Fire Protection Association
Fire and Risk Services

RISCAuthority

Education
risk review report

Business Sector Risk Review Reports are created for each and every occupancy category held within the FPA/ RISCAuthority Large Loss Fire database where sufficient records exist for meaningful analysis and are updated annually. They are designed to highlight the loss history in each business sector to help inform insurance and risk control choices, and provide brief bespoke best-practice guidance.

This data is best appreciated in association with local information on F&RS response, AFA policy, and firefighting water availability data which is available to RISCAuthority members via the website (www.RISCAuthority.co.uk). The data presented here spans the two years January 2012 to December 2013; the complete database and analytical tools may be accessed by members via the RISCAuthority website.

Secondary School

Sub category

Education fires account for **3.6%** of all large loss fires.
Fires involving **Secondary School** account for **0.7%** of all large loss fires and **19.8%** of all **Education** fires.

Causation	Accidental	Deliberate	Unknown
Education	45%	32%	22%
Secondary School	35%	45%	20%

Time of fire	Midnight - 6am	6am - midday	Midday - 6pm	6pm - midnight
Education	25%	18%	29%	28%
Secondary School	38%	31%	25%	6%

Impedances	Access	Acetylene	Inadequate water supply	Resources
Education	64%		27%	9%
Secondary School	100%			

11 Education fires of **101** had impedances, **0** of these had more than one impedance.
3 Secondary School fires of **20** had impedances, **0** of these had more than one impedance.

Cost of fire

Education fires account for **6%** of all large loss financial loss, with a mean average cost of **£1,255,998** per fire.
Secondary School fires account for **31%** of all **Education** loss, with a mean average cost of **£2,087,501** per fire.

Insurance component	Material damage	Business interruption	Contents	Resources	Machine and plant	Stock	Other
Education	70%	13%	12%	0%	0%	0%	6%
Secondary School	68%	16%	14%			0%	1%

These statistics are based upon information supplied by loss adjusters to the FPA on a voluntary basis and not all insurers conducting business in the UK contribute to this dataset. They represent only sums paid out where the total loss is in excess of £100K and are deficient of losses under £100K, deductibles, under-insurance, uninsured, self-insured and captively insured components, which may be significant. In a year, total losses captured typically account for 50% of the ABI declared annual fire loss figure - which is similarly deficient of the same components (except the £100K threshold).

THE UK's NATIONAL FIRE SAFETY ORGANISATION
Protecting people, property, business and the environment

FPA BUSINESS SECTOR RISK REVIEW REPORT FOR SECONDARY SCHOOL PREMISES

Fire safety legislation

In common with many businesses, a fire risk assessment should be undertaken for all areas of secondary schools in compliance with the Regulatory Reform (Fire Safety) Regulations 2005 (or equivalent legislation in Scotland and Northern Ireland). In some areas (for example science laboratories) an assessment may also need to be undertaken in accordance with the Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR).

Fire hazards

In many secondary schools there are large quantities of paper, books, combustible PE mats and similar materials that together present a high fire load. This results in many fires in these premises becoming large and costly conflagrations. Other hazards include:

- Vulnerability of the building to intruders who light fires in an attempt to destroy evidence of theft.
- Easy access and opportunities to deliberately ignite combustible waste and other materials.
- Open flames in science laboratories.
- Hot work and the use of hand tools by maintenance staff and contractors.
- Heating processes for arts and crafts, employing ovens, furnaces and kilns.
- Explosions occurring as a result of the release of flammable gases or vapours.
- Electrical hazards from poorly maintained installations or electrical equipment.
- The unsupervised use of school premises for local community activities outside of school hours.
- Cooking in canteen kitchens.
- Unauthorised experiments and playground activities that result in accidental fires.
- Illicit smoking of cigarettes.

Risk control recommendations

The following risk mitigation measures should be considered to eliminate or reduce the risk of fire in secondary schools:

- Ensure that an arson risk assessment is carried out as part of the fire risk assessment undertaken in compliance with fire safety legislation. Like the fire risk assessment, the arson risk assessment should be reviewed periodically.
- Review security arrangements periodically, particularly if fires (even small fires) are deliberately started in the neighbourhood.
- Train staff in the selection and use of the firefighting equipment that is provided, especially where laboratory work involves the use of open flames.
- Eliminate hot work (including burning off of paint when redecorating) being carried out by maintenance staff and contractors wherever possible. When such work is necessary, a hot work permit system should be in use.
- Train staff using ovens, kilns and similar facilities in their correct use and to work within the parameters set out in the school's operating procedures.

- Only introduce into the teaching areas the volumes of flammable liquids that are necessary for the work period. Bulk supplies of flammable liquids should be stored securely in a purpose-designed facility, preferably outside the building. Staff should be trained in the actions to take in the event of a spillage of flammable liquid.
- Store all gas cylinders in prominently signed facilities designed for this purpose.
- Engage a competent electrician to inspect the installed electrical wiring in accordance with the requirements of BS 7671 at periods as determined by a fire risk assessment, with the results being recorded.
- Carry out in-service inspection and testing of portable electrical equipment ('PAT testing') at periods in accordance with HS(G)107 and the IET *Code of practice for in-service inspection and testing of electrical equipment*, or more frequently as determined by a risk assessment.
- Provide clear fire safety guidance for people in charge of community groups using the premises outside of school hours.
- Provide training to kitchen staff in the emergency shutting down of cooking facilities, the operation of fixed fire suppression systems and other actions to take in the event of a fire.
- Ensure that appropriate passive fire protection measures are in place to minimise the risk of fire spreading between compartments within the building, from the building to adjacent premises, or vice versa. This is particularly important in some designs of school built in the 1960s and 1970s. School laboratories and kitchens should be located independently in separate fire compartments.
- Protect the premises by installing an automatic fire detection and alarm system, designed to an appropriate category as defined in BS 5839-1, which is monitored by an alarm receiving centre when the premises is unoccupied.
- Give serious consideration to installing an automatic sprinkler system designed in accordance with BS EN 12845 in all parts of the school to control a fire until the arrival of the fire and rescue service. Suitable fixed fire suppression systems should also be installed to protect deep fat fryers, grills and similar kitchen equipment.
- Liaise with the local fire and rescue service where appropriate to ensure that water supplies in the area are adequate for the sprinkler installation and for firefighting purposes.
- Ensure that access to the site is readily available to the fire and rescue service on their arrival and that staff are present during working hours to direct firefighters to the relevant area.
- Control parking to ensure that roads and turning circles in school grounds are kept clear for fire service vehicles. Liaise with police and the local authority if necessary to ensure that fire and rescue service vehicles are

not delayed by unauthorised parking in the vicinity of the school.
- Monitor activities on the school field and elsewhere on site to prevent illicit smoking, playing with fire and experiments that might result in fires being started either accidentally or deliberately.
- Have an effective emergency plan in place to ensure the resilience of the school activities. One way of approaching this is to complete the ROBUST business continuity and incident management planning software available free from https://robust.riscauthority.co.uk/

Further information

1. Regulatory Reform (Fire Safety) Order 2005, SI 2005 No 1541, TSO.
2. The Fire (Scotland) Act 2005, asp 5, TSO.
3. Fire Safety (Scotland) Regulations 2006, Scottish SI 2006 No 456, TSO.
4. Fire and Rescue Services (Northern Ireland) Order 2006, SI 2006 No 1254 (NI9), TSO.
5. Fire Safety Regulations (Northern Ireland) 2010, SI 2010 No 325 (NI), TSO
6. Dangerous Substances and Explosive Atmospheres Regulations (DSEAR), 2002, SI 2002 No 2776, TSO.
7. RC7 *Recommendations for hot work*, 2012, FPA.
8. RC8 *Recommendations for the storage, use and handling of common industrial gases in cylinders including LPG*, 2012, FPA.
9. RC20 *Recommendations for fire safety in the storage and use of highly flammable and flammable liquids: Part 1: General principles*, 2006, FPA.
10. *Business resilience: A guide to protecting your business and its people*, 2005, FPA.
11. The ROBUST software (Resilient Business Software Toolkit) may be found at https://robust.riscauthority.co.uk
12. BS 5839-1: 2013: *Fire detection and fire alarm systems for buildings. Code of practice for design, installation, commissioning and maintenance of systems in non-domestic premises*, British Standards Institution.
13. *LPC Rules for automatic sprinkler installations incorporating BS EN 12845: (Fixed firefighting systems. Automatic sprinkler systems. Design, installation and maintenance, British Standards Institution)*, 2009, FPA.
14. HS(G) 107: *Maintaining portable and transportable electrical equipment*, 2004, HSE.
15. *Code of practice for in-service inspection and testing of electrical equipment* (fourth edition), 2012, Institution of Engineering and Technology.
16. BB100: *Design for fire safety in schools*, 2007 RIBA Enterprises.
17. *Fire safety risk assessment: Educational premises*, 2006, Department for Communities and Local Government.