



FIRE SAFETY

SPRINKLER STRATEGY

FOR EXISTING HMO's,

SHELTERED ACCOMODATION,

and HIGH-RISK BLOCKS OF FLATS

2018 v1.1



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Section 1.0

Introduction

On 14th June 2017 a terrible and horrific tragedy unfolded at the Grenfell Tower in London, as a catastrophic fire spread rapidly across and through the general needs high rise block of flats, London Fire Brigade reported:

- 71 fire-related fatalities
- 109 non-fatal casualties, of which:
 - 67 were 'hospital severe'
 - 10 were 'hospital slight'
 - 1 required 'first aid' and;
 - 31 had 'precautionary checks'. (*Appendix 4.0*)

The Grenfell Tower Inquiry held its first hearing on 14 September 2017, and evidential hearings started in October 2017. Police and fire services believe the fire started accidentally in a fridge-freezer on the fourth floor and the rapid growth of the fire is thought to have been accelerated by the building's exterior cladding, which is of a common type in widespread use. The Public Inquiry commenced in May 2018 and is expected to last until November 2018.

Towards the end of 2017 a new guidance document was published specifically for Specialised Housing (unrelated to the above incident) but this included for the first-time specific further advice and guidance on Sheltered Accommodation and Supported living accommodation. (*See Appendix 1.0*).

This guidance document provided a new focus on the following key areas which were:

- Compartmentation in Roof Voids
- Provision of Extinguishers
- A new Person-Centred Risk Assessment Approach.

Within the new guidance document recommendations are also made for sprinkler installations to be included within all new Sheltered and Supported housing developments. However, no provision is made for retrofitting Sprinkler installations into existing housing schemes.

In May 2018 Dame Judith Hackitt published the Independent Review of Building Regulations and Fire Safety (*See Appendix 2.0*) which was quickly followed by a full day seminar with industry key-note speakers at the Fire Service College, to provide further insight and clarification of the content of the review document on 23rd June 2018.



At the above seminar the British Automatic Fire Sprinkler Association (bafsa) re issued a report from the sprinkler coordination group called “Safer High Rise; The Callow Mount Sprinkler Retrofit Project” (See Appendix 3.0). This report provided a detailed insight into the retrofitting of sprinklers to the Callow Mount High Rise General needs block.

On 16th & 17th July there was also an Advanced Fire Risk Assessment Course held by the Fire Protection Association which provided further consolidation of the above reports and current issues.

Purpose

Epping Forest District Council (EFDC) have always considered Houses of Multiple Occupants (HMO's), Sheltered Accommodation, and High-Rise flats as “High Risk” with specific regards to fire risk assessment, and the level of both active and passive fire protection systems installed.

However, following the Grenfell tragedy, the Hackitt Report and Specialised Housing Guide, EFDC felt that further investigation into and the analysis of the potential benefits of retrofitting sprinkler systems into the above premises warranted further consideration.

The purpose of this document is to provide a technical report that is clear and easily understandable that can be used to inform EFDC of relevant options and considerations for the retrofitting of sprinkler installations in HMO's, Sheltered, and High-Risk Blocks of Flats.

Scope

The scope of this report applies to the following Epping Forest District Council (EFDC) locations:

- | | |
|-------------------|--|
| • HMOs | Norway and Hemnall House, |
| • SHELTERED | Buckhurst Court, Chapel Road, Frank Bretton House; Hyde Mead House; Jessop Court; Jubilee Court; Leonard Davis House; Parsonage Court. |
| • HIGH RISK FLATS | Highwood Lane, Hilltop Court |



Section 2.0

Legislative Requirements & Relevant Guidance

This section of document outlines the basic fire safety legislation requirements, making direct reference to the legislation itself and/or reference to any relevant guidance.

Whilst the remainder of this section will focus on legislative requirements, the fundamental principle upon which fire safety legislation is based, is that of the protection of life.

When considering fire safety requirements, the overarching principle should commence with requirements for the protection of Life Safety first.

In the event that a fire safety offence has been committed, a successful prosecution can lead to minor penalties of up to £5,000. Major penalties can have unlimited fines and up to 2 years in prison.

Therefore, this section has been broken down into the following parts, for ease of reading and understanding:

- 2.1. UK law overview,
- 2.2. Approved codes of practise,
- 2.3. British standards,
- 2.4. Building Regulations,
- 2.5. Management of fire safety,
- 2.6. Relevance of Sprinkler Installations.

2.1. UK law overview

UK legislation can take the form of Acts (passed by the Parliament) or Statutory Instruments, made under the authority of an Act of Parliament by either a minister or by the Queen-in-Council.

A statutory instrument (SI) is the principal form in which “delegated” legislation is made in Great Britain.

Regulatory Reform Orders are a reform legislation which has the effect of imposing regulations, with a view to removing or reducing the regulatory burdens.

In the UK, the health and safety and fire safety legislation requirements unfold in several levels (Approved Codes of Practice, Guidance), some of which then also become best practices (not legal requirements).

- Regulatory Reform (Fire Safety) Order 2005
- Housing Act 2004
- Building Regulations 2010.



Fire Safety Law references

Full name	Abbreviation	Content
Regulatory Reform (Fire Safety) Order 2005, England and Wales	RRO 2005	http://www.legislation.gov.uk/ukxi/2005/1541/contents/made
Fire Safety (Employees' Capabilities) (England) Regulations 2010		<p>The implementation this regulation was purely a technical wording exercise to make sure some wording was added back in to the Fire Safety Order that got omitted first time round in 2006. It has not imposed any additional requirements on businesses</p> <p>The additional bit of regulation is a couple of lines long, and states employers have to think about what a worker is able and unable to do when giving them tasks and how these capabilities may affect their ability to deal with fire-related risk</p> <p>http://www.legislation.gov.uk/ukxi/2010/471/contents/made</p>

2.2. Approved Codes of Practice (ACOPs)

ACOPs describe preferred or recommended methods that can be used (or standards to be met) to comply with regulations and the duties imposed by the Fire Safety Order.

ACOPs provide flexibility to cope with innovation and technological change without a lowering of standards.

Each ACOP is approved with the consent of the Secretary of State. It gives practical advice on how to comply with the law. If you follow the advice, you will be doing enough to comply with the law in respect of those specific matters on which the Code gives advice. You may use alternative methods to those set out in the Code in order to comply with the law.

However, the Code has a special legal status. If you are prosecuted for breach of health and safety or fire safety law, and it is proved that you did not follow the relevant provisions of the Code, you will need to show that you have complied with the law in some other way or a Court will find you at fault.



Guidance for Fire Safety

The guidance documents for Fire Safety for Residential Accommodation is as follows:

Full name	Abbreviation	Content
DCLG sleeping accommodation guide	DCLG sleeping accommodation guide	https://www.gov.uk/government/publications/fire-safety-risk-assessment-sleeping-accommodation
Local Government Association Purpose-built flats guide	Fire safety in purpose-built flats	https://www.local.gov.uk/fire-safety-purpose-built-flats
HOUSING – FIRE SAFETY Guidance on fire safety provisions for certain types of existing housing	LACoRS guide	https://www.rla.org.uk/docs/LACORSFSguideApril62009.PDF
Fire Safety in Specialised Housing Guide 2017	NFCC Specialised Housing Guide	https://www.nationalfirechiefs.org.uk/write/MediaUploads/NFCC%20Guidance%20publications/NFCC_Specialised_Housing_Guidance_-_Copy.pdf



2.3. British Standards

British Standards are the standards produced by BSI Group which is incorporated under a Royal Charter (and which is formally designated as the National Standards Body (NSB) for the UK). The application of standards is voluntary, unless required by legislation or as ... “As a code of practice” as stated above. For fire safety such codes are defined below:

British Standards and Codes of Practice; Specifically relating to fire safety for Sprinkler Installations

Full name	Abbreviation	Content
Code of practise in the design, management and use of residential buildings.	BS 9991:2011	Offers guidance to those designing or refurbishing buildings and is largely based on fire safety engineering principles.
Fire sprinkler systems for domestic and residential occupancies. Code of practice	BS 9251:2014	Gives recommendations for the design, installation, components, water supplies and backflow protection, commissioning, maintenance and testing of fire sprinkler systems in domestic and residential occupancies. These systems are primarily intended for the protection of life in case of fire and have additional benefits for property protection, environmental protection, sustainability of buildings and continuity of use, and firefighter safety.
Fixed fire protection systems. Residential and domestic watermist systems. Code of practice for design and installation	BS 8458:2015	Fixed fire protection systems. Residential and domestic watermist systems. Code of practice for design and installation
Code of practice for fire safety in the design, management and use of buildings	BS 9999:2017	BS 9999 gives recommendations and guidance on the design, management and use of buildings to achieve reasonable standards of fire safety for all people in and around them. It also provides guidance on the on-going management of fire safety within a building throughout its entire life cycle, including guidance for designers to ensure that the overall design of a building assists and enhances the management of fire safety.
Fixed firefighting systems. Automatic sprinkler systems. Design, installation and maintenance	BS EN 12845:2015	The guidance given in BS EN 12845 helps ensure that sprinkler systems function as intended throughout their lifecycle and contribute towards the protection of life. The standard covers the classification of hazards, provision of water supplies, components to be used, installation and testing systems, plus the maintenance and the extension of existing systems. It also identifies construction details of buildings which are the minimum necessary for satisfactory performance of sprinkler systems complying with this standard.



2.4. Design and Structure of the Building

Fire safety legislation has a significant impact on the design and structure of buildings and on working practices.

The Building Regulations - typically implemented through adherence to the guidance provided in Approved Document B to the Building Regulations in England and Wales - apply in new build, extensions to an existing building or a 'material' change of use.

These control the design, layout, construction materials and separation of buildings so as to limit fire spread by creating fire-resisting compartments and ensuring that people within the building are made aware that there is a fire and are able to make their way to a place of safety without becoming casualties of the fire.

The requirements for fire compartments including location, size and nominal fire resistance periods in existing buildings will typically have been arrived at so as to achieve compliance with the Building Regulations.

These requirements will therefore normally be minimum requirements in order to ensure that the building is acceptably safe, as far as the building occupants are concerned - i.e. the fire will be contained sufficiently long to enable occupants to safely leave the building in the event of fire.

Building Regulations play a key part in fire safety for EFDC properties as:

- EFDC Need to be alert to material alterations made in premises,
- Residents need to be aware that they cannot affect alterations without EFDC consent,
- Common classic contraventions as identified by fire risk assessments are internal doors and flat entrance doors,
- Material alterations can compromise/damage to compartmentation, which is fundamental to the fire strategy in most EFDC premises.

2.5. Management of Fire Safety

The Regulatory Reform (Fire Safety) Order 2005 places the emphasis on fire safety on fire prevention and reducing the risk of fire.

The Fire Safety Order differs from previous workplace related regulation in that there is no distinction made between people who are employees and members of the public. It also includes people who have a disability and anyone who needs special assistance to enable them to make their escape in the event of fire.

Risk assessment is now the norm for dealing with the prevention of all types of accidents. This highlights a move away from the use of clear prescriptive rules, to an approach where aspects of health and safety are performance based.

Responsibility is transferred from officials to a particular individual within each company - the 'responsible person'.



The overall requirement is that the risk to people from fire in buildings should be as low as reasonably practicable.

The transfer from firefighting and fire protection in the event of fire towards fire prevention has also put considerable emphasis on identifying how fires start, both accidentally and deliberately. It is possible to have a high fire load present but to reduce the risk of fire to an acceptably low level by ensuring that measures are in place to minimise the probability of an ignition source being present.

There is rigorous enforcement of the regulations within England at present specifically in relation to fire safety risk assessments and making sure that they are “suitable and sufficient”, completed by a competent person, and regularly reviewed. Prosecutions have been successful following enforcement where reviews have not been carried out following a change to the business or operation.

The Regulatory Reform (Fire Safety) Order covers the following key areas at EFDC:

- ✓ Premises
- ✓ Fire Safety Duties
- ✓ Responsible Persons
- ✓ Risk Assessment
- ✓ Relevant Persons
- ✓ General Fire Precautions

The scope of the fire safety order within EFDC properties contained within this report and applies to:

- Common circulation areas (corridors/stairways)
- Communal facilities (e.g. lounges), other than in certain shared houses
- Workplaces (e.g. offices, staff sleepover rooms, etc.)
- Non-domestic ancillary facilities (e.g. laundries, plant rooms)
- Doors/walls between residents' accommodation and common parts
- Monitored smoke detection (in at least hallways) of sheltered /extra care flats
- AFD throughout supported housing (other than shared house)
- Possibly, common roof voids (e.g. where compartmentation supports stay put)

General Fire Precautions apply to:

- Measures to reduce risk of fire and fire spread
- Means of Escape
- Measures for securing that means of escape can be safely and effectively used
- Means for fighting fires
- Means for detecting and giving warning
- Action to be taken in event of fire - training - instruction - procedures
- Maintenance (including measures for FRS)



2.6. Relevance of Sprinkler Installations

With regards to the specific consideration of Sprinkler installations for EFDC properties concerned in this report, the new Fire Safety Guide for Specialized Housing is the main focal point.

Recommendations made within the guidance document form two key parts:

- New Premises *(as covered in section 12.8)*
There is also considerable potential for major reduction in risk by installation of automatic fire suppression systems. Although not required for compliance with building regulations in England, this guide strongly recommends the provision of sprinkler or watermist protection for all new sheltered and extra care housing.

It may also be appropriate to consider sprinkler or watermist protection of certain supported housing, in which there may be difficulties in evacuation of residents.

- Existing Premises *(as covered in section 12.9)*
While it is not suggested that sprinkler or watermist protection should be retro-fitted in all existing specialised housing, it may sometimes be appropriate to consider this measure, or to consider personal protection watermist systems, comprising localised fire suppression within a flat of a highly vulnerable resident, so enabling the resident to continue to live safely in their own accommodation.



Section 3.0

Summary of Risk (Current Locations)

In considering the relevance of retrofitting sprinklers (or similar suppression systems) into EFDC premises it is important to understand the risk to life.

General Needs (Appendix 4.0/5.0).

Due to the exceptional circumstances after the Grenfell Tower fire, and the need for timely and appropriate statistics, independent Home Office statisticians produced an ad hoc statistical release focusing on fires, fire-related fatalities and non-fatal casualties in purpose built high-rise flats, the following data has been extracted from these reports:

Definition of purpose-built flats

The IRS includes a field for property type, with categories for purpose-built flats as follows:

Purpose-built flat/maisonette:

- Up to 3 storeys
- 4 to 9 storeys
- 10 storeys or more

Number of fires

Of the 30,296 dwelling fires attended by fire and rescue services in England in 2016/17 around three-quarters (75%) of dwelling fires attended by fire and rescue services (FRSs) were in houses, bungalows, converted flats and other properties and a quarter (25%) were in purpose-built flats. Of these,

- 16% were in purpose-built low-rise flats (1 to 3 storeys);
- 6% in purpose-built medium-rise flats (4 to 9 storeys) and
- 2% per cent were in purpose-built high-rise flats (10 storeys or more).

Table 2.1 Number of dwelling fires attended by FRSs by dwelling type, England, 2009/10 to 2016/17

Number of dwelling fires	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
House, bungalow, converted flat, other	28,512	27,166	26,155	24,931	24,107	23,651	23,647	22,840
Purpose Built Flat - 1 to 3 storeys	6,447	6,324	6,111	5,490	5,050	5,015	5,095	4,894
Purpose Built Flat - 4 to 9 storeys	2,156	2,102	2,072	2,013	1,943	1,894	1,878	1,848
Purpose Built Flat - 10 storeys or more	1,261	1,003	1,063	845	799	772	757	714

Non-fatal casualties

There were 139 non-fatal casualties in fires in purpose-built high-rise flats (defined as 10 storeys or more) in England in 2016/17, compared with 214 in 2009/10 (a decrease of 35%). It should be noted that a casualty includes people not requiring hospital treatment (e.g. given first aid at scene or precautionary checks recommended).



Table 3.1 Number of non-fatal casualties in dwelling fires attended by FRSs, by dwelling type, England, 2009/10 to 2016/17

Number of non-fatal casualties	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
House, bungalow, converted flat, other	4,576	5,318	5,329	5,003	4,582	4,388	4,256	3,968
Purpose Built Flat - 1 to 3 storeys	1,274	1,504	1,344	1,208	1,044	1,061	1,052	951
Purpose Built Flat - 4 to 9 storeys	371	424	395	353	338	334	298	300
Purpose Built Flat - 10 storeys or more	214	252	237	177	156	140	157	139

There were 63 non-fatal casualties requiring hospital treatment from fires in purpose-built high-rise flats in 2016/17. This figure was 87 in 2009/10.

Table 3.2 Number of non-fatal casualties needing hospital treatment in dwelling fires attended by FRSs, by dwelling type, England, 2009/10 to 2016/17

Number of hospitalised casualties	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
House, bungalow, converted flat, other	2,041	2,412	2,416	2,206	1,956	1,829	1,723	1,658
Purpose Built Flat - 1 to 3 storeys	600	673	590	549	469	437	461	381
Purpose Built Flat - 4 to 9 storeys	213	218	165	174	182	144	130	175
Purpose Built Flat - 10 storeys or more	87	90	100	65	57	66	67	63

It is possible to calculate the percentage of fires involving casualties in different types of dwellings. In 2016/17, there were non-fatal casualties requiring hospital treatment in 6.9 per cent of fires in both medium- and high-rise dwellings and 6.5 per cent in low-rise dwellings, compared with 5.7 per cent of fires in houses, bungalows, converted flats and other properties.

Table 3.3 Percentage of dwelling fires attended by FRSs with a casualty requiring hospital treatment, by dwelling type, England, 2016/17

	House, bungalow, converted flat, other	Purpose Built Flat - 1 to 3 storeys	Purpose Built Flat - 4 to 9 storeys	Purpose Built Flat - 10 storeys or more
Number of dwelling fires	22,840	4,894	1,848	714
Number of fires with casualty requiring hospital treatment	1,301	320	127	49
Percentage of fires with casualty requiring hospital treatment	5.7%	6.5%	6.9%	6.9%



Fire-related fatalities

There were three fire-related fatalities in high-rise purpose-built flats (defined as 10 storeys or more) in England in 2016/17. In 2009/10, this figure was 12. It should be noted the number of fire-related fatalities fluctuates year-on-year due to the relatively low numbers

Table 3.4 Number of fire-related fatalities in dwelling fires attended by FRSs, by dwelling type, England, 2009/10 to 2016/17

Number of fire-related fatalities	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
House, bungalow, converted flat, other	197	195	195	178	174	156	185	168
Purpose Built Flat - 1 to 3 storeys	36	38	22	20	30	27	32	27
Purpose Built Flat - 4 to 9 storeys	12	12	7	8	10	8	9	15
Purpose Built Flat - 10 storeys or more	12	10	10	3	2	4	3	3

In 2016/17, three of the 714 fires in high-rise purpose-built flats had fire-related fatalities (0.4%) compared with 0.8% of fires in medium-rise flats, 0.6% of fires in low-rise flats, and 0.7% of fires in houses, bungalows, converted flats and other dwellings.

Table 3.5 Percentage of dwelling fires attended by FRSs with a fire-related fatality, by dwelling type, England, 2016/17

	House, bungalow, converted flat, other	Purpose Built Flat - 1 to 3 storeys	Purpose Built Flat - 4 to 9 storeys	Purpose Built Flat - 10 storeys or more
Number of dwelling fires	22,840	4,894	1,848	714
Number of fires with fatality	151	27	14	3
Percentage of fires with fatality	0.7%	0.6%	0.8%	0.4%



National Fire Statistics (To Dec 2017) (Appendix 4.0)

Of the 30,340 primary dwelling fires attended by FRSs in England in the year ending December 2017, three-quarters (75%) were in houses, bungalows, converted flats and Other properties whilst a quarter (25%) were in purpose-built flats.

Of those fires in purpose-built flats, 16 per cent were in purpose-built low-rise flats; seven per cent were in purpose-built medium-rise flats and two per cent were in purpose-built high-rise flats.

FRSs attended 746 fires in purpose-built high-rise flats in England in the year ending December 2017; less than one per cent fewer than in the year ending December 2016 (747) but 41 per cent fewer than in 2009/10 (1,261).

There were 73 fire-related fatalities in purpose-built high-rise flats (defined as ten storeys or more) in England in the year ending December 2017. In the previous year, this figure was six. The year ending December 2017 figure includes 71 fire-related fatalities from the Grenfell Tower fire.

In the year ending December 2017 there were three fires which resulted in a fatality out of the 746 fires in purpose-built high-rise flats (0.4%). This compares with six fires with a fatality out of the 747 fires in purpose-built high-rise flats (0.8%) in the year ending December 2016.

Table 4.1 Percentage of dwelling fires attended by FRSs with a fire-related fatality, by dwelling type, England; year ending December 2017

	House, bungalow, converted flat, other	Purpose-built flat – 1 to 3 storeys	Purpose-built flat – 4 to 9 storeys	Purpose-built flat – 10 storeys or more
Number of dwelling fires	22,699	4,919	1,976	746
Number of fires with a fatality	132	27	7	3
Percentage of fires with a fatality	0.6%	0.5%	0.4%	0.4%

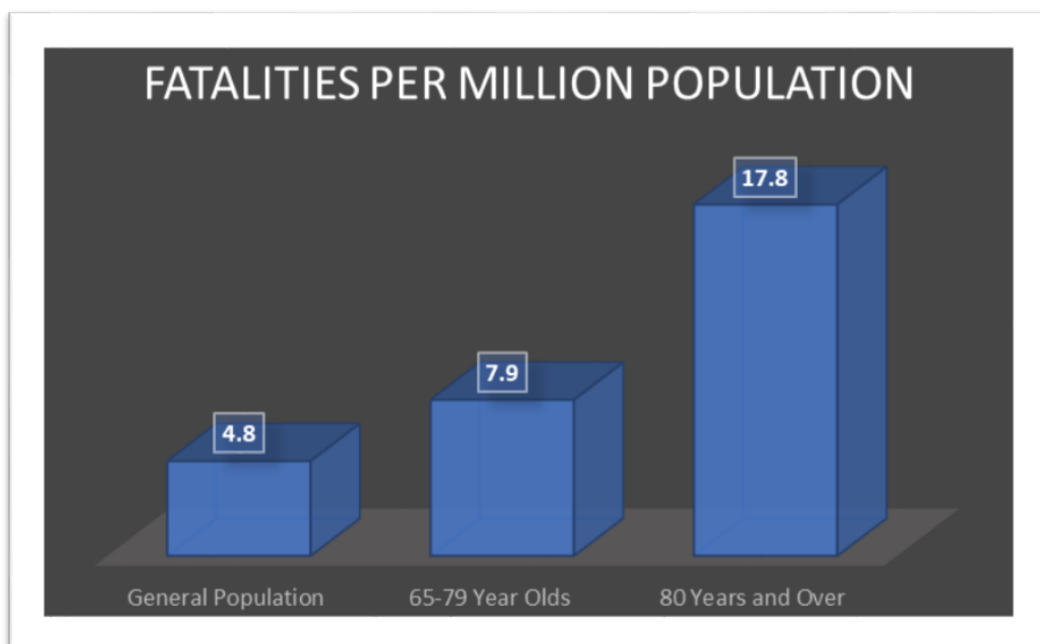


Specialised Housing (i.e. Sheltered and HMO Accommodation) (Appendix 1.0).

The new Fire Safety Guide for Specialized Housing provides the following information on risk.

“The demographic change in sheltered housing population has inevitably resulted in an increase in the occurrence of mobility difficulties, reduced sensory capability and cognitive difficulties, all of which bring about greater risk from fire, both in terms of the likelihood of fire and vulnerability in the event of fire” (Page 4).

“Most deaths from fire occur in dwellings; a disproportionate number of such deaths from fire occur in blocks of flats and multiple occupancy dwellings. Those living in specialised housing can be amongst the most vulnerable to hazards such as fires” (Page 5).



National fire statistics (2015/2016) conclude that:

- Vulnerable residents are at high risk
- Stay put is generally safe (Please refer to section 4 for further commentary on this issue)
- Those who die are, very often, directly involved in the fire
- Justification for high level of monitored smoke/heat detection
- Fire suppression for all new sheltered/extra care and high risk supported housing
- Detection/suppression may not save resident in room of origin
- Need for person-centred approach for high risk residents
- High reliance placed on fire prevention
- Possible need for personal protection water mist systems for extreme cases



Following the Judith Hackitt Review, the National Fire Chief Council(NFCC) advised that whilst the Hackitt Review specifically focussed on general needs blocks of 10 storeys or more, the NFCC considers that any general needs of 6 storeys or more, plus any residential premises that contain the most vulnerable persons in society should be deemed “High Risk”.

As such EFDC HMO's and Sheltered Accommodation would fall within this definition.

EFDC Property Type and Use

For the purpose of this report, three types of property are relevant to consideration for sprinkler retrofitting as follows:

Property Use	Details	Vulnerability of Residents
Sheltered Accommodation	Buckhurst Court, Chapel Road, Frank Bretton House; Hyde Mead House; Jessop Court; Jubilee Court; Leonard Davis House; Parsonage Court.	High
Houses of Multiple Occupation (HMOs)	Norway and Hemnall House	Mixed
High Rise Blocks of Flats	Highwood Lane, Hilltop Court	Mixed



Summary of Evacuation Strategy Implications

Sheltered Scheme Considerations

- In EFDC the limitations of the residents are taken into account when undertaking assessments in sheltered schemes, and any particular concerns resulting from the vulnerability of any residents. These tenants are therefore potentially “at risk” and as such have been placed on an “at risk” register. The register is held by the Scheme Manager, and a copy is kept in the GERDA premises information box, inside the front entrance for Fire and Rescue Service information.
- The approach to risk assessing EFDC sheltered schemes is based on the assumption that residents are able to escape unaided from their own flats and can make their way to a place of safety using the common means of escape.
- EFDC Sheltered housing schemes vary in respect of size, design, use and complexity. They generally form part of complexes that may provide communal facilities such as kitchens, laundry rooms, communal lounges and Scheme Managers; who may attend site Monday to Fridays 09.00am – 17.00pm.
- Although some schemes still have an on-site scheme manager (Mon-Fri), they also rely on the Lifeline on-call system to provide support to residents.
- Therefore, in most cases there is limited day-time cover and no management presence during the night to provide any assistance to the residents in the event of a fire.
- Sheltered schemes are designed and constructed on similar lines to purpose-built blocks of flats, with compartment walls and floors and protected escape routes. *Ref: **

Epping Forest District Council operates a “NO STAY PUT” policy. Therefore, a policy of simultaneous evacuation exists. However, it is recognised that there are some residents who due to poor health/mobility/impairment problems cannot leave their flat and therefore cannot evacuate the building.

Perceived Risk Areas

Area	Details	Perceived Risk
Resident Evacuation	Vulnerability of residents reducing ability to escape unaided from their own flats and can make their way to a place of safety using the common means of escape	High
Resident Likelihood of Accidentally Starting a Fire	Likelihood of residents accidentally starting a fire in their own apartment	High
Compartmentation	Issues with fire breaks within the roof voids not extending from flats underneath to full height of roof	High



Houses of Multiple Occupation (HMO) Considerations

- In EFDC the limitations of the residents within HMO's are taken into account when undertaking assessments, and any particular concerns resulting from the vulnerability of any residents. It is recognised that the residents in these schemes may have a wide variety of issues and the majority of residents are placed into these schemes on a temporary basis until such time as more suitable permanent accommodation can be found.
- The approach to risk assessing EFDC sheltered schemes is based on the assumption that residents are able to escape unaided from their own flats/rooms and can make their way to a place of safety using the common means of escape.

Norway House

- Norway House is a building of 1, 2 and 3 floors, consisting of a ground floor central area of single and double height, and an East and West wings of three floors, and contains 38 single unfurnished rooms, plus facilities for bathing and ablutions, cooking and laundry.
- The ground floor incorporates a lounge area, communal kitchen, caretaker workshop and a Housing Dept office. The building is able to accommodate up to 50 families on a short-term basis.
- The premises are covered by an automatic fire alarm system (Heat and smoke), and the fire alarm system is linked into Tunstall system, on activation Careline will call the fire service.
- Staff are on site Housing Office hours are 09.00 - 17.00 Mon. to Fri. and 09.00 - 11.00 on Sat.
- A Simultaneous Evacuation Policy is in place on this site.

Hemnall House

- Hemnall House is a building of one and two floors, formerly a Cottage Hospital, providing temporary accommodation in 9 self-contained flats (Accommodation approx 20 persons in total).
- The ground floor accommodates a central corridor accessing seven self-contained flats and a laundry room.
- The first floor is contained within a Mansard type roof construction and accommodates two self-contained flats. The basement area houses the boiler for the premises.
- The premises are covered by an automatic fire alarm system (Heat and smoke), and the fire alarm system is linked into Tunstall system, on activation Careline will call the fire service.
- No staff employed in these premises, however, management at Norway House regularly attend Hemnall House.
- A Simultaneous Evacuation Policy is in place on this site.



Perceived Risk Areas

Area	Details	Perceived Risk
Resident Evacuation	Vulnerability of residents reducing ability to escape unaided from their own flats and can make their way to a place of safety using the common means of escape	High
Resident Likelihood of Accidentally or deliberately Starting a Fire	Likelihood of residents accidentally or deliberately starting a fire	High
Compartmentation	Issues with fire breaks within the roof voids not extending from flats underneath to full height of roof	High



General Needs Flats Considerations

Highwood Lane (4 floors) and Hilltop Court (4 floors) are the two highest blocks of general needs flats within EFDC. Whilst it is noted that both blocks fall below the definition of “High Risk” within the Hackitt Review; 10 Storeys or NFCC; 6 Storeys, EFDC have included these premises within the scope of this report.

In EFDC the approach to risk assessing EFDC General Needs high rise is based on the assumption that residents are able to escape unaided from their own flats and can make their way to a place of safety using the common means of escape.

A Stay Put Policy is in place within all EFDC Blocks of flats, which means that:

- When a fire occurs within a flat, the occupants alert others in the flat, make their way out of the building and summon the fire and rescue service.
- If a fire starts in the common parts, anyone in these areas makes their way out of the building and summons the fire and rescue service.
- All other residents not directly affected by the fire would be expected to ‘stay put’ and remain in their flat unless directed to leave by the fire and rescue service.
- It is not implied that those not directly involved who wish to leave the building should be prevented from doing so.
- Nor does this preclude those evacuating a flat that is on fire from alerting their neighbours, so that they can also escape if they feel threatened.
- As we have seen with the Grenfell Tower incident, this policy is being brought into question.
- Until investigations are completed, and advice is provided from the Essex fire and rescue services, the Stay Put policy is recognised and accepted.
- However, residents may wish to evacuate instead of remaining within their flats and should not be prevented from doing so.

Perceived Risk Areas

Area	Details	Perceived Risk
Resident Evacuation	Vulnerability of residents reducing ability to escape unaided from their own flats and can make their way to a place of safety using the common means of escape	High
Resident Likelihood of Accidentally or deliberately Starting a Fire	Likelihood of residents accidentally or deliberately starting a fire	High
Arson	Likelihood of deliberate fire being started	Possible



Section 5.0

Options for Consideration

It should be noted that the premises covered as part of this report currently present a very good record of fire safety and no fires have been reported in all the EFDC Sheltered Schemes, or within the High-rise blocks.

Within the latest Guidance documents all premises would fall outside of the scope of the current Hackitt Review document, whilst both Sheltered and HMO Accommodation will fall under the NFCC definition of “Higher Risk” premises as they both contain vulnerable persons.

EFDC do have records of fire related incidents; specifically, in relation to cooking at Norway House.

EFDC Sheltered Accommodation premises benefit from a high level of active and passive fire protection measures including 24/7 monitoring via the Careline system.

EFDC HMO at Norway House also benefit from a high level of active and passive fire protection measures including onsite staffing Mon-Fri. Hemnall House is supported remotely from Norway House Office.

Some EFDC Residential care premises present unique challenges in relation to fire safety, largely because some residents may need help to escape. In addition, some premises may also present issues with compartmentation which will have a direct correlation with the spread of smoke and flame in the event of a fire related incident.

Therefore, in evaluating the potential risk and therefore the benefit of installing sprinkler systems the following table shows the evaluation of premises containing requiring evacuation assistance v's compartmentation issues:

<i>Residents Require Assistance to evacuate</i>		Roof Void Surveys Recommended: Buckhurst Court, Chapel Road, Frank Bretton House; Hyde Mead House; Jessop Court; Jubilee Court; Leonard Davis House; Parsonage Court.	
<i>Mixed Use</i>	Norway House, Highwood Lane, Hilltop Court		Hemnall House
<i>Majority of Residents able to Escape Unaided</i>			
	<i>Solid Compartmentation</i>	<i>Possible Compartmentation issues</i>	<i>Compartmentation Issues</i>



EFDC Residential care premises present some unique challenges in relation to fire safety, largely because some residents may need help to escape. Currently fire safety guidance in England and Wales does not address this fully;

- where residents require assistance, it is likely that the evacuation process will take longer and sprinklers provide significant benefits to address this risk;
- England and Wales are among the few countries where the official fire safety design guidance does not recommend automatic fire suppression in residential care premises. The fire safety guidance documents for Scotland, USA, Hong Kong and Australia all recommend automatic fire suppression and recognise the benefits in terms of life safety and property protection;
- research undertaken in the USA concludes that sprinklers are considered to be the single most effective fire protection feature and it notes that there has never been a multiple-death fire in a fully sprinklered nursing home;
- fire and smoke modelling was undertaken and showed that the temperatures within the corridors and all rooms beyond the room of fire origin were survivable where sprinklers were provided. The visibility in all rooms beyond the room of fire origin also remained survivable, where sprinklers were provided; this was clearly not the case where they were not provided. It is therefore considered that automatic fire suppression would provide significant benefit particularly beyond the room of fire origin;
- if fire suppression systems are provided in a residential care premises, they can assist in reducing the risks from fire, particular if other fire safety measures (for example, passive fire protection) fail to act as intended;
- the adoption of an automatic fire suppression system within residential care premises is considered a cost-effective means of providing an improved level of safety and can be used to compensate for other areas of the design when all relevant factors are considered;
- A full case study is covered in Appendix 3.0 bafsa Callow Mount Sprinkler Retrofit Project
- The BRE also produced a report on the effectiveness of sprinklers back in 2005
https://www.bre.co.uk/filelibrary/pdf/rpts/partb/sprinkler_exec_summary.pdf



Section 6.0

Recommendations and Next Steps

The guidance document states “Sprinkler and water mist systems provide a high level of protection for vulnerable residents, and, for long-term older residents, these systems “future proof” residents’ accommodation to cater for potential effects of age on mobility, sensory faculties and cognitive ability.”

And also goes on to state “There is also considerable potential for major reduction in risk by installation of automatic fire suppression systems”

It is accepted that in some cases the sprinklers will not save the life of the person in the flat in which the fire starts but will ensure that the fire is contained within that flat (within certain limitations), so thereby protects all other residents and the property itself.

EFDC will need to consider if retrofitting Sprinklers provides any relevant benefit in terms of life safety and property protection.

Key considerations would need to include:

- Risk
- Benefit
- Cost of installation
- Type of system to be installed
- How long it would take to install and implications within the building (i.e. Disruption, structural issues such as false ceilings and voids, decoration)
- Water pressure required (this is a key issue for some systems)
- Local Fire Service views and recommendations (A key point here is that they may be able to support part funding if they sign on to a high risk situation)
- Ongoing maintenance and testing requirements

As we have seen in this report there is no legal obligation to retro fit sprinklers, but as discussed in some cases there may be a distinct benefit in doing so for either:

- On an individual basis; for a particularly high-risk resident
- On a scheme specific basis; where there is a concern over residents, or the building or both!

Ultimately the decision to retrofit, needs to be made by EFDC based on an assessment of risk to an individual, individuals, or property (or them all).

However, the conclusion of this report, would suggest the following:

- Hemnall House; would significantly benefit from the retrofitting of sprinklers, as it has both a mix of vulnerable residents, and is an old building that presents significant compartmentation issues which are unlikely to be easily or cost-effectively addressed due to the age of the building and nature of construction.
- Norway House; also has a mix of vulnerable residents but has a significantly more robust level of compartmentation. However, this property has been subject to a number of small fires and therefore the retrofitting of sprinklers may be a consideration based on life safety risk.



- Highwood Lane and Hilltop Court; are both general needs and are reliant on effective compartmentation. Residents are also assumed to be more mobile, but the likelihood of accidental fires may be higher than compared to other premises. Therefore, the retrofitting of sprinkler systems would present a benefit in terms of life safety. However, statistical evidence to date from EFDC and both the Hackitt Review and NFCC definitions would suggest that these premises do not fall within the High Risk category.
- EFDC Sheltered Schemes all contain the most vulnerable residents, albeit they were all initially offered places within the schemes on the basis that they were able to live independently. These schemes all have the benefit of high standards of both active and passive fire protection, and 24/7 monitoring via Careline.

There is some concern over some compartmentation within the roof voids, and further investigation of this could support a move from a policy of Simultaneous Evacuation to a policy of Stay Put.

The retrofitting of sprinkler systems into these schemes would present a benefit in terms of life safety, although with high levels of existing active and passive fire protection coupled with increased compartmentation and 24/7 monitoring, benefits may not be as evident as with the other schemes above.