FIRE RISK APPRAISAL OF THE EXTERNAL WALLS 56 HIGH STREET

Riverside Housing

Carried out by

TRI FIRE

CONSULTANTS - FIRE ENGINEERS - SURVEYORS

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1 Summary

Tri Fire Ltd was commissioned by Riverside Housing to visit 56 High Street, Manchester, M4 1ED to undertake a Fire Risk Appraisal of the External Wall (FRAEW) construction in accordance with PAS 9980:2022. We have also been asked to produce a related EWS1 form. We visited the premises on 26th August 2022.

This FRAEW is intended to inform the buildings FRA, and its findings are to be interpreted in the context of the ongoing legislative control over the building under the Fire Safety Order. The FRAEW addresses life safety only in relation to the appraisal of the external walls of the building. In considering risk, this is only in relation to the threat to the occupants in the building and not in terms of property damage or other potential objectives, such as safety of firefighters. The FRAEW is not aimed at confirming compliance with building regulations, either at the time of construction, or currently.

The PAS 9980 guidance utilises a system of risk factors, each of which can be positive, negative, or neutral. The risk factor we have allocated for each relevant area is identified throughout the report. We have used our professional judgement of the overall balance of risk factors to determine the overall risk rating for the property.

The buildings fire risk assessment has been taken into consideration as part of this FRAEW. This has been reviewed and assessed to ensure that the level of risk to life safety presented by the external wall construction has been assessed in the context of the risks presented by the whole building.

Our overall view is that the collective effect of the fire safety measures on the site considered holistically, as opposed to each measure in isolation, is that the external wall systems that are present do have a detrimental impact on the overall fire safety of the building. The risk rating in line with PAS 9980 is Medium.

The outcome of our review is that remedial works are required.

Our current RICS EWS1 form rating is B2, meaning:

B2 - I have concluded that an adequate standard of safety is not achieved, and I have identified to the client organisation the remedial and interim measures required

Option B is for buildings where combustible materials are present in the external wall

1.1 Scope

We can confirm that the assessed property is within the scope of PAS 9980, as requiring a FRAEW. This is due to external façade materials being present which were of an unknown make-up, and as such an assessment of their combustibility and the risk that this may present to the occupants was necessary, in line with PAS 9980.

This assessment has followed the basic level of appraisal using PAS 9980, and it has not been necessary to undertaken in-depth fire engineering analysis.

1.2 Statement of Competence to carry out a Fire Risk Appraisal of External Wall Construction

This report has been produced and authorised by Adam Kiziak, Principal Consultant, BSc (Hons), IEng, MIFireE, MIFSM, MSFPE.

We can confirm the following:

- I have read and understood the commentary and provisions relating to the competence of external wall assessors set out in Section 8 and Annex H of PAS 9980:2022
- I have adequate and relevant competence to undertake an FRAEW
- I have sufficient knowledge, skills and experience in relation to fire safety of external walls to be able to complete an assessment at the level required
- I have the relevant skill, knowledge and experience to manage and interpret the results of intrusive inspections
- I have the competence to appraise and assess the nature of external wall construction in terms of fire performance and provide an opinion on the risk

There are no conflicts of interest in the production of this report. The conclusions of the reports are my independent assessment of the risks and remedial actions and have not been influenced in any way by the opinions or actions of others.

Adam is a Fire Engineer, who is an Incorporated Engineer registered with the Engineering Council, a member of the Institution of Fire Engineers (IFE), and a member of the Institute of Fire Safety Managers (IFSM). He also sits on the Council of the IFSM, and on the board of the IFE Fire Risk Assessor Register, of which he is also a member.

Adam is a Principal Consultant for Tri Fire, and joined following roles at The Oakleaf Group as Head of Fire, and following six years working for the Fire Protection Association, at the Fire Service College in Moreton in Marsh. His role includes providing fire safety advice and consultancy with regards to fire engineering, fire risk assessments, fire strategies, evacuation planning and external wall reviews. He has achieved a BSc (Hons) degree in Fire Safety and Risk Management at the University of Central Lancashire, as well as the CFPA Diploma in Fire Risk Assessment and the Advanced CFPA Diploma in Fire Safety Management.

Professional Memberships

- Incorporated Engineer, Engineering Council (IENG)
- Full Member Institution of Fire Engineers (MIFireE)
- Full Member Institution of Fire Safety Managers (MIFSM)

Principal Consultant, Tri Fire Ltd

2 Building Fire Strategy & Fire Safety Design

56 High Street is an 8-storey purpose-built block of 33 general needs flats and maisonettes. There are commercial premises on the ground floor accessed externally with no communication with the flats' common areas. The main entrance is into an entrance lobby which leads to the stair enclosure containing the main electrics cupboard and a cleaner's cupboard. The lift lobby with the lift motor room is accessed via the stair enclosure, and a rear lobby with an exit, tank room and the refuse room with an exit is accessed via the lift lobby. Flats 1-6 are within a lobby area on the first floor, 2 of which are maisonettes with additional exits in the second-floor lobby; flats 7-10 are accessed from a lobby on the second floor (and the upper floors of flats 2 and 4, which are maisonettes).

There are 2 services risers in each of the first to the sixth-floor lobbies and one in the seventh-floor lobby. There are cupboards in each of the first to the seventh-floor lobbies, those on the fifth, sixth and seventh floors have refuse chute hoppers.

The block is provided with an automatic smoke ventilation system comprising large automatic vents to a central atrium with roof level automatic vents and an AOV at the head of the stairs controlled by smoke detection within the flats lobbies. The system has manual override facilities provided.

The building is provided with a dry rising fire main, inlet at main entrance with outlets located at each upper floor level in the flat's lobbies.

The height of the building to the uppermost occupied floor level is approximately 21m. The buildings top storey height is approx. 24m. The external walls consist of curtain walling spandrel panels and a brickwork system.

The single core has a single lobby protected stairway, which serves all floor levels. The stairway is a protected route.

There is seen to be a low risk of external ignition, as the property has no car parking adjacent to the building.

The premises is located 0.6 mile from a local fire station, Firemart, 82 King St, Manchester M2 4WQ. A second fire station is 07. miles from the property. As such, a swift response to any emergency call would be anticipated.

No fire strategy has been provided for the block however it is assumed that the residential areas of the properties operate a full evacuation procedure. That is, in the event of a fire in a flat, all occupants within all dwellings will evacuate, having been alerted by the fire detection and alarm system.

3 Occupancy Characteristics

The occupation of the property is general needs housing, so we have reasonably assumed that the occupants are a typical cross section of the general public. It was not reported that any residents are especially vulnerable or at risk; the premises do not provide sheltered or extra care housing support.

In general, the building is designed as Long-term Residential Premises. When referring to the table below, the occupancy characteristic for these premises would be occupants who are asleep and familiar with the building and given the occupancy characteristic of (Ci) in accordance with BS 9999:20172.

Occupancy characteristic	Description	Examples
A	Occupants who are awake and familiar with the building	Office and industrial premises
B	Occupants who are awake and unfamiliar with the building	Shops, exhibitions, museums, leisure centres, other assembly buildings, etc.
C	Occupants who are likely to be asleep:	
Ci	• Long-term occupancy	Individual flats without 24-hour maintenance and management control on site
Cii	• Long-term managed occupancy	Serviced flats, halls of residence, sleeping areas or boarding schools
Ciii	• Short-term occupancy	Hotels
D	Occupants receiving medical care	Hospitals, residential care facilities
E	Occupants in transit	Railway stations, airports

4 External Façade Materials

Intrusive inspections of the premises were undertaken in June 2020 by Sandberg Consulting Engineers, and the information provided from their report has been used as the basis for our assessment. The following summarises the findings of the report with regards to the materials used in the external façade construction, and our view relating to any action that may be required.

Façade Type 1: Aluminium Panels

The curtain wall spandrel panels contain a core of PIR insulation, a back-up insulation was found to be EPS insulation.

The metal cladding panels between the windows to the front elevations are aluminium sandwich panels with a PIR insulation core, backed by EPS insulation. The substrate to the rear is unknown.

Due to the readily combustible insulation, only encapsulated in aluminium - low melting point metal. In line with PAS 9980 is seen to be a negative risk factor

Due to the panels not forming a continuous vertical section, such that fire and smoke spread into the building to give rise to secondary fires is unlikely and fire will only spread by cascading up panels. Adjacent to windows, but not in a vertical continuous line with, windows, in line with PAS 9980 is seen to be a neutral risk factor.

The height of the building to the uppermost floor slab is approximately 21m. The buildings top storey height is approx. 24m and the means of escape are familiar to the residents. As the building is more than 18m in height, in line with PAS 9980 this is seen to be a negative risk factor.

Inadequate cavity barriers were found during the intrusive inspection, in line with PAS 9980 these are seen to be a negative risk factor. Due to the lack of cavity barriers, in all areas, horizontally, vertically and around window sets / openings,

The aluminium panels situated on the upper two floors to the front and rear, such that direct flame impingement on the cladding from a fire on a lower level is highly unlikely (An example would be a penthouse flat constructed on the roof of an existing building) In line with PAS 9980 is seen to be a positive risk factor. Having reviewed the materials present behind the aluminium spandrel panels, we are satisfied that the risk of the PIR / EPS insulation contributing to external fire spread is low as it is situated to the upper 2 floors and adjacent to the A1 brickwork and quite isolated so therefore the possibility of external fire spread is low. The insulation is not seen to present a risk that would warrant remediation works. As such, no remedial action is required.

The PIR insulation is not seen to present a risk that would warrant remediation works as there is a sufficient gap between the panels between window sets, that would mean they would not contribute to rapid external fire spread. As such, no remedial action is required.

Façade Type 2: Masonry System

The majority of the façade consists of brickwork. The through wall build-up following the brickwork could not be confirmed, and as such, it must be assumed that combustible materials are present, and in line with PAS 9980 this is seen to be a negative risk factor. However, there is an outer leaf of brickwork, and in line with PAS 9980 this is seen to be a positive risk factor.

The height of the building to the uppermost floor slab is approximately 21m. The buildings top storey height is approx. 24m and the means of escape are familiar to the residents. As the building is more than 18m in height, in line with PAS 9980 this is seen to be a negative risk factor.

Whilst combustible material may be present behind the brickwork, considering the outer face of non-combustible masonry, and the height of the building, we are satisfied that no remedial works are required to the brickwork façades.

Façade Type 3: Render system (unknown façade)

The block is provided with an automatic smoke ventilation system comprising large automatic vents to a central atrium with roof level automatic vents and an AOV at the head of the stairs controlled by smoke detection within the flats lobbies.

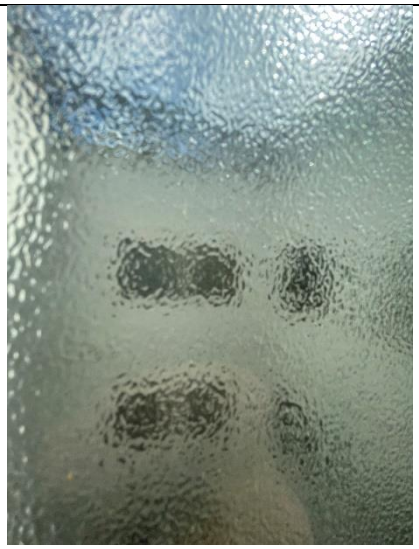
The build-up within this central area has not been confirmed. Further investigations should be undertaken to identify the materials behind the central atrium that opens onto the means of escape, on every level.

5 Next Steps & Interim Measures

This report has confirmed a number of remedial actions that are to be undertaken relating to the external fabric of the property. An action plan should be developed for the remedial works, and these actions should be undertaken in a timely manner. However, the risk is such that there is an interim measure in place already, and the evacuation system has been changed to full evacuation. *"Guidance to support a temporary change to a simultaneous evacuation strategy in a purpose-built block of flats"*.

6 Photos

 	General views of the external façade

7 Standards and Legislation

7.1 PAS 9980:2022 – Fire risk appraisal of external wall construction and cladding of existing blocks of flats

PAS 9980 provides guidance on the risk of fire spread via external wall construction. It sets out a methodology to conduct and record fire risk appraisals of external walls, which can be scaled up or down depending upon the complexity of individual buildings; not all buildings will require an appraisal, and of those that do, not all will require intrusive inspection.

PAS 9980 does not alter the obligations placed upon those carrying out building work on external wall construction, nor does it affect the compliance of past building work, whether measured against Building Regulations or contractual obligations. Given the complexity and range of different external wall systems that exist, it does not contain "off the peg" solutions for specific wall types and materials but may enable a consistent approach to evaluating the risk when considering the external walls of actual buildings.

PAS 9980 takes into account the rationale originally set out in the 2020 version of the MHCLG Consolidated Advice Note. However, it expands on that advice by providing a tool for appraisal of the likely fire performance of external walls and assessment of the risk associated with external fire spread in the context of the use, occupancy and fire safety arrangements of the building.

The fundamental basis of PAS 9980 is that it is risk-based, not compliance-based. It cannot establish absolute safety but can only categorize risk on a relative basis.

7.2 Regulatory Reform (Fire Safety) Order 2005

The Regulatory Reform (Fire Safety) Order 2005 is the applicable legislation relating to fire safety in non-domestic premises. Under the Fire Safety Order the 'responsible person' is required to undertake a fire risk assessment of their premises, and to ensure appropriate fire safety provisions are in place. Whilst the legislation is not applicable to domestic premises, the common areas of blocks of flats does fall within the scope of the Fire Safety Order. On 19th March 2020 the Government introduced a proposed Fire Safety Bill, which will amend the Fire Safety Order to clarify that the responsible person for multi-occupied, residential buildings must manage and reduce the risk of fire for the structure and external walls of the building, including cladding, balconies and windows.

The Fire Safety Order does not make reference to British Standards although following the recommendations given in a British Standard may be one way of demonstrating compliance with the Fire Safety Order.

7.3 Fire Safety in Purpose Built Blocks of Flats Guidance

This guide is intended to meet the needs of housing providers and enforcing authorities for guidance tailored to purpose-built blocks of flats. The document is a guide to ensuring adequate fire safety in purpose-built blocks of flats, regardless of age. Practical advice is offered on how to assess the risk from fire and how to manage fire safety in such buildings. The document also includes case studies based on the commonly found issues in blocks of flats, with suggested fire safety solutions.

The guide does not introduce new standards or regulations but builds on existing good practice and guidance currently in place. In particular, it will help landlords, managing agents, enforcing officers and those undertaking fire risk assessments to understand the legislative requirements relating to blocks of flats and to apply them in a consistent and reasonable manner. The document does not set prescriptive standards. Its aim is to provide guidance and recommendations for use when assessing the adequacy of existing fire safety provisions in purpose-built blocks of flats.

It is intended for buildings which have been constructed as purpose-built blocks of flats. It applies to existing blocks only. Fire safety design in new blocks of flats is governed by the Building Regulations 2010 but, once a block is occupied, this guide is applicable.

As the fire risk assessment is concerned with fire safety within the common parts, the flats themselves are outside the scope of the FSO. Accordingly, the scope of the fire risk assessment required by the FSO does not include measures to protect residents from a fire in their own flat.

With regards to compartmentation, the guidance states the following:
The external façades of blocks of flats should not provide potential for extensive firespread. When assessing existing blocks of flats, particular attention should be given to any rainscreen or other external cladding system that has been applied and to façades that have been replaced.

The use of combustible cladding materials and extensive cavities can present a risk, particularly in high-rise blocks. Restrictions are normally applied to the nature of such materials and in particular their surface spread of flame characteristics. Cavity barriers are also required in some circumstances. Assistance from specialists may be required to determine if the external surfaces of walls are satisfactory and whether there is adequate provision of cavity barriers.

7.4 Building Regulations & Approved Document B

The Building Regulation relevant to external facades is B4(1).
'the external walls of a building shall adequately resist the spread of the fire over the walls and from one building to another having regard to the height, use and position of the building.'

Approved Document B is one of a series of documents that give practical guidance about how to meet the requirements of the Building Regulations 2010 for England. These approved documents give guidance on each of the technical parts of the regulations. The approved documents provide guidance for common building situations. Document B relates to fire safety.

Approved Document B Volume 1, 2019 edition, states the following in relation to external fire spread:
The external envelope of a building should not contribute to undue fire spread from one part of a building to another part. This intention can be met by constructing external walls so that both of the following are satisfied.
a. The risk of ignition by an external source to the outside surface of the building and spread of fire over the outside surface is restricted.
b. The materials used to construct external walls, and attachments to them, and how they are assembled do not contribute to the rate of fire spread up the outside of the building.
The extent to which this is necessary depends on the height and use of the building.

7.5 RICS EWS1 Form

The Royal Institution of Chartered Surveyors (RICS), The Building Societies Association (BSA), and UK Finance have agreed a new industry-wide valuation process which will help people buy and sell homes and re-mortgage initially in buildings above 18 metres (six storeys). Changes in Government advice in January 2020, brought all residential buildings of any height potentially within scope.

RICS have led a cross-industry working group to consider best practice in the reporting and valuation of tall buildings within the secured lending arena, to agree a new standardised process. This is to be used by valuers, lenders, building owners and fire safety experts in the valuation of high-rise properties, with actual or potential combustible materials to external wall systems and balconies. This is endorsed by RICS, UK Finance, Buildings Societies Association, IRPM and ARMA. MHCLG are supportive of the approach.

The External Wall Fire Review process will require a fire safety assessment to be conducted by a suitably qualified and competent professional, delivering assurance for lenders, valuers, residents, buyers and sellers. Only one assessment will be needed for each building, and this will be valid for five years.

The assessment of fire risk as described above includes that insofar as is necessary to ensure a reasonable standard of health and safety of those in and around the building, all external wall constructions and any external attachments (e.g. balconies) of the building:
Resist spread of fire and smoke so far as is reasonably necessary to inhibit the spread of fire within the building, and
Are constructed so that the unseen spread of fire and smoke within concealed spaces is inhibited, and
Adequately resist the spread of fire over the walls, having regard to the height, use and position of the building.

The assessment takes account of regulations and published design guidance as were current at the time of construction as well as those which are current at the time of this assessment. It cannot be guaranteed that it would address guidance and regulations which may be introduced in the future.

8 Supporting Documents

Supporting

- PAS 9980: 2022
- Building Regulations 2010
- Approved Document B
- Fire Safety in Purpose Built Blocks of Flats Guidance
- BS 9991:2015 - Fire safety in the design, management and use of residential buildings – Code of practice

9 PII

We can confirm that we hold £5million Professional Indemnity Insurance with no exclusions relating to fire safety & cladding. Certificate inserted below:

HISCOX

Certificate of professional indemnity insurance
Tri Fire Limited

Certificate of professional indemnity Insurance

Policy number:	PL-PSC10003018371/00
Name of policy holder:	Tri Fire Limited
Period of insurance:	From 13/04/2022 to 12/04/2023 both days inclusive.
	This policy is a Continuing cover policy
Insurer:	Hiscox Insurance Company Limited
Retroactive date:	01/04/2020
Level of cover:	£5,000,000

Signed on behalf of Hiscox Underwriting Limited as agent for the insurers

Bob Thaker
CEO, Hiscox UK

Notes:

(a) This insurance is subject to policy terms and conditions and any special terms notified to the Insured

10 Extent of Report

The report is limited to the information that has been provided.

Statements regarding the fire resistance of the external façade have been based on information provided, and typical expected resistances of materials and construction. They comprise a visual inspection of accessible areas only. No testing, measurements or calculations were carried out as part of this inspection.

The assessment can only be based on available industry knowledge at the time of the FRAEW and, more definitive information on the fire performance of external wall construction might come to light subsequently.

The supporting evidence provided in this report has been selected to substantiate the statements made within its content. Additional photographs may be available upon request.

It was not possible to verify that the observed conditions were applicable in all similar locations within the façade and therefore it cannot be assumed that are representative of the entire building envelope.

Where structure and façade elements were hidden by cladding and other coverings, the assessment was based on experience of similar buildings and construction. Where necessary, we may recommend further investigation for such items. If significant issues with the façade design beyond the scope of work have been identified, then the analysis of these defects will fall outside the scope of this commission, we will however provide comments based on our visual assessment of the issues.