



**Reference**

- Sprinkler Saves UK
- Reported School Activations/compound data
- November 2021-May 2023

**Broken down into three parts.**

**Section A:** Ten sprinkler saves reported to sprinkler Saves UK, involving schools between the period November 2021 to May 2023.

**Section B:** Compound data focusing on 65 educational activations for the period 2018/19 to 2021/22 where sprinklers were present and operated by floor and location.

**Section C:** Further resources, downloads.

**Section A. Educational, School Sprinkler Activations**

Table 1: Overview of activations November 2021 to May 2023, click link to open

| No  | Date     | Where                                     | Occupancy          | Location of fire             | Ignition source  | Outcome following sprinkler activation | Floor of origin | Number of system heads operated |
|-----|----------|---|--------------------|------------------------------|--|--|-----------------|---------------------------------|
| 1.  | 22/11/21 | <a href="#">Lydiard Millicent Swindon</a> | Primary School     | Toilet                       | Lighted paper or card, or other naked flame were ignited | Contained/Controlled                   | Ground floor    | 1                               |
| 2.  | 24/11/21 | <a href="#">Ilford, London</a>            | Academy School     | Changing room                | Lighted paper or card, or other naked flame were ignited | Contained/Controlled                   | unknown         | 1                               |
| 3.  | 20/02/22 | <a href="#">Ayrshire, Scotland</a>        | School             | Server Room                  | electrical   | Extinguished                           | First floor     | 2                               |
| 4.  | 21/02/22 | <a href="#">Crieff Scotland</a>           | School             | Toilet                       | Lighted paper or card, or other naked flame were ignited | Extinguished                           | Ground floor    | 1                               |
| 5.  | 25/04/22 | <a href="#">Elgin Scotland</a>            | High School        | Toilet                       | Lighted paper or card, or other naked flame were ignited | Contained/Controlled                   | Second floor    | 1                               |
| 6.  | 16/05/22 | <a href="#">Elgin Scotland</a>            | High School        | Toilet                       | Lighted paper or card, or other naked flame were ignited | Extinguished                           | First floor     | 1                               |
| 7.  | 22/05/22 | <a href="#">Glossop England</a>           | School             | Room                         | Unknown  | Contained/Controlled                   | Unknown         | 2                               |
| 8.  | 17/03/23 | <a href="#">Nottingham</a>                | School Academy     | Nursery                      | Unknown  | Extinguished                           | Unknown         | Unknown                         |
| 9.  | 28/02/23 | <a href="#">Hawkhurst, Kent</a>           | Independent school | Design, technology, workshop | Work process   | Extinguished                           | Ground floor    | 1                               |
| 10. | 03/05/23 | <a href="#">Lambeth, London</a>           | Special School     | Room                         | Electrical   | Extinguished                           | unknown         | 1                               |

**Observations**

- 5 of the incidents were malicious with the location involving toilets or a changing room.
- All the incidents were either contained or extinguished.

- 7 incidents required the activation of only 1 sprinkler head, 2 incidents required 2 sprinkler heads.
- Floor of origin, apart from 4 incidents recorded as unknown, 3 incidents took place on the ground floor, 2 on the first floor and 1 on the second floor.
- No sprinkler activations were reported above the second floor.
- The data identifies that the schools, were low rise up to 3 floors, enquires would have to be completed confirming this.

### **Individual Case Studies**

The story around the incident provides powerful evidence to the ability of sprinklers to reduce the effects of fire.

#### **No1; Swindon School Sprinkler Save**

- Date of incident; 22 November 2021
- Time of call; 1:46
- Dorset and Wiltshire Fire Rescue Service
- Occupancy; Single Storey Primary School
- Location; Lydiard Millicent Swindon
- Fire: Ground floor toilet, suppressed by school sprinkler system

Dorset and Wiltshire Fire Rescue Service have provided the following comprehensive update for the above-mentioned incident highlighting the clear benefits of installing sprinklers in schools. BS EN 12845, sprinkler system was installed during the construction of the new school in 2011 for life safety, property protection.

A fire was discovered within a toilet and cloakroom area on the ground floor involving the ignition of a toilet roll and its plastic holder causing a single sprinkler head to activate, extinguishing the fire, and limiting smoke and heat damage.

On arrival operational crews found that the fire has been completely extinguished by the sprinkler system proceeded to assist the school in isolating the system. Business continuity is paramount following any operational incident allowing operational crews to interact with the sprinkler system preventing unwanted water egress.

It should be noted:

- The fire was extinguished before the arrival of the FRS.
- Flashover was prevented.
- The fire was contained to compartment of origin.
- Safety of operational crews was reinforced.
- No reported injuries to pupils or staff

The school was closed for the remainder of the day of the incident, and for 2 subsequent days to make repairs to the toilet area with the students switching to remote learning during this period.

Group Manager Tim Gray said “Dorset & Wiltshire Fire and Rescue Service continue to lobby for the inclusion of sprinkler systems in all premises, particularly in education buildings. The speed of response from the installed system and its control over the fire growth undoubtedly ensured that fire damage was kept to a minimum allowing the school to re-open within 2 days of the fire with as little disruption to the school as possible and no loss of valuable work or property.

The Swindon Advertiser reported, the school is part of the Diocese of Bristol Academies Trust. CEO Jez Piper said: “The fire was quickly contained, and the school was evacuated very quickly and effectively, with no harm to any pupil or member of staff. “The school sprinkler system worked well, and the fire brigade attended the site very quickly, ensuring that the fire was fully out and to secure the area”.

When you compare this to a similar incident attended by Dorset & Wiltshire Fire and Rescue Service on the 3rd of January 2017, the service attended a serious fire at Avenue Primary School in Warminster. On arrival. operational crews found a well-developed blaze within a classroom block. Sprinklers were not fitted, the damage was extensive, but crews were able to stop the spread of fire to further school buildings.

### **No 2; Ilford Academy School Sprinkler Save**

- Date of Incident; 24 November 2021
  - Time of Incident; 12:51
  - Location; Ilford
  - Fire Rescue Service; London Fire Brigade
  - Occupancy; Academy school of 3 floors
  - Location of fire; Changing room
  - Sprinkler System; BS EN 12845, water supply town mains booster pumps
1. LFB have reported the above-mentioned incident involving the actuation of the Academy sprinkler system following a fire in a waste bin located in a changing room.
  2. One concealed sprinkler head operated suppressing, extinguishing the fire preventing the fire from spreading from the room of origin.
  3. The sprinkler system was interfaced with the fire detection and fire alarm system allowing the alarm to be raised.
  4. Total property area damaged by fire estimated to be under 5 square meters, the cause of the fire is under investigation.

This incident clearly identifies the benefits of sprinklers in schools, it is reported <sup>1</sup> in the last 5 years school fires have:

- Destroyed the equivalent of 1,100 classrooms.
- Destroyed 47 Primary /secondary school buildings following 2,300 incidents.
- More than 74,000 square metres, an area equivalent to 10 football pitches of teaching facilities have been damaged by fire in this time.
- In the period from April 2015 - April 2020, 1,467 primary school and 834 secondary school fires were reported.

### **No 3; North Ayrshire School Saved by Sprinkler System**

- Fire Rescue Service; Scottish Fire and Rescue Service
- Date of Incident; 20 February 2022
- Time of call; 21:49
- Occupancy; School/leisure centre
- Location of Fire; Server Room
- Ignition Source: Electrical
- Two sprinkler heads operated.

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<sup>1</sup> [More than 1,100 classrooms gutted by school blazes](#) – Zurich Insurance – Accessed 07.08.2023

Scottish Fire & Rescue Service have reported the above-mentioned incident involving an electrical fire within the school's server room located on the first floor.

Two sprinkler heads activated which contained, extinguished the fire before arrival of fire crews at Garnock Community Campus, fire damage was restricted to under 10m<sup>2</sup>.

The benefits of installing fire sprinklers in schools clearly identified.

- Protecting both the occupants and the building
- Reducing potential fire, smoke damage
- Reducing potential disruption to students' education

#### **No 4; Scotland School Sprinkler Save**

- Occupancy: Community campus which incorporates Crieff High School
- Where: Crieff, Scotland
- When; 21 February 2022
- Fire Rescue Service; Scottish Fire Rescue Service (SFRS)
- Time of Call; 12:45
- BS EN 12845, Commercial Sprinkler installation

The benefits of protecting educational buildings in Scotland with fire sprinklers clearly demonstrated once again, in this case a community campus proving a range of sporting opportunities for both the children attending the campus and the wider community clearly demonstrated following this fire.

#### **The incident**

- Two fire pumping appliances from SFRS were mobilised to a fire following the activation of the premise sprinkler system.
- On arrival operational crews identified the community campus (650 people) had been evacuated due to a fire within the ground floor toilet.
- No further action was taken by operational crews as the fire had been extinguished before their arrival by the activation of one concealed sprinkler head.
- Total property area damaged by fire 5m<sup>2</sup>.
- Material ignited, toilet paper/fixing plastic toilet roll dispenser.

#### **Business Continuity**

School fires have a devastating impact on both a school and a community, every year many schools are damaged or destroyed by fires, affecting the education of pupils across the country causing millions of pounds worth of damage.

On this occasion, the impact of this school fire was minimal due to the decision at the design stage to install fire sprinklers throughout the school:

- Fire, heat/smoke damage contained to the compartment of origin.
- Other locations within the school were unaffected.
- Schools' continuity allowing pupils/students to return to normality far more efficiently with considerably less disruption.
- The campus was closed for only 2.5 hours.

#### **This incident clearly demonstrates the benefits of fire sprinklers in schools.**

- In terms of life safety/property protection
- Preventing large fires, protects the environment by avoiding CO<sub>2</sub> emissions.
- Reducing water supply contamination

- Maintain the school's continuity allowing students to return to their classrooms in a matter of hours.
- Protect students, staff, and firefighters.

#### Arson

- Interrogating the Sprinkler Saves UK database this is the fifth school sprinkler save reported in the space of 9 months.
- 4 of the 5 incidents reported as malicious
- location of the fire:
  1. Three within a toilet
  2. One within a changing room

#### Clearly identifying the importance of providing sprinkler protection within toilets/changing rooms Legislation

- The benefits of fire sprinklers being mandatory in Scotland clearly identified once again if this incident had taken place south of the border in England the outcome could have been so different.
- Fire sprinklers are only mandatory in new school buildings in Scotland and Wales but not in England and Northern Ireland.
- Building Bulletin 100 (Design document for new schools) is currently being reviewed in England, highlighting that the sprinkler expectation will be removed.
- Our position is that that government explicitly maintains the sprinkler expectation in the



revised BB100 publication so that fewer schools are damaged and destroyed by fire.

This image provided by Derbyshire Fire & Rescue Service clearly identifies the impact of a fire in a school where sprinklers are not installed.

## **No 5: Elgin High School Sprinkler Activation**

- Fire Rescue Service: Scottish Fire Rescue Service (SFRS)
- Incident: Fire
- When: 25 April 2022
- Time of call: 12:44 pm
- Location: Elgin High School, Elgin
- Occupancy: Comprehensive Education Facility
- Automatic fire suppression System: Fire Sprinklers

### **Background**

Elgin High School is a three storey, £30 million six-year comprehensive facility accommodating up to 800 pupils which opened in October 2017, replacing the old high school building. The new school is a widely used community facility with sports and performance facilities open to the public.

### **Automatic Fire Sprinklers**

- Since 2010 all new built Scottish schools are required to have automatic fire sprinklers fitted, protecting both the occupants and the building in line with Scottish Building Standards for non-domestic buildings.
- This is not the case for England, current guidance when first released in 2007, acknowledged the important role of sprinklers and stated that “all new schools should have fire sprinklers installed except in a few low-risk schools”.
- Unfortunately, it is possible for designers and developers to circumvent the improvement in areas such as automatic fire suppression systems by using other building design guidance. The outcome schools not installed with fire sprinklers.

### **The Incident**

- Two fire rescue appliances were mobilised to a fire involving the school toilet cubicles on the second floor, one breathing apparatus crew consisting of two wearers were committed to extinguish the fire.
- Upon entry, it was identified the sprinkler system, actuated controlling/containing the fire to within the compartment of origin. The fire was extinguished using one hose reel jet, no injuries were reported.
- Minimal fire and smoke damage limited to the fully enclosed WC toilet.
- Toilet paper was established to be the material ignited first.

### **Automatic Fire Sprinkler System**

- Wet pipe System
- Actuation, one concealed fire sprinkler head

### **Business continuity**

- This incident was a relatively minor inconvenience due to the prompt activation of the sprinkler system preventing a major fire, proving once again that schools are back up and running in a short period of time. The benefits of sprinklers clearly demonstrated protecting this £30 million comprehensive facility.

**The outcome of this fire could have been so much different, if this incident had been in England.**



For example, The Selsey Academy fire, August 2016 sprinklers were not fitted, the outcome the school left destroyed following the fire. The Academy was rebuilt would you believe without sprinklers!

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.



Image credit: West Sussex Fire & Rescue Service

#### **No 6.; Elgin Academy Sprinkler Activation**

- 16 May 2022
- Fire Rescue Service: Scottish Fire Rescue Service (SFRS)
- Incident: Fire
- When: 16 May 2022
- Time of call: 09:07
- Location: Elgin
- Occupancy Elgin Academy
- Automatic fire suppression System: Fire Sprinklers

### **SFRS have reported the following incident.**

- Ignition source, toilet paper/alcohol gel
- One sprinkler head actuated.
- Extinguished the fire.
  
- Since 2010 all new built Scottish schools are required to have automatic fire sprinklers fitted, protecting both the occupants and the building in line with Scottish Building Standards for non-domestic buildings.
- The benefits of this legislation clearly demonstrated for the above-mentioned incidents, on each occasion the fire was contained to the compartment of origin, preventing a minor inconvenience escalating into a major fire.
- This is not the case for England, current guidance when first released in 2007, acknowledged the important role of sprinklers and stated that “all new schools should have fire sprinklers installed except in a few low-risk schools”.
- Unfortunately, it is possible for designers and developers to circumvent the improvement in areas such as automatic fire suppression systems by using other building design guidance. The outcome schools not installed with fire sprinklers.

### **Background**

Elgin Academy is a three-storey school accommodating up to 1050 pupils which moved into this new premises in April 2012. The school is a widely used community facility with sport facilities, performance facilities open to the public.

### **The Incident**

- One fire rescue appliance was mobilised to a fire involving the school toilet cubicles on the first floor.
- Upon entry, it was identified the sprinkler system had extinguished the fire with no further firefighting media required.
- Minimal fire and smoke damage limited to the fully enclosed WC toilet.
- Toilet paper/alcohol gel material ignited first.

### **Automatic Fire Sprinkler System**

- Wet pipe System
- Actuation, one concealed fire sprinkler head

### **The outcome of this fire could have been so much different if this incident had been in England.**

When you compare this to the three major school fires in Derbyshire that were all severely damaged by fire in May/October 2020, where sprinklers were not fitted.

- Harrington Junior school fire 28 May 2020
- Ravensdale Infant School, 5 October 2020
- St Mary’s Catholic Voluntary Academy, in Darley Abbey, 3 October 2020





Credit image: Derbyshire Fire Rescue Service (DFRS), Ravensdale Infant School

These fires have resulted in the agreement of a statement of intent, between DFRS, Derby City Council and Derbyshire County Council, surrounding sprinklers in new-build schools and those undergoing renovation, which should be applauded.

**This incident clearly demonstrates the importance of protecting educational premises with AFSS:-**

- Without the Fire Sprinkler System, there would have been significant damage to the school, potential risk of injury to members of staff, firefighters.

**Legislation**

- Currently sprinklers are only mandatory in new school buildings in Scotland and Wales but not in England and Northern Ireland.
- Building Bulletin 100 (Design document for new schools) is currently being reviewed, highlighting that the sprinkler expectation will be removed. Our position is that that government explicitly maintains the sprinkler expectation in the revised BB100 publication so that fewer schools are damaged and destroyed by fire.

**No 7; Fire Sprinklers Save Derbyshire School**

- Fire Rescue Service; Derbyshire Fire Rescue Service (DFRS)

- Date of incident; 22 May 2022
- Time of call 09:38
- Location; Glossopdale School and Sixth Form, Glossop
- Background: Purpose built new school occupied 2018
- Purpose group; Educational building
- Incident; Fire
- Location of Incident: Room
- Automatic Fire Suppression System (AFSS); Sprinkler System

DFRS, reported the above-mentioned fire sprinkler that clearly identifies the benefits of installing automatic fire suppression systems for schools.

**On this occasion protecting this school, both in terms of life and property protection.**

**The Incident**

The fire originated in a room located at the rear of the building which was extinguished before the arrival of DFRS. Two people with minor burns received hospital treatment as a result from the fire.

It is reported that approximately 1m<sup>2</sup> of floor space damaged by fire, smoke damage contained to the compartment of origin.

**Automatic Fire Suppression System**

- The system was installed to meet the requirements of BS EN 12845.
- Water supply via dedicated capacity tank/Pump, minimum duration of 30mins
- Two fire sprinkler heads actuated.

**Business Continuity**

School fires have a devastating impact on both a school and a community, every year many schools are damaged or destroyed by fires, affecting the education of pupils across the country causing millions of pounds worth of damage.

On this occasion, the impact of this school fire was minimal due to the decision at the design stage to install fire sprinklers throughout the school: –

- Fire, heat/smoke damage contained to the compartment of origin.
- Other locations within the school were unaffected.
- Schools' continuity allowing pupils/students to return to normality far more efficiently with considerably less disruption.
- The school was closed for only 2 hours the following day allowing for minor housekeeping to be completed.

**No 8; Nottingham School Fire Sprinkler Activation**

- Fire Rescue Service; Nottingham Fire & Rescue Service (NFRS)
- Incident; Fire
- When; 17 March 2023
- Time of call; 14:00
- Where: Sneinton, Nottinghamshire
- Occupancy: School, academy

NFRS have reported the following Nottingham Academy fire resulting in the school commercial sprinkler system activating that clearly identifies the benefits of installing fire suppression systems for schools.

Nottingham Academy is a large academy built on two campuses with a capacity of 3750 pupils, it is one of only a handful of schools in the country with its own nursery, primary, Secondary and Sixth form provision.

#### **The Incident**

- Fire crews were mobilised from Carlton, London Road and Stockhill Fire stations.
- On arrival, operational crews identified that a small fire in the nursery office was contained and extinguished by the school's sprinkler system.
- No injuries were reported.
- The cause of the fire is currently under investigation.

Watch Manager Wiggan said: "There was only slight fire damage to the room of origin at the school due to them having the correct sprinkler system in place. Without this, the fire could have spread rapidly and put the school at risk."

#### **They tell a story.....**

**The reporting of sprinkler saves tell a story bringing the incident to life, this incident clearly demonstrates the benefits of sprinklers for both life and property protection.**

School fires have a devastating impact on both a school and a community, every year many schools are damaged or destroyed by fires, affecting the education of pupils across the country causing millions of pounds worth of damage.

**On this occasion, the impact of this school fire was minimal due to the decision at the design stage to install fire sprinklers throughout the school: –**

- **Fire, heat/smoke damage contained to the compartment of origin.**
- **Other locations within the school were unaffected.**
- **Schools' continuity allowing pupils/students to return to normality far more efficiently with considerably less disruption.**

When you compare this to a recent school fire in Yatton Bristol on the 29 May 2023 where sprinklers were not fitted, the outcome on this occasion was that the school lost six classrooms and over 100 children were displaced to surrounding schools, the time period for repairs has not yet been determined but will extend into the new school year.

The image speaks a thousand words.....



Image credit: Avon Fire & rescue Service

Legislation, did you know it is mandatory for all new schools in Scotland and centrally funded schools in Wales to be fitted with sprinklers. This is not the case for England, current guidance when first released in 2007, acknowledged the important role of sprinklers and stated that “all new schools should have fire sprinklers installed except in a few low-risk schools”.

Unfortunately, it is possible for designers and developers to circumvent the installation of sprinklers but still improve areas by using other building design guidance. The outcome is new- built schools without fire sprinklers being installed.

Did you know 219 primary and secondary schools were damaged by fire in 2021/22 in England which is an 35% increase from 2020/21.

### **No 9; Kent School watermist activation**

- Fire Rescue Service; Kent Fire Rescue Service (KFRS)
- Incident; Educational building fire
- When; 28/02/2023
- Where, Hawkhurst, Kent
- Type of Premises; School
- Automatic fire suppression System: Low Pressure Watermist System designed and installed to BS8489

The premises consists of a co-educational nursery, pre-prep and prep preparatory school for children aged 3 to 13. The fire took place within a two-storey building containing 2x design, technology workshops on the ground floor with 4 additional classrooms on the first floor.

#### **Incident**

- During a workshop school lesson, a fire broke out involving a laser cutter.
- Activating the premises fire alarm system, nearest water mist nozzle adjacent to the fire.
- The school emergency plan was implemented resulting in the school being evacuated.
- The fire was contained, controlled, and extinguished by the activation of one watermist nozzle head within the compartment of origin.
- The watermist system was isolated by maintenance staff following assessment the fire had been extinguished preventing water collateral damage.

#### **This system actuation ensured that:**

- Damaged caused by the fire and subsequent firefighting actions by the FRS was minimal.
- Students were able to return to the premises within an hour following the close of the incident.
- The classroom involved with the fire was able to be reoccupied the next day following the reinstallation of the watermist system and completion of minor cosmetic repairs.

### **No 10; London Community Special School Fire Sprinkler Activation**

- Fire Rescue Service; London Fire Brigade
- Incident; Fire
- When; 3 May 2023
- Time of call; 14:44
- Where: Lambeth
- Occupancy: School

LFB have reported the following educational fire resulting in the school sprinkler system activating, extinguishing the fire before the arrival of operational crews. The premises is a purpose-built school building constructed in 2013 accommodating up to 110 pupils to meet the need of pupils with special educational needs and disabilities including sensory rooms, soft playrooms, hydrotherapy pool.

#### **The Incident**

- Fire crews were mobilised to a fire involving an electrical appliance.
- On arrival, LFB identified that a small fire was contained and extinguished by the activation of one sprinkler head.
- Limiting the fire to the item first ignited with fire damage up to 5sqm.
- No further firefighting was required by the LFB, no injuries were reported.



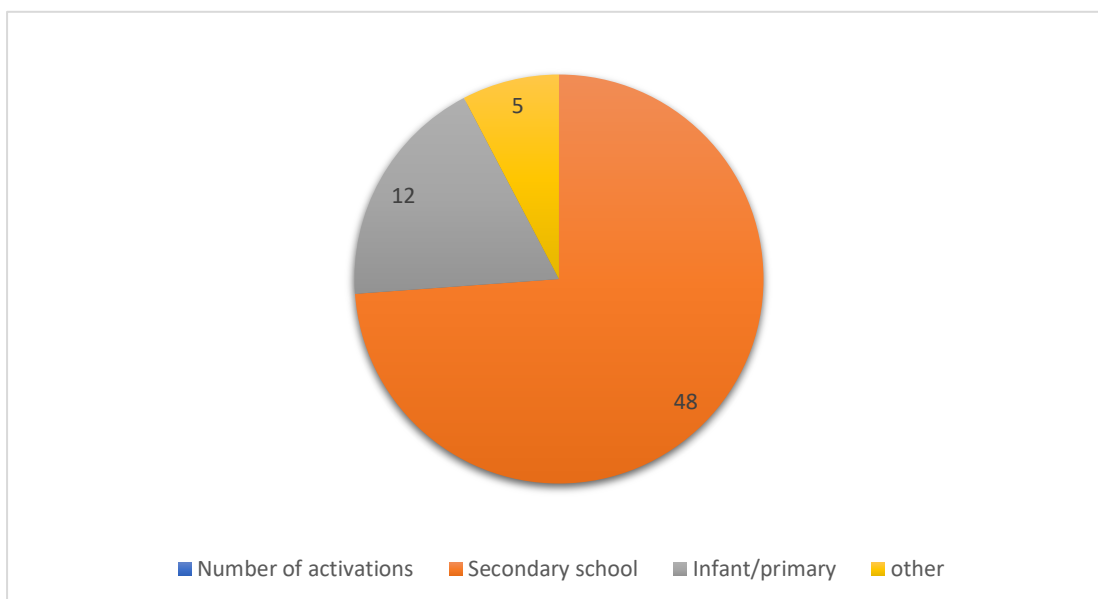
## Section B: Sprinklers Compound Data - Great Britain Financial Years 2018/19 to 2021/22 <sup>2</sup>

- **Number of fires within educational buildings installed with sprinkler systems.**

In total, data was provided for 65 fires where sprinklers were identified as being present, operated.

Secondary schools accounted for the highest number of incidents with 48 (74%) followed by infant/primary schools with 12(19%)

**Figure 1: Number of fires within educational buildings installed with sprinkler systems.**



The figures show that the highest number of reported sprinklers present following a fire involved secondary schools compared to infant/primary schools.

- This could be due to the Standard Specifications, layouts and Dimensions, Sprinklers for School Building publication developed specifically for the Building Schools for the Future (BSF) programme. Introduced by the Department for Education the aim to disseminate best practice for the installation of sprinklers. Principally aimed at secondary school buildings in England.
- More data is needed to identify if this was due to the then BSF programme.

### **Sprinkler activation by floor of origin**

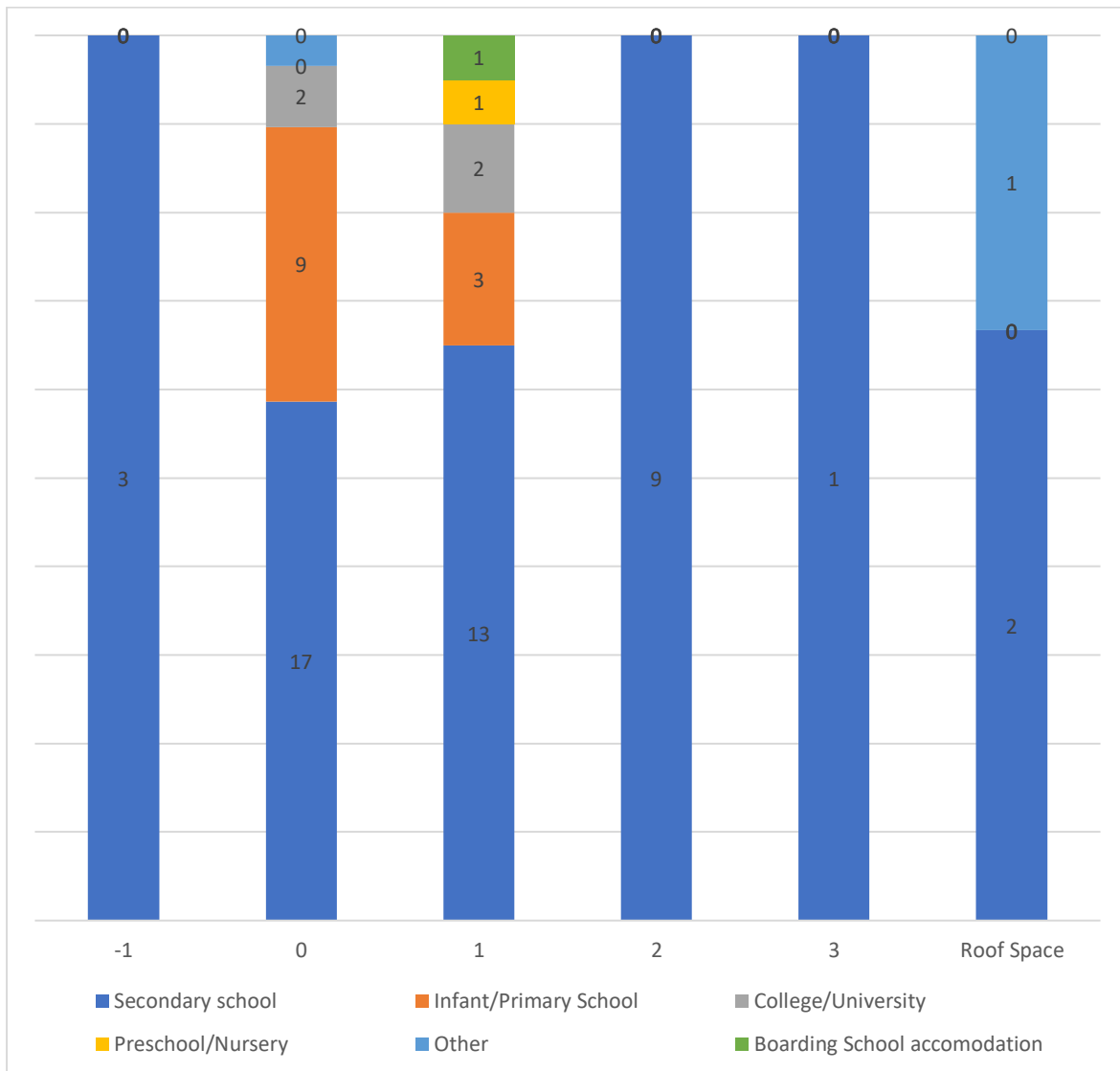
- The ground floor accounted for the highest number of activations with 28 (43%) followed by the first-floor accounting for 20 (31%)

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<sup>2</sup> Source: FOI Requests for Incident Recording System Datasets relating to primary fire building attended by FRSs in which sprinklers were present for England, Scotland, and Wales for the financial years 2018/19 to 2021/22

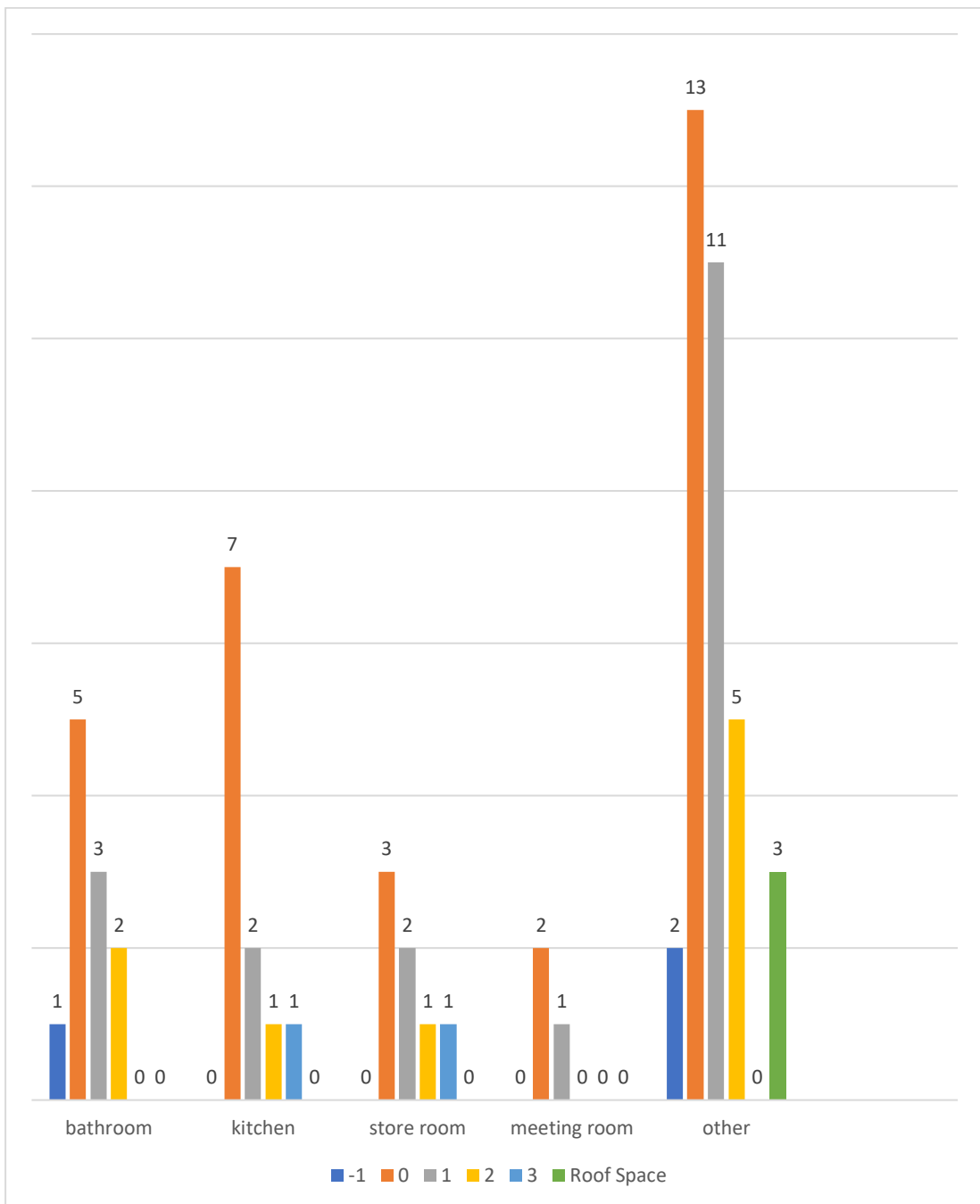
- The data suggests that the floor height of schools is up to three floors.
- No activations were reported above the third floor, more data, research is needed to identify the average number of floors in schools.
- Three incidents were indicated to have occurred in a roof space.

**Figure 2: Sprinkler activations by floor of origin**



**Figure 3: Sprinkler activation by room, floor of origin**

- It's no surprise that bathrooms, account for 11 activations predominately on the ground, first floor supporting the data provided to Sprinklers Saves UK for the 10 activations reported.
- Compound fire data 2010/11-2022/23, reaffirmed this identifying toilet fires accounted for the highest number of deliberate fires with 368.
- Averaging 28 incidents per year involving toilets



## Section C Further Resources

All publications provide reference to educational premises.

- [Sprinkler Saves Review 2021/22](#)
- [Sprinkler Saves Review 2022/2023](#)
- [2018-21 Greater London Sprinklers Review](#)
- [Incident data report, focus on sprinklers in Educational Premises](#)
- [Sprinkler Saves UK](#)

