

Housing Health and Safety Rating System (HHSRS)

Case Studies

Group A
Protection Against
Accidents

Hazard A4
Fire and Explosions

Example A4.2
Pre-1920
Mid-terrace Maisonette
(FMO)

Vulnerable Group
All persons aged
60 years and over

Multiple Locations
Yes

Related Hazard A7
Structural Collapse and
Falling Elements

Related Hazard A8
Electrical Hazards

Related Hazard D18
Crowding and
Space

Dwelling

Description

This is a four-bedroomed, three-storey maisonette in multiple occupation above a commercial baker’s premises that produces its own bread and confectionary on the ground floor. It is built in solid stone and brick, under a slate roof.

There is a lounge/kitchen and bedroom on the first floor, two bedrooms and the bathroom on the second floor and an attic bedroom above. Entry to the maisonette is via the rear of the premises through the rear yard and up an external metal staircase. The entrance door leads into the shared lounge/kitchen that leads into a hall with stairs to the second floor.

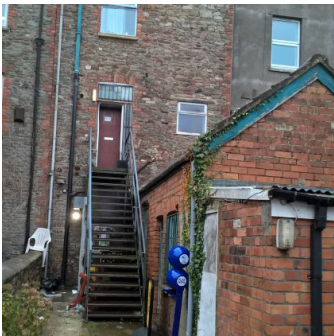
There is gas-fired central heating/hot water, with the boiler being located in the kitchen area. The property has been rewired within the last five years and has a modern consumer unit with MCBs and an adequate number of sockets. All the windows are uPVC double-glazed units and are openable.

The property is occupied by four unrelated individuals, though one of the rooms could accommodate up to two people.

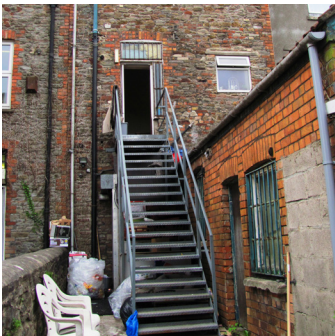
The property has a valid EPC, with an E rating.

Certification

EPC	E Rating
Landlords gas safety	N/A
Landlords EICR	N/A
Fire risk assessment	In place
Building safety case	N/A



1
Rear elevation



2
Entrance to the
maisonette via the rear



3
Close-up of rear entrance

Deficiencies

Description

There is a key-operated lock on the kitchen entrance door, as opposed to a preferred thumb-turn lock. None of the windows conform to escape standard so the only means of escape is via the lounge/kitchen, containing a gas hob and gas-fired boiler. There is no Gas Safe certificate for the gas installations.

The mains-wired fire alarm system interlinked to the ground-floor commercial premises is not working. The system incorporates call points at all levels and battery back-up, with detectors used throughout. The control panel is contained in the commercial premises and inaccessible to the residential element. The internal walls and floors, including the floor separating the commercial premises from the maisonette, provide 30 minutes of fire protection.

The electrical appliances provided in the kitchen do not have PAT-test labelling.

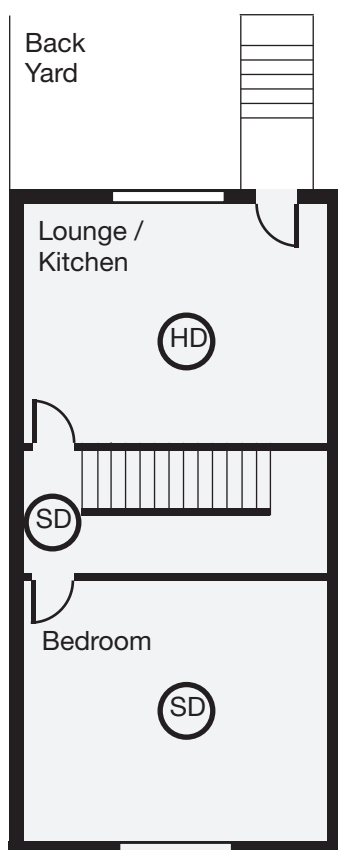
The extraction for the baker's shop discharges below the first-floor bedroom window. Consequently, there is 'flour dust' staining to the walls, and the tenant complains of flour dust in their bedroom unless they keep the window closed, but this is the only form of ventilation available to the room.

All the internal doors are well-fitting wood-panel doors, not fire doors. Each door has a door closer and is fitted with a thumb-turn lock. The walls to the common halls/landings are lined with painted woodchip wallpaper. The bottom of the external stairs is next to the rear entrance door and window to the baker's shop, both of which are rated as 30-minute fire resistant.

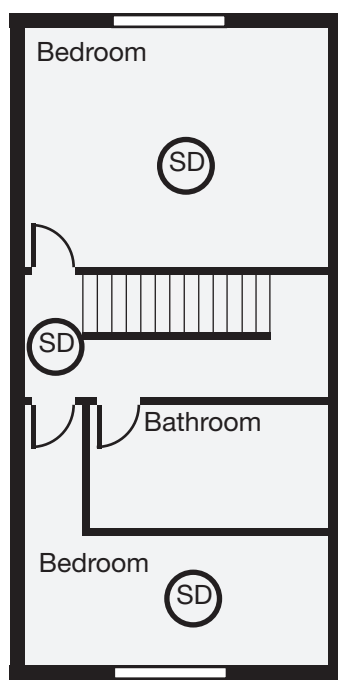
The residential element of the building has no fire safety signage.

There is no external lighting to the metal stairs or the rear yard, nor is there any emergency lighting within the maisonette. The only natural light to the internal stairs is from the front dormer window in the attic, though PIR-triggered artificial light is available.

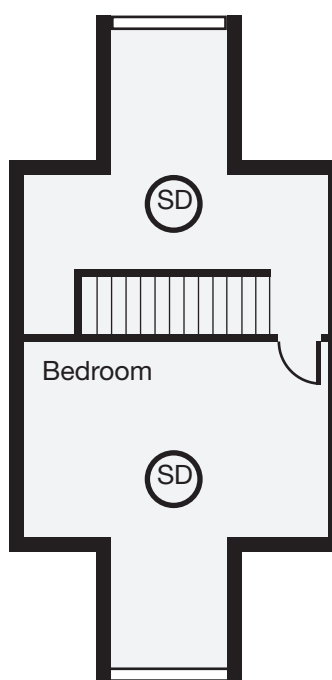
An FRA (fire risk assessment) covers both the commercial and residential unit, though it is over 3 years old.



5
First Floor



6
Second Floor



7
Third Floor

HD - Heat detector
SD - Smoke detector

Relevant Baseline Indicators

0

Satisfactory
or N/A

1

Not
Satisfactory

2

Defective

3

Seriously
Defective

Subject	Score	BI	Baseline Indicator
8 Internal Doors	0 1 2 3	8.1	Internal doors leading between areas of a single dwelling must provide a sufficient barrier to the spread of smoke and fire (where appropriate). Any glazing in doors must respond safely to collision and must be designed for functionality to avoid strains or entrapment when in use, and must be maintained in good repair. All bathrooms and toilet room doors must be fitted with a suitable lock and must not contain clear glass.
11 Security	0 1 2 3	11.1	Adequate external lighting shall be provided to all means of access including entrances and external refuse stores providing good visibility when there is no daylight.
	0 1 2 3	11.2	Access doors to dwellings should have adequate locks. Doors must be solid external grade and fitted with a minimum of a mortice deadlock to BS-3621, openable from the inside without a key. There must be a means for occupiers to view visitors without opening the door, either by means of a viewer within the door or by a glazed pane adjacent or close to the entrance door. All rear doors should be fitted with a mortice dead lock to BS-3621 or 2 security bolts.
19 Fire Safety	0 1 2 3	19.2	All electrical equipment supplied by landlords in rented residential premises is safe and compliant with current UK requirements for safety of domestic electrical products; all electrical appliances supplied by the landlord are subject to testing in line with the IET Code of Practice for In-service Inspection and Testing of Electrical Equipment (Fifth Edition) (unless they are under one year old and display a UKCA/CE marking).
	0 1 2 3	19.3	An annual gas safety check should have been undertaken within the last 12 months with a satisfactory result. Any heating provided by LPG shall be inspected by a suitably qualified engineer annually.
	0 1 2 3	19.4	The electrical installation should have been inspected and tested within the last 5 years.
	0 1 2 3	19.5	There should be sufficient, properly designed and appropriately sited smoke and heat detectors with alarms in every dwelling. These should be properly maintained and regularly tested.
	0 1 2 3	19.6	The escape route from bedrooms through habitable rooms should either be avoided, or mitigated, by other provisions.

Relevant Baseline
Indicators (BI)

0

Satisfactory
or N/A

1

Not
Satisfactory

2

Defective

3

Seriously
Defective

Subject		Score				BI	Baseline Indicator
19	Fire Safety	0	1	2	3	19.7	Egress through doors/windows that are required for means of escape should not require the use of a key or a code.

Other Relevant Matters

0

Satisfactory
or N/A

1

Not
Satisfactory

2

Defective

3

Seriously
Defective

Consideration of likely scenarios for Fire and Explosions

The assessor is to consider the likelihood of a fire igniting within the scenario presented and the likelihood of whether that fire can become uncontrolled. The outcomes relate to the impact of the fire to persons, which is to include the effects of smoke inhalation.

The assessor is to consider the likelihood of an explosion occurring and its source and whether that explosion is also likely to lead to a fire ignition and the outcomes are impacted by the location of the explosion and the provisions within the building to contain the explosion.

Matters affecting Likelihood of Harm

0	1	2	3	Electrical sources of ignition
0	1	2	3	Smoking management
0	1	2	3	Potential for arson
0	1	2	3	Accidental fire spread
0	1	2	3	Cooking provision
0	1	2	3	Fixed heating
0	1	2	3	Lightning
0	1	2	3	Laundry facilities
0	1	2	3	Multiple occupation and overcrowding

0

Satisfactory
or N/A

1

Not
Satisfactory

2

Defective

3

Seriously
Defective**Matters affecting both Likelihood and Harm Outcomes**

0	1	2	3	Escape route
0	1	2	3	Dwelling layout
0	1	2	3	Travel distance
0	1	2	3	Operation of exits
0	1	2	3	Obstructions
0	1	2	3	Non-fire resisting fabric – allowing fire to spread.
0	1	2	3	Smoke permeable fabric – allowing smoke to spread.
0	1	2	3	Fire stops to cavities – lack of, allowing fire to spread.
0	1	2	3	Disrepair to fabric – walls, ceilings and/or floors may allow smoke, fumes and/or fire to spread.
0	1	2	3	Internal doors – insufficient doors or doors of inappropriate materials or ill-fitting doors.
0	1	2	3	Fire-resisting construction (including any glazing) protecting escape routes
0	1	2	3	Measures to ensure that fire-resisting doors are maintained in the closed position
0	1	2	3	Smoke Control
0	1	2	3	Artificial lighting
0	1	2	3	Levels of compartmentation
0	1	2	3	Provision of appropriate Fire Safety Signs
0	1	2	3	Fire Detection and Alarm Systems

0 1 2 3 Provision of fire-fighting equipment

0 1 2 3 Fire suppression system

Matters related to cladding

0 1 2 3 Condition of cladding

0 1 2 3 Combustibility and fire performance of external wall construction and cladding

0 1 2 3 Location and adequacy of cavity barriers

0 1 2 3 Presence/maintenance of dry/wet rising mains

0 1 2 3 Presence/maintenance of Firemen's/ Firefighting/Firefighters lifts

0 1 2 3 Access arrangements to the site and the building for the fire and rescue service

0 1 2 3 Balconies

Matters related to explosions

0 1 2 3 Unauthorised gas supply

0 1 2 3 Siting of gas tanks

0 1 2 3 Ventilation

0 1 2 3 Hot water storage tank

0 1 2 3 Vented hot water system

0 1 2 3 Unvented hot water system

Likelihood of Harm

Scale Points Likelihood of harm from this hazard over the next twelve months	
Very Likely	1 in 1
	1 in 2
	1 in 3
	1 in 5
Likely	1 in 10
	1 in 20
	1 in 30
	Example Dwelling 1 in 50
Unlikely	1 in 100
	1 in 200
	1 in 300
	1 in 500
Very Unlikely	1 in 1,000
	National Average 1 in 2,000
	1 in 3,000
	1 in 5,000
Score 1 in 50	

Justification of Scoring
Likelihood of Harm

Ingress and egress are solely via a high-risk room, namely the kitchen/dining room, where the highest-risk elements are present without having undergone recent testing. There is no thumb-turn lock for easy escape, and the absence of a working fire alarm system is another major factor. The woodchip wallpaper would also assist fire spread.

The property is a three-storey maisonette, and the travel distance from the attic bedroom to outside is significant, particularly as there is metal staircase which has to be used to vacate the property. The property is located above a baker's, with only 30-minute fire separation, and there is a complaint relating to the build-up of flour dust (which carries an explosive risk) within one of the bedrooms. Fire in the commercial premises could easily compromise the single external escape route to the place of safety.

The quantity and range of defects in this multi-occupied property all contribute to greatly increase the likelihood, reflecting the significant risk that exists at this property when compared with the national average.

Harm Outcomes

Extreme		Severe		Serious		Moderate	
Death, permanent paralysis, etc.		Heart attack, serious fractures, etc.		Chronic stress, severe concussion, etc.		Broken fingers, moderate cuts, etc.	
Very Likely	50.0	Very Likely	50.0	Very Likely	50.0	Example Dwelling	50.0
	30.0		30.0		30.0		National Average
Example Dwelling	20.0	Example Dwelling	20.0	Example Dwelling	10.0	These scores are simply calculated as the sum of the other three harm outcomes subtracted from 100%	
National Average	10.0	National Average	10.0		National Average		
	5.0		5.0	2.0			
	2.0		2.0	1.0			
Unlikely	1.0	Unlikely	1.0	Unlikely	1.0		
	0.5		0.5		0.5		
	0.2		0.2		0.2		
Very Unlikely	0.1	Very Unlikely	0.1	Very Unlikely	0.1		
	0.0		National Average		0.0	0.0	
Score		Score		Score		Score	
20.0%		20.0%		10.0%		50.0%	

Justification of Scoring
Harm Outcomes

An uncontrolled fire at the property would spread with relative ease as would smoke. There is an inadequate protected route of escape (being limited to 30 minutes only in relation to spread of fire from the ground-floor bakery), no proper fire doors and woodchip wallpaper which will aid the spread, along with a fire detection system that isn't working properly and the means of escape being via a high-risk room.

The lack of external lighting also increases the risk of a fall on the metal staircase as well as reducing the speed or possibility of escape. The potential for explosion would also increase harms. There is consequently an increased risk of 'Extreme', 'Severe' and 'Serious' outcomes for the vulnerable age group.

Safety Ratings

Scenario 1
As described in this document

Key

Category	Band	Score
1 Legal duty to take action	High	10,000
2 Discretion to take action	Medium	1,000
	Low	100

Likelihood of Harm 1 in 50			
Extreme 20.0%	Severe 20.0%	Serious 10.0%	Moderate 50.0%
Category	Band	Score	
1 Legal duty to take action	High	10,000	
	Example Dwelling	4,470	
2 Discretion to take action	Medium	1,000	
	Low	100	
	National Average	51	

Score
4,470

Scenario 2

After works meeting baseline indicators

Likelihood of Harm
1 in 1,000

Extreme	Severe	Serious	Moderate
10.0%	0.0%	20.0%	70.0%

Category	Band	Score
1 Legal duty to take action	High	10,000
2 Discretion to take action	Medium	1,000
Example Dwelling	Low	107
National Average		51

Score

107

Justification of Scoring

After works meeting baseline indicators

Compliance with the BIs would ensure the provision of external and emergency lighting, a thumb-turn lock for the final exit-door, and the testing and certifying of the electrics and gas appliances as safe. They would also address the condition of the fire alarm system, specifying a control panel for the fire alarm located within the residential premises.

Works carried out to comply with BI 19.6 should also result in a re-orientation of rooms in the property and specifically the removal of the shared kitchen from its current location to one where it can be compartmentalised and not form part of the means of escape.

Compliance with all of the above would reduce the risk for both likelihood and harm outcomes to a much lower level; however, additional risk will remain as a result of the FMO and the commercial premises, particularly as they do not address the issue of the flour dust or the risk of explosion.

Scenario 3

After further improvements

Likelihood of Harm
1 in 2,000

Extreme	Severe	Serious	Moderate
10.0%	0.0%	5.0%	85.0%

Category	Band	Score
1 Legal duty to take action	High	10,000
2 Discretion to take action	Medium	1,000
Example Dwelling + National Average	Low	51

Score

51

Justification of Scoring

After further improvements

Fire or explosion within the commercial premises could overwhelm the existing fire protection between the buildings, particularly in relation to the proximity of the extract ventilation to the first-floor bedroom window. Upgrading of the fire separation to 60-minute protection between the commercial and residential premises together with relocation of the extract vent or dust-control remediation would reduce risk of injury further.

Increasing the level of protection to the bakery is beyond the scope of the Housing Act; however, this risk could be mitigated by the installation of a residential sprinkler system.

Other Relevant Legislation and Guidance

Leasehold properties

In a leasehold property, there may be restrictions on works that can be carried out without the freeholder and management company's express approval. This could include, for example, alteration of doors and windows as well as maintenance of the structure of the building (e.g. the roof).

HMO licensing

If the HMO is in England and is rented to five or more people who form more than one household, an HMO licence will be required. The local housing authority may impose conditions relating to the management, use and occupation of a licensed HMO based on locally adopted standards. Under the Licensing of Houses in Multiple Occupation (Mandatory Conditions of Licences) (England) Regulations 2018, these locally adopted standards may include minimum space and facilities requirements, for example, the minimum floor area for a kitchen based on the number of persons using it. Other requirements may be the number and size of food storage cupboards, waste storage facilities, fire precautions, etc.

Management Regulations

- The Management of Houses in Multiple Occupation (England) Regulations 2006 apply to all HMOs. Under these regulations, among other matters, the manager must ensure:
- That the water supply and drainage system serving the HMO is maintained in good, clean, and working condition
- That the gas and electric supply must not be interrupted and must be regularly tested
- That means of escape are kept clear and well maintained
- That all common parts of the HMO are maintained in good and clean decorative repair and maintained in a safe and working condition
- That all windows and other means of ventilation within the common parts are kept in good repair.

Updates

Matters for consideration listed in this section were correct at the time of publication. For the most up-to-date legislation and guidance in these areas, please visit the gov.uk website.