bre

www.bregroup.com

Briefing Paper

Fire fatalities beyond the dwelling of fire origin in Scotland

Raman Chagger

The Scottish Government

Riaghaltas na h-Alba

Executive Summary

The Building Standards Division of Scottish Government requested the Building Research Establishment (BRE) Global to analyse data, which is held by the Scottish Fire and Rescue Service (SFRS), in order to determine specific fire death events and any correlations relating to external cladding in Scotland. The data that the SFRS holds comes from the Incident Recording System, to which the BRE Global was given access, as well as relevant Fire Investigation reports.

The study covered a 14-year period, from April 2009 to April 2023. Initially, BRE Global was asked to identify, from the record data, instances where fatalities were recorded as having occurred beyond the dwelling of fire origin in certain types of residential premises (houses were excluded from this study) that could have external cladding. The principal correlation under consideration related to cladding – specifically whether it was recorded on the Incident Recording System as being involved during any fatal fire events. The findings, from the IRS review were:

- there were no instances recorded in the complete dataset where cladding was involved in a fatal fire event,
- it could not be determined from the complete dataset whether cladding contributed towards any injury(ies), so these could not be further assessed,
- there were 291 relevant fire fatalities recorded in the dataset,
- of the 291 fatalities, 186 were excluded, for various reasons, for example, where an incident record was limited to the item first ignited,
- of the remaining 105 fatalities, whilst their exact location was not known, it was possible to conclude seven fatalities occurred beyond the floor of fire origin, 82 fatalities occurred on the floor of fire origin and 16 fatalities remained unclear.

Following these findings Building Standards Division requested that the BRE Global conduct a second phase of work involving a more detailed examination of 99 Fire Investigation reports (also held by the SFRS) of the 105 fatalities detailed above.

Some of the reports were not available so the remaining study focused on 75 reports covering 81 fire fatalities. The key findings from the second phase of work are shown below:

- In 80% of these (65 fire fatalities) the room of fire origin was determined to be the bedroom, kitchen or living room.
- Most fatalities occurred in the bedroom (42%).
- There was only one case of a fire fatality occurring beyond the flat of fire origin; the death resulted from smoke inhalation. The SFRS investigation concluded that, in their professional opinion, had the occupant been in, and / or remained within their own flat for the entire duration of the fire event and followed SFRS advice to open windows and to 'stay put", this individual would likely not have died. The SFRS personnel further reported that there was no failure of the compartmentation.
- No mention was made by the SFRS, in any of the 75 FI reports, that cladding had either:

    a) been involved in any of these fires, or
    b) contributed to the spread of fire beyond the flat of fire origin, or contributed to the single fire fatality, beyond the flat of fire origin.

From the review of the IRS database and Fire Investigation reports it is evidenced that in Scotland, for the period April 2009 to April 2023, there was:

- only one fatality beyond the flat of fire origin, which in the opinion of the SFRS would likely not have occurred if the "stay put" policy had been followed,
- no evidence that cladding had been involved in any of the fatalities,
- no evidence that cladding had contributed to the spread of fire beyond the flat of fire origin.

Contents

Introduction

Scottish Government (Building Standards Division) requested BRE Global to investigate whether there were any fire fatalities that occurred in multi-storey flats in Scotland in which the victim had died beyond the dwelling of fire origin. As well as the conditions under which any such fatalities occurred, they were also interested to know for what percentage of those was cladding a contributing factor. BRE Global were requested to review as much available data recorded by Scottish Fire and Rescue Service (SFRS) for incidents in Scotland.

A technical steering group (TSG) comprising the Building Standards Division, SFRS and a Fire Consultant (Colin Todd of C. S. Todd & Associates Ltd) collectively agreed the scope of work to be performed.

Initially it was expected that these questions could be answered by analysing the data that the SFRS hold on its own Incident Recording System (IRS) [1]. These report on all fire fatalities that have occurred in Scotland, from which the relevant data, relating to multi-storey dwellings in which the victim(s) died beyond the dwelling of fire origin, could be extracted. No wider study (for example based on independent fire investigation, media accounts or other reports and datasets) was commissioned or conducted, as part of this piece of work.

Just over 14 years' worth of data (April 2009 - April 2023) was provided by SFRS for electronic analysis and data prior to this period were not available electronically. Some of the responses in specific IRS reports did not provide sufficient or reliable information to draw firm conclusions and so a second phase of work was proposed, involving a detailed review of relevant Fire Investigation (FI) reports. The review of the IRS data is referred to henceforth as Phase 1 and was entirely confined to analysis and interpretation of the IRS data held by the SFRS. During Phase 1 a total 99 FI reports (covering 105 fire fatalities) were identified for further review during Phase 2.

Abbreviations and glossary of terms

The abbreviations list and glossary are compiled from terms used in this publication. The descriptions in the glossary are not intended to be comprehensive, but to help the reader understand the meaning of terms as they are used in this Briefing Paper.

Abbreviations

BRE- Building Research Establishment

FI- Fire Investigation

FRS- Fire and Rescue Service

IRS- Incident Recording System

SFRS- Scottish Fire and Rescue Service

TSG- Technical Steering Group

Glossary

Fire Fatalities – those fire incidents attended by Fire and Rescue Services that resulted in a fatality due to the fire or products of the fire.

Fire Investigation Report – produced by a Fire Investigator summarising the events surrounding a fire and involving a fatality.

Fire Origin – the specific location or area where a fire began.

Incident Recording System – a digital tool used by FRS personnel to record the details of all incidents attended.

Tenement – a traditional purpose-built block of flats, of stone construction, typically built prior to the early twentieth century, comprising four or five storeys, with two, or sometimes three, flats per storey. The buildings are typically built in the form of a row or terrace, within which there are multiple entrances, each leading to a single stairway, off which the flats are entered directly. There is no communication between stairways; a party wall separates the flats accessed by one stairway and the flats accessed by the next stairway in the terrace.

Phase 1: IRS data supplied by SFRS

Selection of IRS data

The web-enabled IRS is for data collection, statistical handling and publication of incident data from the Fire and Rescue Service (FRS). It contains key data relating to incidents in which the FRSs in the UK are called out. FRS personnel complete the form and answer a series of questions relating to each specific incident. These are then collated so that users of the system can retrieve all the data from specific historic incidents or gather data from all incidents for specific questions.

The data requested was for Scotland during the period April 2009 - April 2023 and was limited to the following questions from the IRS:

- Question 1.1 – FRS Incident Number
- Question 2.1 – What was the time and date of call?
- Question 2.5 – Time/Date of Stop Message
- Question 3.2 – What type of Property was involved?
- Question 5.2 – How long was it between Ignition and Discovery?
- Question 8.4 – What was the source of ignition?
- Question 8.18 – Was there any special method of building construction involved?
- Question 8.20 – What was the extent of flame and/or heat damage on arrival?
- Question 8.22 – What was the extent of flame and/or heat damage (at stop)?
- Question 8.28 – Number of floors/decks above ground level/ main deck (e.g. 1 for bungalow)
- Question 8.30 – Which floor/deck did the fire originate upon?
- Question 9.6 – What was the extent of harm of victim
- Question 9.10 – Where was the victim when the fire started?
- Question 9.11 – Where was the victim found?
- Question 9.24 – What was the severity of the injury?

From **Q3.2 What type of property was involved?** the property types (Level 1) are split over nine Level 2 categories, namely:

1. Dwelling
2. Other Residential (institutional)
3. Non Residential Buildings
4. Road Vehicle
5. Rail Vehicle
6. Aircraft
7. Boat
8. Outdoor
9. Outdoor Structures

The TSG and the SFRS reviewed these nine categories and it was agreed that only "Dwellings" and "Other Residential (institutional)" should be included in the study and only some of the sub-categories (Level 3) were selected. Whilst the original intention was to identify those incidents where fatalities had occurred in a block of flats the scope was broadened to include additional building types.

Tenement buildings were included because the TSG were aware these were often observed to have poor compartmentation, so any constructional failures that may have been recorded at fatal fires (and particularly issues relating to cladding) would be of interest to the group. BRE Global was reliant on the SFRS incident reports being correctly sub-classified, at the time of the records being entered onto the IRS and was not in a position to check or challenge these entries.

Other sub-categories were included because the TSG were concerned that sometimes fire officers entering the records on the IRS inadvertently misreport the dwelling type. In order to ensure that any information relevant to this research was not inadvertently excluded, the approach was taken to include as many dwelling types as possible that could potentially be of interest. Hence, some property types, such as care homes, were also to be included.

For the Level 2 category "Dwellings", sub-categories such as house and bungalow and for "Other Residential (institutional)", sub-categories such as hotels and hostels, were excluded. The selected sub-categories for Dwellings and Other Residential (institutional) are shown in Table 1 and Table 2, respectively. The Guidance (Level 4) is taken from the IRS.

Sub-category (Level 3)	Guidance (Level 4)
Purpose Built Flat/Maisonette- Multiple Occupancy	Up to 3 storeys
	4 to 9 storeys
	10 or more storeys
Converted Flat/Maisonette- Multiple Occupancy	Up to 2 storeys
	3 or more storeys
Licenced House in Multiple Occupation	Up to 2 storeys
	3 or more storeys
Unlicenced House in Multiple Occupation	Up to 2 storeys
	3 or more storeys
Self-contained Sheltered Housing	Includes Supported Living properties and Warden Controlled Sheltered accommodation.
Tenement Building	Scotland only– built mid-1800s, created by dividing up floors & rooms of large houses (see Glossary for detailed description).

Table 1: Sub-categories (Level 3) from Level 2 category- Dwellings

Phase 1: IRS data supplied by SFRS (continued)

Sub-category (Level 3)	Guidance (Level 4)
Sheltered Housing – not self-contained	This category should be very rarely used as most properties can be categorised elsewhere.
Residential Home – Retirement/Elderly	Old person's rest home. Does not include where primary purpose is medical care.
Student Hall of Residence	Regardless of ownership – i.e. University-owned or accommodation purpose built for students and managed by an external company.

Table 2: Sub-categories (Level 3) from Level 2 category- Other Residential (institutional)

Selection of IRS data

The Home Office and SFRS were both contacted with a request to provide at least 20 years' worth of data relating for the sub-categories listed in Tables 1 and 2. Both reported back that there were no electronic data available for fire statistics prior to 01/04/2009, since before this date, the data were collated on paper using the Fire Data Report system (FDR1). Since that date, the IRS was adopted by the SFRS and hence this data is available electronically for review. The Home Office reported in a private communication that, since fire is a devolved issue, they no longer report on Scottish incidents and requested that this information be obtained directly from SFRS.

SFRS provided the response data to the specific IRS questions requested, covering the 14-year period from 01/04/2009 to 24/04/2023, in two electronic worksheets titled "Incidents" and "Victims".

The "Victims" worksheet contained 15,814 incidents, focussing on details of injuries and fatalities and was used to gather information about the **fire fatality and injury incidents, extent of damage and the property type** which are reported respectively in the following 3 sections.

The "Incidents" worksheet contained basic details of 57,325 fatal and non-fatal incidents and was used to gather information about all the **incidents involving cladding** are reported thereafter.

Fire fatality and injury incidents

Of the 57,325 fire incidents, meeting the selected sub-categories shown in Tables 1 and 2, 83.0% were recorded as "no injury" and details of the remaining 17.0% (9739 incidents) are shown below in Figure 1. These figures were derived by collectively reviewing the responses of the IRS data to **Q9.6 Victim Type** (3 options- fatality, injured or rescued) and **Q9.24 Severity Of Injury** (4 options- Serious, Slight, First Aid or Precautionary Check).

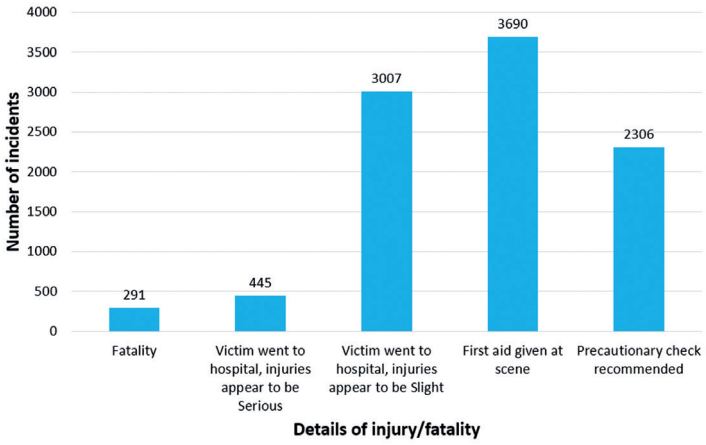

Figure 1: Incident data by the severity of injury

The data shows that most frequently (3,690 persons) were given first aid at the scene. The next most frequent was 3,007 persons taken to hospital for a slight injury. There were 445 persons recorded as having a serious injury, requiring hospitalisation. There were 291 fatalities averaging at 20.7 per year over the last 14 years for the selected building types.

For the 291 fire fatalities, further interrogation of the IRS data (using responses to **Q9.11 Where was the victim found?**) was performed to identify where the fatalities were found. There are 11 possible responses to this question which, together with the associated numbers for each, are shown in Table 3.

Q9.11 Where was the victim found?	Frequency
Room, cabin or compartment of origin	155
Different room, cabin or compartment on floor of origin	101
Outside building, vehicle etc of origin	9
Location of person unknown	6
Other location	7
Floor above origin	6
Seat of fire unknown or multi-seated (and above not applicable)	3
Not applicable	2
Two or more floors above origin	1
One floor below origin	1
Two or more floors below origin	0
Total	**291**

Table 3: Location of where the victim was found

As this study focussed on fatalities beyond the dwelling of fire origin, those highlighted in blue (166 in total) are not considered further as they are in the same dwelling or outside the building or otherwise not applicable, however, those in red (125) are of interest.

Extent of damage

The Victims spreadsheet provided by SFRS (containing 15,814 records) was analysed to determine the extent of the fire damage and then to correlate this with the location of where the fatalities were found. This was to identify incidents in which fires spread beyond the room of fire origin and fatalities that were discovered on the floor of fire origin, but not in the room of fire origin. This would support the identification of

incidents in which fatalities were found beyond the room or cabin or compartment of origin, for further analysis.

The number of fatalities associated with the relevant options for **Q8.22 What was the extent of flame and heat damage (at stop)?** were analysed and are shown in Figure 2. Note there were no incidents recorded for the three options to Q8.22 that involve roof spaces (External roof only, Roof space and other floors(s) and Roof space only).

The responses to options shown in red are of interest because they are fatalities that occurred beyond the room of fire origin and, in the case of the Null responses, these are of interest as they cannot be discounted without further information.

The common responses for fatalities to options **Q9.11 Where was the Victim Found (Table 3) and Q8.22 What was the extent of flame and heat damage (at stop)?** (Figure 2) were analysed together. This led to the identification of individual FI reports that could provide further information for cases where fatalities were found beyond the room or cabin or compartment of origin and where the damage extended beyond the room of origin. A total of 105 fatality incidents were identified- seven that occurred beyond the floor of origin, 82 that were on the same floor of origin and 16 that were not clear. These 105 fatalities were covered in 99 FI reports (some reports had multiple fatalities) and the SFRS was requested to provide these for the review in Phase 2 of the project.

Property type

Over the 14-year period, the numbers of fatalities associated with each property type resulting from **Q3.2 What type of Property was involved? is shown in Table 4.**

Over two-thirds (197/291) of all fatalities occur in multiple occupancy Purpose Built Flat/Maisonettes.

Q3.2 – What type of Property was involved?	Frequency
Purpose Built Flat/Maisonette - multiple occupancy, up to 3 storeys	129
Tenement Building	47
Purpose Built Flat/Maisonette - multiple occupancy, 4 to 9 storeys	40
Purpose Built Flat/Maisonette - multiple occupancy, 10 or more storeys	28
Self-contained Sheltered Housing	25
Converted Flat/Maisonette - multiple occupancy, up to 2 storeys	9
Converted Flat/Maisonette - multiple occupancy, 3 or more storeys	6
Sheltered Housing - not self-contained	3
Residential Home, retirement/elderly	2
Licensed House in Multiple Occupation, 3 or more storeys	1
Licensed House in Multiple Occupation, up to 2 storeys	1
Total	**291**

Table 4: The property types involved and the number of associated fatalities

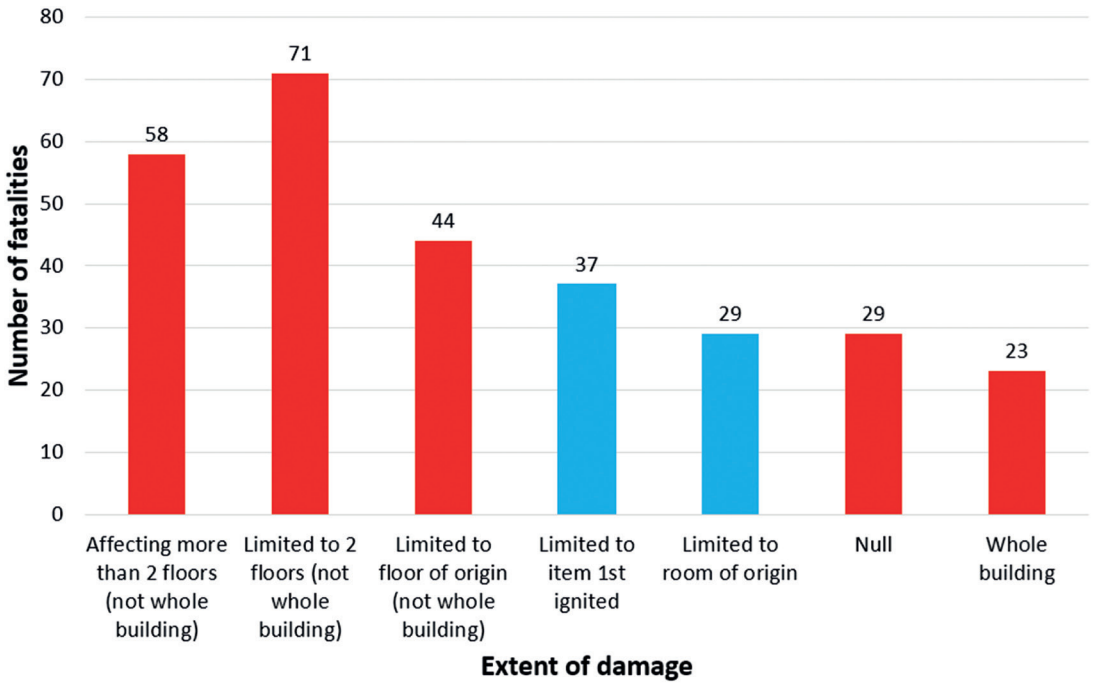

Figure 2: Extent of damage and number of associated fatalities

Phase 1: IRS data supplied by SFRS (continued)

Incidents involving cladding

Within the IRS, there is only one occasion where the term "cladding" appears. This is as one of the nine options to **Q8.18 Was there any special method of building construction involved?** hence the responses to this question were analysed, since only responses to this question would reveal if cladding may have played a part in the fatality. Cladding is not listed as a named option, in any of the other IRS questions. However, BRE Global notes **Q8.8 If there was any rapid fire growth, how was this caused?** which appears to be the logical place where any reference to cladding should have been found.

An initial review of fatality data associated with **Q8.18** indicated that were no cases where cladding had been involved. So, the analysis of data associated with cladding was extended to include injuries, which could provide meaningful data about incidents that had the potential to become fatalities.

Of the 57,325 fire incidents in this dataset, 191 (0.33%) were listed as having "Cladding" under **Q8.18** and of these there were 0 fatalities and 30 injuries. Note that the injuries were not necessarily the result of the cladding, but just that cladding was present in the building construction in which those injuries occurred. The data from the 30 injuries were interrogated further to identify the extent of the injury and the location- in the building.

Of the 30 injuries 12 were limited to the room of origin or to the item first ignited and were excluded as only the remaining 18 injuries were of interest as these occurred beyond the room of origin. These were analysed further and compared with the data to identify the extent of the injury from Q9.24 **What is your understanding of the cause of death / nature of injury?** as shown in Table 5.

Note that one of the options for Q8.22 is 'Null' and, in BRE Global's opinion, Null is unhelpful in eliciting meaningful information. By way of example, 'Null' may mean the question was not specifically asked. 'Null' should not be taken to mean that there was no damage, but as there is no associated information and could include relevant data, 'Null' entries were therefore included. For data protection the incident ID recorded by the SFRS have been anonymised in Table 5 and are simply referred to as separate incidents (in column 2).

The data for injuries show that over these 11 incidents, there were 18 injured persons beyond the floor of fire origin. Of these, one was classified as a serious injury, seven were classified as slight injuries (requiring a hospital check-up or treatment), six were treated at the scene and four were given a precautionary check at the scene.

There was no further additional information, in these 30 reports of injury, that specifically referenced "cladding" so it could not be determined from the complete dataset whether cladding contributed towards any injury(ies). BRE Global concluded that it would not be normal practice for the SFRS to determine or provide an opinion on the contribution of any part of the building structure or its contents on reported injuries. In BRE Global's opinion it would also never be reasonable or appropriate for a SFRS incident commander, entering data on the IRS, to provide a personal opinion on likely cause of death at a fatal fire event as the Procurator Fiscal is responsible for considering such matters.

From the IRS data provided by SFRS, it can be concluded that there were no instances between April 2009 and April 2023, in which cladding was involved during a fatal fire event.

Q8.22 Options	Incident	Number of injuries	Q9.24 Injury details
Affecting more than 2 floors (not whole building)	1	1	First aid given at scene
	2	2	Precautionary check recommended
	3	1	Victim went to hospital, injuries Serious
Limited to 2 floors (not whole building)	4	1	Victim went to hospital, injuries Slight
Limited to floor of origin (not whole building)	5	2	Victim went to hospital, injuries Slight
	6	1	First aid given at scene
Null	7	3	First aid given at scene
	8	2	Victim went to hospital, injuries Slight
	9	2	First aid given at scene
Whole building	10	2	Precautionary check recommended
	11	1	Victim went to hospital, injuries Slight

Table 5: Injury incidents beyond the floor of fire origin involving "cladding"

Phase 2: Fire Investigation reports

FI reports supplied by SFRS

During Phase 1 a total 99 FI reports (covering 105 fatalities) were identified to be reviewed further to consider if there had been any occupant fatalities beyond the flat of fire origin.

The SFRS were unable to provide 22 reports (covering 22 fatalities). The reason as to why these were unavailable was due to the majority of these being completed by hand during the period from 2009 to 2011; these reports were not transferred across to the electronic system. Also, some of the reports were still active, i.e. not closed out. Additionally, SFRS have a ten-year retention schedule for FI reports and so some may well have been deleted permanently.

Additionally, the SFRS requested that a further 5 reports (covering 5 fatalities) be investigated as they may be of interest to the project, bringing the total number of FI reports for review to 82 reports (covering 88 fatalities). All of these reports were reviewed individually to extract the following key information:

- SFRS Incident ID and Time of call (to identify and confirm incident to be reviewed),
- Summary of where the fire originated and how far the fire spread,
- Location of where the fatality was found and identify whether this was beyond the "dwelling of fire origin",
- A search was made for any mention of the word "Clad" (to investigate whether the FI report stated that cladding had contributed towards fire spread).

Overview

During the review of the 82 FI reports (covering 88 fatalities), it was clear that, seven FI reports (covering seven fatalities), related to deaths which were not direct fire fatalities (around 8%). An example of this would be someone having a fatal heart attack and then there being a fire in the same dwelling.

During a previous study [2] investigating all domestic dwelling fire fatalities in Scotland (including houses), it was observed that 12 of 123 FI reports were not fire fatalities which is around 10%, similar to the levels reported in this study.

In one of the cases from this current study, the cause of death was reported as "Death in a fire following an explosion" in which the explosion took place in the void between two flats. This is not within the remit of this project, which is focused on fire spread beyond the flat of fire origin, so was excluded.

This resulted in 75 fire fatality reports, covering 81 fire fatalities, from which the following information was extracted and is presented in this section:

- where the fire originated,
- where the fire fatality(ies) was / were found,
- if cladding was considered to be a contributing factor to the fatalities.

There were clear differences between the "Extent of damage" data obtained from the IRS review compared with the same data from the FI reports. The reporting in IRS was often with damage extending beyond the room of flat of fire origin and this includes smoke and heat damage. For the review of FI reports, the extent of damage was limited to the spread of the fire only.

Fire Origin

Figure 3 details the number of fatalities and the location of fire origin.

A similar proportion of fires originated in the bedroom, kitchen and living room that in total accounted for 80% of all fire fatalities. Around 10% of the fires originated in the hallway and 6% of fires were set deliberately, all with pockets in multiple locations. There was one case of a fatality in a different flat to the flat of fire origin and this is explored in the Section **Fire fatality in flat next to flat of fire origin.**

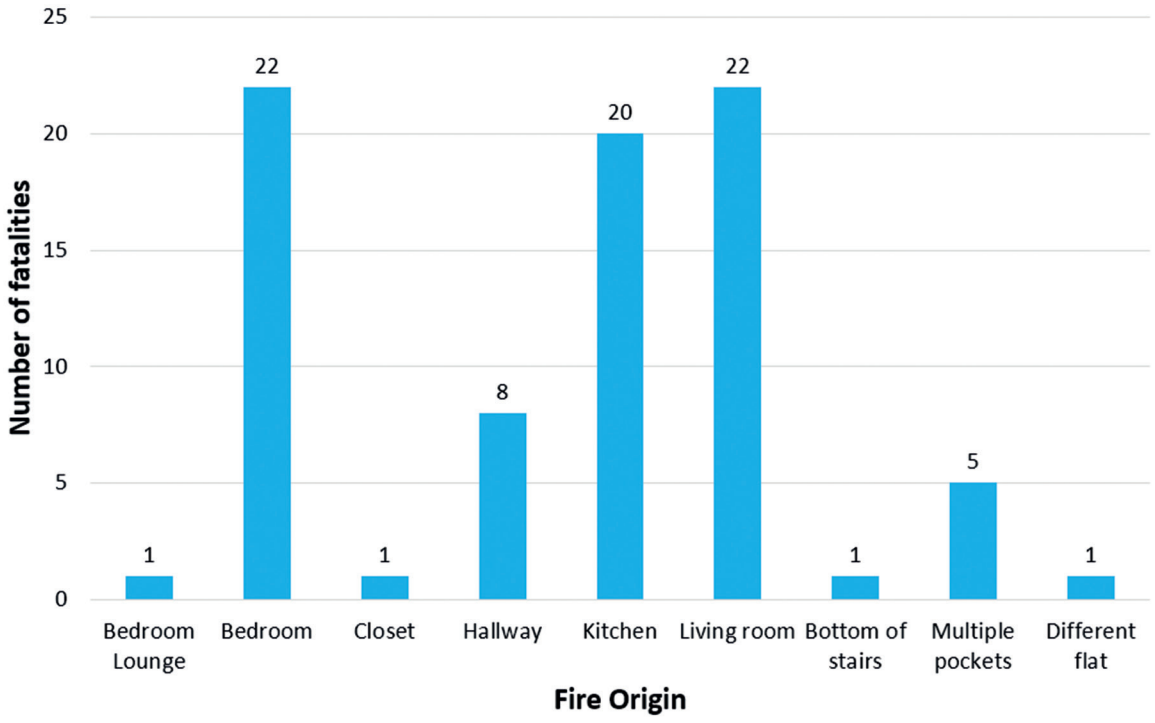

Figure 3: The fire origin and number of associated fatalities

Phase 2: Fire Investigation reports (continued)

Fire Fatality location

Figure 4 details the number of fatalities and the fatality location.

The greatest number of fire fatalities (42%) were in the bedroom, next was the living room (17%) and 15% took place in the hallway inside the flat as people attempted to escape through the front door. Only 10% of fire fatalities actually occurred in the kitchen, which is equal in number to those found in the bathroom. In BRE Global's opinion, it is reasonable to speculate that some of the 10% of fatalities, found in the bathroom, may have been attempting to put out flames.

In terms of the fire fatality location, 78 took place in the flat of fire origin, one took place in the common area of the flats, one in a different flat and one took place in the garden.

Fire fatality in flat next to flat of fire origin

There was one case of arson that led to a fire fatality in another flat. The resident X1 of flat X (on an upper storey) set multiple seats of fire before leaving their flat. The resident hoped that after the fire, the council would offer a replacement flat which better met their needs.

Sometime after the fires had been started, resident Y1 of flat Y, adjacent to flat X, became aware of the fire and called SFRS. Resident Y1 tried to escape but was unable to on account of a build-up of smoke in the communal area. Resident Y1 returned to Flat Y and shut the door but did not lock it.

When the SFRS arrived, they evacuated the building and commenced a search of flats X and Y. Resident Y1 was found deceased in Flat Y- he was middle aged with no history of a medical condition and was assessed as not being under the influence of drugs or alcohol.

Photos from the FI report indicate smoke staining on the walls of flat Y to be around shoulder level. The cause of death was recorded as inhalation of smoke and fire gases. Resident Y had a level of carboxyhaemoglobin of around 50%, indicating that the toxic gases had been inhaled during the fire.

The SFRS fire investigators believed resident Y, whilst trying to make an escape, left the flat door open. It is suspected by SFRS that smoke entered flat Y via the open front door during this attempted escape. It is not known whether resident Y1's exposure to the toxic smoke occurred whilst in the communal area or in Flat Y or both.

The SFRS fire investigators were contacted by BRE Global to discuss this case. The SFRS fire investigators were of the opinion, "had the deceased remained in their own flat, for the entire duration of the fire event (without attempting to escape) and instead followed SFRS advice to open windows and 'stay put', they believed this individual would likely not have died. The SFRS fire investigators reported there was no failure of compartmentation from the flat of fire origin to the flat in which the fire fatality occurred at the time the fatality was recovered.

Nobody was hurt when the flat later collapsed as, by this time, the building had already been evacuated. The fire/smoke spread leading to the fatality was internal to the building and therefore not related to the external cladding.

Incidents involving cladding

For all 81 FI reports reviewed, there were no cases where the cladding contributed to the spread of the fire beyond the flat of fire origin and in 80 there was no mention of cladding at all. In one of these cases the window and the guttering of the flat above the flat of fire origin were heat and smoke damaged, but no mention was made to any cladding.

In the single case where cladding was mentioned, this was limited to heat and smoke damage that affected the exterior cladding around another flat's windows.

In these two cases in which the heat and smoke damage extended beyond the flat of origin, this level of damage is reasonably foreseeable as, during flashover, windows do fail. This permits fire to spread outside the compartment and potentially result in damage to the floor directly above. In both these cases, timely firefighting interventions prevented further damage and brought the fire under control.

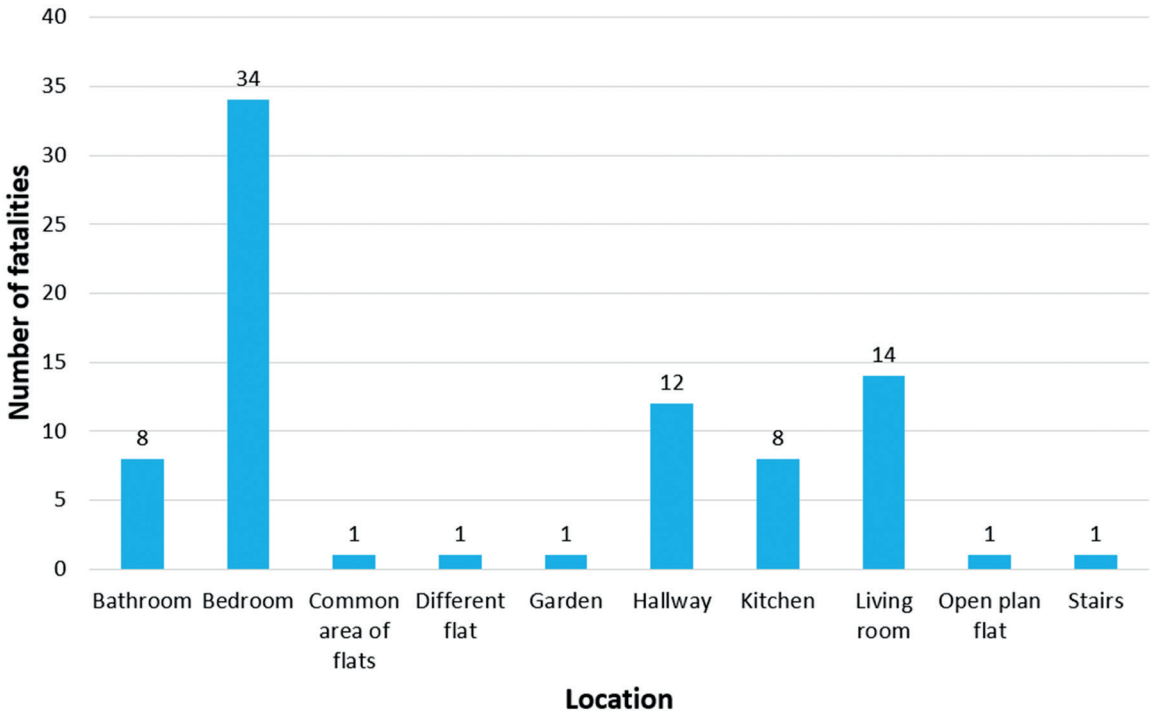

Figure 4: The fire location and number of associated fatalities

Conclusion

A review was performed, using data supplied by SFRS from the IRS, of 57,325 fatal and non-fatal incidents over the 14-year period from 01/04/2009 to 24/04/2023 for specific building types. Over that period, there were 291 fatalities and the data from these incidents were analysed further to investigate whether any of the fires involving external cladding were also fatal fires. Information was also gathered on other information about all the fires: including fatalities, injuries, property types and the extent of damage.

From the data provided, it can be concluded that (over the 14-year period in Scotland) there were no fatal fires that were recorded by the SFRS as having involved external cladding.

Of the 291 fire fatalities associated with the buildings covered in this study, 166 were not analysed further, as they were in the same dwelling or outside the building or otherwise not applicable. Of the remaining 125 fatalities of interest, those where the fatality was in the room, cabin or compartment of origin, incidents outside the building and some that were not applicable were also excluded from further analysis (20 incidents). This left 105 fatalities, detailed in 99 FI reports, that remained of interest - seven occurred beyond the floor of origin, 82 were on the floor of origin and 16 were not clear but required further investigation.

Of the 99 FI reports (covering the 105 fatalities) requested, 75 FI reports (covering 81 Fire fatalities) were reviewed. The FI reports (covering 24 fatalities) were excluded from the study either because they were not available or because the fatalities were not direct fire fatalities.

It was observed that, for fatal fires, the majority (80%) originated in one of three key areas - the bedroom, kitchen or living room. Most fatalities occurred in the bedroom (42%) with 15% taking place in the hallway inside the flat as people tried to escape the flat and 10% in the bathroom.

There was only one case of a fatality in a flat beyond the flat of fire origin, which in the opinion of the SFRS would likely not have occurred if the "stay put" policy had been followed.

There was no evidence in the 75 FI reports that external cladding had contributed to the spread of fire beyond the flat of fire origin or contributed to the spread of fire beyond the flat of fire origin.

References

[1] Incident Recording System – Questions and Lists (Version 1.6) July 2012. Department for Communities and Local Government: London https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/11806/Incident_Recording_System_-_Questions_and_Lists_-_Version_1.6_-__XML_Schemas_v1-0p__in_use_from_April_2012.pdf Retrieved 1 December 2025.

[2] Fire fatalities in Scotland and recommendations to help reduce them- Final Phase: Review of Fire Investigation Reports, Raman Chagger, December 2020. Available from: https://www.bregroup.com/firesafetyresearch Retrieved 1 December 2025.

BRE Group
Watford, Herts
WD25 9XX

T +44 (0)333 321 8811
E enquiries@bregroup.com
W www.bregroup.com

PDF copies of this publication are available from:
https://www.bregroup.com/firesafetyresearch