absence, which begs the question "if measures can be taken to address absences and absenteeism from all other causes, why is more not being done to reduce the impact of fires in schools?"

DIFFERENT NATIONAL STANDARDS ACROSS THE UK

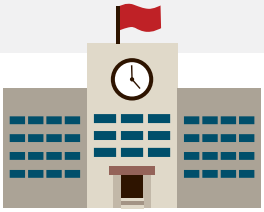
Despite a growing acceptance amongst the public, and some politicians, of the value of sprinklers the problem of sprinklers not being fitted in new schools appears to be getting worse in some parts of the UK.

Within the nations of the UK there are different governmental approaches to the fitting of sprinklers in schools. Whilst the English government takes an almost "laissez faire" approach to this vital topic the devolved administrations in Scotland and Wales take a firmer stance.

In Scotland and Wales sprinklers are mandatory in all new and substantially refurbished schools.

In 2017 LFB recommended sprinklers in 184 London schools being built or refurbished. If these schools had been built in Scotland or Wales they would automatically benefit from sprinkler protection.

The reason behind this disparity can be found in the confused approach taken by the Education and Skills Funding Agency (EFSA) to fire safety in schools.



935

PRIMARY FIRES IN MAINLAND UK SCHOOLS PER YEAR

£52m

COST OF FIRES IN SCHOOLS

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If the potential developer or local education authority were to search the internet for guidance on fire safety in new schools, they may find the advice below provided by the EFSA:[5]

1. NEW BUILDINGS

Building work at all schools must comply with the building regulations enforced by local building-control bodies. Building Bulletin 100: design for fire safety in schools.

1.1 Who do the regulations apply to?

The regulations apply to nursery schools, primary and secondary schools, academies, free schools, special schools and pupil referral units.

It is clear that if there are building works to be carried out or if a new school is to be constructed the expectation of the EFSA is that the designer follows the guidance contained in BB100.

BB100 would, for all schools other than a very few low risk schools, call for sprinklers in new schools.

Whilst this appears straightforward and gives a clear steer regarding the provision of sprinklers in new build schools, it is not the only advice provided by the EFSA.

The baseline designs for schools[6] also provided by the EFSA offers a suite of design guidance (the baseline designs) and exemplar descriptions and drawings of various baseline designs for primary and secondary schools.

The baseline fire safety strategy document provided by the EFSA is explicit in stating: "It is therefore possible to comply with Regulations without sprinkler or smoke extract systems."

The inconsistency demonstrated via this confused approach leaves a clear loophole for any parties seeking to save money on a school building project to take advantage of - and it is precisely this which is leading to the continuing trend in England to build new schools without sprinklers.

FREE SCHOOLS AND ACADEMIES

If the situation regarding existing and new purpose built school buildings is alarming, the situation is only exacerbated by the utilisation of non-educational buildings to provide academies

In January 2019, nearly 3.8 million pupils attended academies and free schools in England. This means 72.3% of secondary pupils and 29.7% of primary pupils attended academies and free schools.

Whilst many of the academies will have been schools previously, free schools have been opened in former hospitals, office buildings, job centres, church halls and other types of buildings. The suitability of these buildings is assessed by Ofsted but there is no requirement for sprinklers to be fitted.

Notably, an Ofsted inspector carrying out an inspection of a proposed academy in a former office building in Digbeth was trapped when a fire broke out during the inspection. The report states

"The fire doors, which should allow easy escape, were either locked with a padlock, tied up with electrical cable from the inside and boarded up from the outside, or could not be opened easily,"[7]

The proposed academy was intended to provide educational facilities for up to 70 vulnerable children.

WOULD SPRINKLERS MAKE A DIFFERENCE?

A 2017 report[8] commissioned by the National Fire Chiefs Council (NFCC) and the National Fire Sprinkler Network (NFSN) it was found that sprinkler systems correctly operated on at least 94 per cent of the fires and controlled or extinguished 99 per cent of those fires.

Whilst specific data for educational premises is not provided, the average area of fire damage in a non-residential building where a sprinkler system was present was 30 sq. m. which is half the average area of fire damage of in comparable "other building" fires. It is clear that such greatly reduced fire damage translates to hugely reduced repair costs and far less disruption for students and communities.

The report also provides a striking example of a fire in an occupied school. "An electric heat lamp in the animal care classroom of a Newcastle school malfunctioned causing a fire with over 200 people on-site. One sprinkler head activated which confined the damage to the room of origin and extinguished the fire.

A number of small animals were in the room involved and all survived whilst no other areas of the school were affected.

Damage was limited to a wooden bench and minor smoke damage amounting to less than 1% of the whole building.

Damage was repaired quickly.

For a new £10 million primary school close to Glasgow, the installation of an automatic sprinkler system will protect both the occupants and the building as well as significantly reduce the potential disruption to the students' school life in a fire event.

1 Department for Education. The Link between missed education and attainment 2016 London; Crown

2 Wade P, Teeman,D., Golden, S., Wilson, R., and Woodley V. (2007). The impact of School Fires; a study of the wider economic and social impacts on schools and the local community. Slough; NFER

3 Two thirds of schools in England poorly managed for fire protection https://newsandviews.zurich.co.uk/news/two-thirds-of-schools-in-england-poorly-managed-for-fire-protection/

4 https://www.constructionnews.co.uk/news/contractors-news/lakehouse-agreed-to-pay-8-75m-after-school-fire-26-03-2018/?search=https%3a%2f%2f www.constructionnews.co.uk%2fsearcharticles%3fqsearch%3d1%26keywords%3dlakehouse+agreed+to+pay+%c2%a38.75m+after+school+fire

5 https://www.gov.uk/guidance/fire-safety-in-new-and-existing-school-buildings

6 https://www.gov.uk/government/publications/psbp-baseline-designs

7 https://www.birminghammail.co.uk/news/midlands-news/ofsted-inspector-trapped-fire-during-17599975

8 Efficiency and Effectiveness of Sprinkler Systems in the United Kingdom: An Analysis from Fire Service Data, May 2017, Optimal Economics

If you have a question or seek advice regarding automatic water-based fire suppression systems, please email the team : ian.gough@bafsa.org.uk or joe.mcafferty@bafsa.org.uk. If they do not have an answer for you, they will know someone who has! FAQs can be found at bafsa.org.uk/sprinkler-systems/faqs/

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