

# Why schools need sprinklers

THE VULNERABILITY OF schools to fire damage is apparent, here the British Automatic Fire Sprinkler Association (BAFSA) explains how sprinklers can minimise not just the building devastation but also the human suffering that a fire can inflict.

Imagine what it feels like to lose everything you have been striving for because a fire in your school has destroyed your course work, your art, your pets, your memories... And then to discover that it could all have been protected if automatic fire sprinklers had been present. The confusion and emotional distress can be unfathomable for the most vulnerable in our communities.

Burnt out schools and classrooms cause major disruption to children's education, with repairs leading to months or even years of upheaval. The DoE recognises that every school day missed is associated with a lower attainment outcome. School buildings also play host to community clubs and groups thus school fires have a devastating impact on entire communities that those schools serve, students, teachers, and families along with the environment.

A fire in a school initially puts Firefighters lives at risk as they try to mitigate the damage to the property and invariably school fires are spectacular and require large numbers of firefighting resources and water supplies.

In many cases where a school fire has occurred, the building is unusable for many months and sometimes years, there is then a need for temporary accommodation



for the school staff and pupils. This can be well outside the area of its normal catchment area requiring transport for pupils to attend. There is also the loss of precious resources, much of which will have been built up over many years and in some cases irreplaceable together with the teachers and pupils own materials, which may be required for future assessments.

Many schools have units dedicated to pupils with special needs both physical and mental, the requirements for these pupils are not easy to accommodate elsewhere both in terms of travel, special equipment and special access requirements.

The fitting of automatic fire sprinklers by Third Party certified installers using approved components in schools will ensure that fires are controlled or extinguished in their early stages and prevent large scale losses of buildings, educational materials, teaching time and disruption for teachers, pupils and parents. Automatic fire sprinklers save lives of Firefighters and the public and also protect the valuable building stock of the country.

According to recent Home Office figures there have been 2,300 fires in educational establishments over the past five years, destroying 47 primary and secondary school buildings and seriously damaged 230 others. The impact of these fires both financially and in terms of disruption to students, teachers, families and the community can be devastating. Zurich Municipal estimates the average repair bill for large fires alone is £2.9m, with some fires costing up to £20m. Over the past four years an average of 24 of these large-loss fires have occurred every year, totalling £67.2 million.

Based on an extensive analysis of the latest Home Office figures, Zurich Municipal now estimates 390,000 teaching hours could be lost in the next year as a result of large fires alone, causing disruption for 28,000 children who may already be struggling to catch up following school closures.

Currently, sprinklers are mandatory in new school buildings in Scotland and Wales, but not in England and Northern Ireland. The government is currently reviewing Building Bulletin 100 (BB100) and the BSA wants

## A tale of two schools

Sunday 25th August 2019 was a day that will remain in the memory of many people in Dunfermline and have a lasting effect on them and their families.

At 1705hrs Scottish Fire and Rescue were called to a fire in Woodmill Secondary School in Dunfermline, the rapidly spreading fire would require the attendance of fifteen fire appliances to bring it under control. There was significant damage to the building which required the relocation of 1400 pupils to other schools and temporary accommodation.

The school also housed a Department of Additional Needs, this unit was absolutely essential for pupils with special needs both physical and mental, the requirements for these pupils were not so easy to accommodate elsewhere both in terms of travel, special equipment and special access requirements.

The local council also highlighted an additional accommodation problem, there had recently been a lot of new built housing in Dunfermline, and this had impacted on the ability of the nearby schools to accommodate the 1400 displaced pupils.

Within nine days Fife Council announced plans to build a new £150m educational campus to replace Woodmill and two other facilities, sadly the new campus will not be ready until 2024.

As is often the case with school fires, the damage is more than just structural, the trauma for pupils and teachers can be extensive, and the loss of materials and memories are irreplaceable together with the social networks, which are broken due to relocation in different areas.

Following the fire, a fourteen-year-old boy was charged with wilful fire raising.

Since 2010 all new built Scottish schools are required to have automatic fire sprinklers fitted, unfortunately Woodmill was built long before this standard was mandatory.

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.

St Nicholas' Primary School has been delivered in partnership with hub West Scotland and East Dunbartonshire Council. The new School in Bearsden has enabled the co-location of two



former schools, St Andrews Primary School and St Joseph's Primary School. Designed for 450 students, the 3008m2 building includes 17 flexible and open classrooms, a 316m2 hall, outdoor learning areas as well as play areas and a 3G synthetic pitch. The new school was designed and constructed by hub West Scotland Supply Chain members Holmes Miller Architects and Morgan Sindall Construction.

The design of this exemplar school has seen fire sprinklers installed throughout the two-storey building, in-line with Scottish Building Standards for non-domestic buildings. The building is protected by a total of 409 sprinkler heads, with the exception of the plant, boiler and biomass rooms, which feature early detection systems. The sprinklers are concealed in ceiling voids and the entire system is fed by a water storage tank and electric fire pump located in the school's service yard. Designed to meet the Ordinary Hazard Group 1 (OH1) classification within BS 12845:2004, the sprinkler system has a discharge density of 5mm/min/m2 over a maximum area of operation of 72m2 for 30 minutes duration.

The automatic sprinkler system will protect this school, both in terms of life and also property. By preventing large fires, sprinklers also protect the environment by avoiding CO2 emissions, reducing excess water use by the fire brigade and eliminating water supply contamination. In the event of a fire, many schools with sprinkler systems find they are back up-and-running in a matter of hours, so the sprinkler system will maintain the school's continuity and allow students to return to normality far more rapidly and with considerably less disruption to teachers' already hectic schedules. Schools are also vitally important to the community for events, meetings and activities. These can also continue with minimal interruption.

Thank you to the Business Sprinkler Alliance (BSA) for the St Nicholas school case study.



the government to explicitly maintain and enhance the "sprinkler expectation" in the revised BB100 so that fewer schools are damaged and destroyed by fire. Better still, the Government should make property protection a consideration for the fire safety Building Regulations in order to effectively protect all buildings of significant social and/or economic value from fire.

BAFSA, along with Zurich Municipal, the National Fire Chiefs Council and the Chartered Institute of Building and several other organisations, is calling on the

Government to require the installation of automatic fire sprinklers in all new built and substantially refurbished schools in England and Northern Ireland. We hope you will add your voice to this vital campaign.

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