

Housing Health and Safety Rating System (HHSRS)

Case Studies

Group B
Physiological
Requirements

Hazard B14
Excess Heat

Example B14.3
1946-79
Fifth-floor
Studio Flat

Vulnerable Group
All persons aged
65 years and over

Multiple Locations
Yes

Related Hazard D20
Noise

Dwelling

Description

This is a fifth-floor 'studio' flat, with a floor area of 19m². It comprises a single bed-sitting room with kitchen area and a small shower room with toilet and wash-hand basin in one corner. Both rooms have mechanical extract ventilation.

The flat was created in 2019 by the conversion of an office block, the conversion adhering to building regulations standards. The original office block was built in the 1970s above a car park and bus station in the centre of town next to the central ring road, this being a dual carriageway with a 30 mph speed limit.

The EPC rating is C, and the insulation of the walls is rated very good. The flat is occupied by a single tenant. During summer months, the temperature regularly remains above 27°C overnight.



1

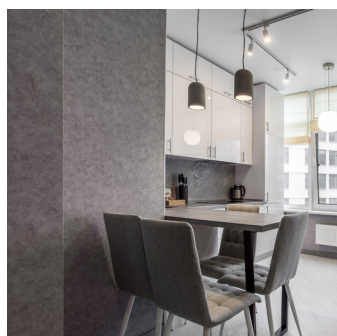
Front exterior of block of
flats

Deficiencies

Description

The two windows are double-glazed and south facing, with only one of them opening to a restricted 100 mm. When this window is open, the traffic noise is intrusive at all times of the day and night. The windows extend up to the ceiling and they have blinds fitted, though there is no provision to hang curtains, nor is there any heat-reflective film to the glass. Through-ventilation of the flat cannot be achieved, and the laminate floor heats up when the sun is on it.

The flat has electric heating with a thermostat and timeclock.



2
Internal view of window



2
Window open
demonstrating restriction
of less than 100mm

Relevant Baseline Indicators

0

Satisfactory
or N/A

1

Not
Satisfactory

2

Defective

3

Seriously
Defective

Subject		Score				BI	Baseline Indicator													
4	Sanitary Facilities: Bathroom	0	1	2	3	4.8	Ventilation for the bathroom must be provided by mechanical extraction that is ducted to the outside of the building in line with baseline indicator 16.1.													
5	Sanitary Facilities: Kitchen	0	1	2	3	5.6	Suitable facilities for the effective and safe removal of fumes and moisture laden air to the external air by means of a cooker hood or extractor fan; a cooker hood that only recycles the odour through an active carbon filter would not be acceptable, it must vent to outside. A mechanical extractor would be the normal mechanism for this function in line with baseline indicator 16.1.													
10	Noise	0	1	2	3	10.2	<div>The noise level inside the dwelling caused by steady external noise sources must not exceed:</div> <table><thead><tr><th>Time</th><th>Level</th><th>Area</th></tr></thead><tbody><tr><td rowspan="3">07:00–23:00</td><td>40dB LAeq T16</td><td>Living Room</td></tr><tr><td>40dB LAeq T16</td><td>Bedroom</td></tr><tr><td>45dB LAeq T16</td><td>Dining Room</td></tr><tr><td>23:00–07:00</td><td>35dB LAeq T8</td><td>Bedroom</td></tr></tbody></table>	Time	Level	Area	07:00–23:00	40dB LAeq T16	Living Room	40dB LAeq T16	Bedroom	45dB LAeq T16	Dining Room	23:00–07:00	35dB LAeq T8	Bedroom
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	45dB LAeq T16	Dining Room																		
23:00–07:00	35dB LAeq T8	Bedroom																		
15	Heating and Insulation	0	1	2	3	15.5	Heating and hot water should be capable of being controlled effectively and timed to operate by the occupiers.													
16	Ventilation	0	1	2	3	16.2	All habitable rooms must have at least one window, door or skylight which opens to the outside and can be fixed in an open position. In addition, ventilation may also be provided by the presence of trickle vents, air bricks or passive stack ventilation.													
		0	1	2	3	16.3	In each room, the size of the openable windows, doors and skylights together must be at least 5% of the floor area of that room.													
		0	1	2	3	16.4	All means of ventilation shall be maintained in good repair and working order.													

Relevant Matters

0

Satisfactory or N/A

1

Not Satisfactory

2

Defective

3

Seriously Defective

Score					Matters affecting Likelihood of Harm
0	1	2	3		Thermal insulation
0	1	2	3		Thermal mass
0	1	2	3		Glazing orientation
0	1	2	3		Cross-ventilation
0	1	2	3		External shading
0	1	2	3		Dwelling location

Score					Matters affecting Harm Outcomes
0	1	2	3		Thermal insulation
0	1	2	3		Thermal mass
0	1	2	3		Glazing orientation
0	1	2	3		Cross-ventilation
0	1	2	3		External shading
0	1	2	3		Dwelling location

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
	1 in 2,000
	1 in 3,000
National Average	1 in 5,000

Score

1 in 50

Justification of Scoring

Likelihood of Harm

This flat has one room serving as living, sleeping and kitchen area, with the only separate room being the bathroom. There is significant solar heat gain due to the orientation of the flat and the absence of shading or solar coatings on the windows. Cooking may also increase the temperature within. The laminate floor has a tendency to radiate heat when the sun is on it. The single openable window does not provide cross-ventilation, but it does let in a lot of traffic and general town-centre noise. Sleep is disrupted at night by the high residual temperatures and the traffic noise.

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	30.0
Example Dwelling + National Average	30.0		30.0	Example Dwelling + National Average	30.0	National Average	30.0
	20.0		20.0		20.0	These scores are simply calculated as the sum of the other three harm outcomes subtracted from 100%	
Likely	10.0	Example Dwelling + National Average	10.0	Likely	10.0		
	5.0		5.0		5.0		
	2.0		2.0		2.0		
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		0.0		0.0		
Score 30.0%		Score 10.0%		Score 30.0%		Score 30.0%	

Justification of Scoring

Harm Outcomes

There is no reason to believe the potential spread of harm outcomes will be any different from the national average.

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 30.0%	Severe 10.0%	Serious 30.0%
Moderate 30.0%		
Category	Band	Score
1 Legal duty to take action	High	10,000
	Example Dwelling	6,386
2 Discretion to take action	Medium	1,000
	Low	100
	National Average	64

Score
6,386

Scenario 2

After works meeting baseline indicators

Likelihood of Harm
1 in 50

Extreme 30.0%	Severe 10.0%	Serious 30.0%	Moderate 30.0%
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Category	Band	Score
1 Legal duty to take action	High	10,000
	Example Dwelling	6,386
2 Discretion to take action	Medium	1,000
	Low	100
	National Average	64

Score

6,386

Scenario 3

After further improvements

Likelihood of Harm
1 in 2,000

Extreme 30.0%	Severe 10.0%	Serious 30.0%	Moderate 30.0%
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Category	Band	Score
1 Legal duty to take action	High	10,000
	Example Dwelling	160
2 Discretion to take action	Medium	1,000
	Low	100
	National Average	64

Score

160

Justification of Scoring

After works meeting minimum standards

Baseline Indicator 10.2 is relevant here as opening the windows to reduce internal temperature causes excessive noise levels due to the location of the dwelling. Assessment of this dwelling under the hazard of Noise would also be useful, then to consider solutions that would have potential to resolve both hazards (such as a mechanical air-conditioning system). However, if rating the dwelling for the hazard Excess Heat alone, these would be classed as further works rather than compliance with baseline indicators.

Justification of Scoring

After further improvements

Solar reflective glass could be fitted to the windows and a mechanical air-conditioning system provided to all the flats.

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).

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](https://www.gov.uk) website.