



FIRNTEC
BUILDING COMPLIANCE

Unit 4a, Darklake View,
Estover
Plymouth
PL6 7TL

Document Version 5
Survey Date 19/02/2025
Suggested Review Date 19/02/2030

FIRE RISK APPRAISAL EXTERNAL WALLS

BRAYBROOK HOUSE

Braybrook House
Moor Lane
West Brom
B70 7AU



Table of Contents

Cover Page	1
Table of Contents	2
Summary	3
Abbreviation/ Term Definition	4
Statement of Competency	5
Terms of Reference	6
Supporting Documents	8
Executive Summary	9
Fire Strategy	14
Wall Constructions	17
Wall Construction: Brickwork (MX5C9S)	18
Wall Construction: Infill panels (ES723U)	21
Façade Configuration: QH14SY	25
Façade Configuration: 22D8RI	29
Appendix	33
Asset Information	34
Aerial Perspective: Braybrook House Moor Lane West Brom B70 7AU	38
Elevations	39
Inspections	40
Inspection: IUG4VX	41
Inspection: 176J6Q	43
Inspection: 5ZB9BQ	45
Inspection: KK28CT	47
External Windows	50
External Window: Top, Mid, Side Hung Casements (JYQK7N)	51
External Window: Other (NVD9ZU)	52
External Doors	53
External Door: Single Leaf Entrance Doors (8WNS3P)	54
Plans & Elevations	55
Photos	59

Summary

Fire Risk Appraisal External Walls

Assessment and Certificate Reference

RB-7U9QEZ

Assessed On, By

19/02/2025, Tom Barry CFPA-E Dip TC, TIFireE,
MIFSM, AMIFPO, CFRAR

Approved / Validated On, By

14/05/2025, James Major

Recommended Review Date

19/02/2030

Produced For the Responsible Person

Sandwell Metropolitan Council

Specification Conforms To

Our own internal quality system.

Assessment Scope

Assessment applies only to the building specified.

Assessed Property

Property Name

Braybrook House

Property Reference

RB-L5WYM6

Address

Braybrook House

Moor Lane

West Brom

B70 7AU

Assessing Organisation

Firntec Ltd

4a Darklake View, Estover, Plymouth, Devon, PL6 7TL

0345 646 1566 — www.firntec.com

Abbreviation/ Term Definition

- **ACM** Aluminium Composite Material
- **ADB** Approved Document B
- **AOV** Automatic Opening Vent
- **BSA** Building Safety Act 2022
- **Cavity Barrier** Product used to close or separate a concealed space to restrict fire and smoke
- **Close State Cavity Barrier** Cavity Barrier designed to be fitted under compression/friction between inner and outer surfaces of a cavity to seal it
- **Open State Cavity Barrier** Cavity Barrier that is open to allow ventilation/drainage of cavity in open state but closes when a developing fire occurs (e.g., intumescent strip)
- **Combustible** Not classified as A1 OR A2 in accordance with BS EN 13501-1: 2018, and not meeting definitions of non-combustible or limited combustibility
- **Compartmentation** Subdivision of building by fire resisting walls and/or floors for limiting fire spread
- **EPS** Expanded Polystyrene
- **EWS1** External Wall System Fire Valuation Form
- **FB** Fire Barrier - Separating element with fire integrity for a specific time
- **Fire Stop** Barrier seal to close an imperfect fit in design between elements of components to stop the spread of fire
- **FRAEW** Fire Risk Appraisal of External Walls
- **FRA** Fire Risk Assessment
- **FRS** Fire and Rescue Services
- **FSA** Fire Safety Act 2021
- **HPL** High Pressure Laminate
- **HRR** Heat Release Rate
- **MDF** Medium Density Fibre Board (a type of manufactured timber)
- **PIR** Polyisocyanurate Rigid Foam
- **PUR** Polyurethane Foam
- **RP** Responsible Person
- **RRFSO** Regulatory Reform (Fire Safety) Order 2005
- **SFS** Steel Framing System
- **SIB** Secure Information Box

Statement of Competency

Statement of Competency to Carry out a Fire Risk Appraisal of External Wall Construction

Within PAS 9980:2022 it requires that a person conducting the FRAEW are competent to do so in accordance with Annex H and to demonstrate the expected skill sets of competent external wall assessors.

This is our Statement of Competence to carry out a Fire Risk Appraisal of External Wall construction.

We confirm that they have:

- a) 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;
- b) Adequate and relevant competence to undertake the FRAEW;
- c) Sufficient knowledge, skills and experience in relation to fire safety of external walls to be able to complete an assessment at the level required;
- d) The relevant skill, knowledge, and experience to manage and interpret the results of intrusive inspections; and
- e) The competence to appraise and assess the nature of external wall construction in terms of fire performance and provide an opinion on the risk.
- f) No conflicts of interest of any kind, other than any which are disclosed in the report.
- g) The conclusions of the report are the author's independent assessment of the risks and remedial actions and have not been influenced in any way by the opinions or actions of others except where stated.

Terms of Reference

Particulars

This FRAEW report follows the guidance in accordance and reference to PAS9980:2022 Fire Risk Appraisal of External Walls construction and cladding of existing blocks of flats – Code of Practice.

Limitations

The FRAEW addresses life safety only in relation to the appraisal of the external walls of the building; and 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 FRAEW cannot provide certainty and being risk-based report, it is, therefore, to a degree, reliant on professional judgement in its assessment and in the conclusions drawn within the report.

The FRAEW report is to be reviewed:

- a) if significant changes/repairs have been made to the external wall; and/or
- b) in the event of a fire incident, if the fire involved the external wall construction; and/or
- c) if there are any circumstances, depending upon the nature of the construction, the extent of available knowledge in relation to the particular materials, components and systems used on the building or the degree of uncertainty over the findings, which suggest review is appropriate. In these cases, the report will include a clear explanation as to why periodic review is necessary and include a suggested review date."

If more definitive information becomes available subsequent to the FRAEW on how particular external wall materials, components and systems behave in fire, or there are changes in the fire performance data relied upon in an FRAEW, such information will be expected to take precedence.

Assumptions

It is understood that the absence of evidence, is not evidence of the absence; therefore, within the FRAEW report suitable caveats or assumptions may be applied in arriving at a risk rating, for example, in relation to:

- a) the extent of sampling carried out.
- b) the accuracy of information upon which it has been necessary to rely, especially where it has not been possible to verify the information through site survey and inspection.
- c) the extent of the content and detail within the report; and
- d) the limitations at the time of the FRAEW of available knowledge on the fire performance of the materials, products and systems forming the external walls of the building.

Any caveats or assumptions made within the report are based on the most onerous and worst-case scenarios.

Statement of Intent

The investigation and writing of this FRAEW report has been commissioned at the clients request in line with PAS9980: 2022, which covers residential buildings of all heights with 2 or more dwellings, including hotels, with the aim to make sure that residents of multi-occupancy buildings are safe.

The Fire Safety Act 2021 also puts a legal responsibility on the responsible person where a building contains two or more sets of domestic premises to identify the building's structure and external walls and any common parts including doors or windows in those walls, and anything attached to the exterior of those walls (including balconies).

Supporting Documents

The following documentation was requested for review prior to our visit. Any provided documentation has been reviewed and considered as part of our findings. The range, quality and reliability of the information contained in the provided documents have been examined and deemed satisfactory for completing this FRAEW report:

Document	Received
Fire Risk Assessment (06/03/2024) Sandwell Metropolitan Borough Council Fire Risk Assessment.	Received

Executive Summary

External Wall Systems and Attachments on the Building

4 areas were inspected to gain data about the building's wall constructions. See the Inspections section of this report for full inspection details.

The table below outlines the ratings of the various wall systems and constructions to the property. Each element is explained in more detail further within this report.

5 Items	Effect	Risk
Wall Construction Brickwork (MX5C9S)	Neutral	Medium
Wall Construction Infill panels (ES723U)	Positive	Low
External Window Top, Mid, Side Hung Casements (JYQK7N)	Neutral	Medium
External Window Other (NVD9ZU)	Positive	Low
External Door Single Leaf Entrance Doors (8WNS3P)	Neutral	Medium

In accordance with the PAS 9980 Guidance, any items of construction which are considered as "Medium Risk" should be subject to periodic review, to ensure that conditions do not change, such that the risk may be upgraded to high, prompting the requirement for remediation.

Risk Factor Analysis

The risk factor analysis is a three-stage process; rating the wall construction fire performance **(1)**, façade configuration **(2)**, and fire strategy/fire hazards **(3)** on a sliding risk scale. The risk scale is expressed as "high", "medium" and "low" in a continuum, left to right, from "high" risk to "low" risk. At the furthest left end of the "high" risk band, the risk is deemed to be the highest, reducing as the risk is positioned to the right of this.

Starting with high as a base line, **Stage 1** rates the fire performance risk factors of the wall construction.

Once fire performance factors have been taken into account, **Stage 2** overlays the risk factors of the façade configuration to determine the effect this has on where the risk now lies on the scale.

The final **Stage 3** overlays the risk factors arising from consideration of the fire strategy and fire hazards (including limitations of fire and rescue service intervention).

Risk Factor Analysis 1

This analysis looks at façade configuration **QH14SY** which includes wall construction **MX5C9S**.

Conclusion: The external surface is a masonry brickwork, this offers strong fire resistance due to its non-combustible properties and high thermal mass. Bricks are inherently resistant to fire and do not ignite, burn, or contribute fuel to a fire, making them excellent for containing flames and preventing fire spread.

During a fire, brickwork reacts by absorbing and gradually dissipating heat, though intense, prolonged heat may cause cracking or spalling (surface breakage) due to thermal expansion. Despite these effects, the overall structure of brick masonry generally remains intact, ensuring the wall continues to act as a robust barrier against fire, heat, and smoke, which enhances its reliability in fire protection.

Beyond the brickwork is a cavity ahead of the insulating layer. The thermal insulation was identified to be PIR (Polyisocyanurate), this is viewed as presenting a medium risk to the contribution to fire spread. This means this product is able to sustain itself without the presence of an external heat source.

The heat from the flame causes the PIR insulation to undergo pyrolysis, which results in the black char that is formed on the surface of the board. This char layer creates a barrier inhibiting the oxygen from diffusing into the foam and may lead to self-extinguishment after a short period.

However, it should be noted that the final fire performance of plastic foams such as PIR strongly depends on the chemical composition and manufacturing process. e.g., content of isocyanate linkages and type of isocyanate-reactive component for PIR.

The insulation was not mechanically secured to the inner leaf block substrate. The inner leaf blockwork presents the same fire behaviour as the outer leaf.

Due to the external wall construction (double skin masonry), cavity barriers are not required in line with compartment walls and floors.

Around aperture openings, no cavity barriers were identified but the windows were viewed to close the cavity to assist in preventing the free flow of air within the cavity to aid in the pyrolysis of the combustible insulation.

uPVC window frames appear to be installed within this wall type. Fire tests have shown that UPVC materials, being naturally flame retardant throughout their product life, will not cause, support or enhance the development of accidental fire and are in fact self-extinguishing. Polyvinyl Chloride (PVC) possess excellent fire performance properties although are classified as Euroclass E rating. The PVC typically has 56.8% chlorine as its base polymer which offers good fire performance properties. PVC has an oxygen index of 22 so when ignited and reaches an oxygen index of 21 it is self-extinguishing when not subjected to continued heat or flame. Such as the exterior surface of the building when we take into consideration wind and other environmental factors. It is accepted that the existing material is not a recognised material in terms of closing of a cavity, however, will provide a degree of separation between the aperture and cavity.

A glazed curtain walling system is provided centrally within the property and is supported via a suspected aluminium framing system. All materials installed as part of the curtain walling system are non-combustible, and

would promote rapid fire spread.

The plasterboard inner leaf is considered limited in combustibility to prevent the passage of fire through the external wall system. No conclusion can be formed on the installation, fixing methods and spacings of fixings of the plasterboard sheets to confirm its installation as per the manufacturers guidelines.

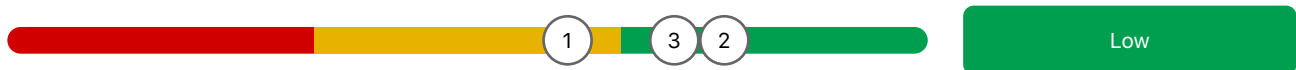
It is accepted that the brickwork wall type begins at ground floor level and extends to the full height of the property, however, the external facing construction provided is non-combustible.

It is accepted that the property height is considered to have a negative impact in accordance with PAS 9980:2022, however, multiple staircases are provided from all floors to aid relevant persons with a safe and quick escape. The majority of the fire safety features provided to the block are in line with expectations for a general needs block of this size. The property operates a stay put policy and the existing fire safety provisions within the block would appear to support that.

In the event of a fire, fire spread is likely to be at a lower rate within expectations for a building of this height, but nevertheless, tolerable rate, given the circumstances at the building in question; and/or

- a) fire spread is unlikely to give rise to widespread secondary fires resulting in occupants being significantly harmed or prevented from escaping.
- b) fire is unlikely to spread in such a way that the communal means of escape will be compromised before occupants can safely use them to escape.

It is our professional opinion that there is no requirement for remediation within this wall type.



Risk Factor Analysis 2

This analysis looks at façade configuration **22D8RI** which includes wall construction **ES723U**.

Conclusion: Aluminium panels are provided as part of the facade configuration. The external surface is aluminium which is considered to be non-combustible and would achieve a fire classification of Class A1 when tested in accordance with EN13501-1 and the rear surface is steel, which is also considered to be non-combustible. Compressed Rockwool is used within the panel as insulation and the panels are mechanically fixed to a timber framing support system, which in turn, is fixed to the masonry substrate.

The aluminium panels cladding have been mechanically fixed to timber battens which have been considered to be untreated and natural.

The timber is presents as a medium contributor to fire spread which is able to self-sustain without the presence of an external heat source.

Timber, although combustible, is used in construction with regards to its quality to provide good fire resistance. During a fire timber has a number of phase changes; (this may vary on the timber species)

- At ambient temperature, the moisture content of typical softwoods is approximately 10-14% of its weight
- Gradual heating, this percentage changes dramatically as the timber temperature approaches 90-120°C. Most of the moisture evaporates from the heated surface,
- Increasing heat energy, the timber locally dehydrates and begins to degrade at temperatures approaching 300°C

These timber battens are mechanically fixed to the blockwork outer leaf which creates a void, but given the position of these running vertically, they may offer a limited period of fire resistance to delay horizontal fire spread.

The mineral wool is viewed as presenting a non-combustible product. This means this product will not ignite as such this poses a low risk to the contribution of fire and external fire spread.

Around aperture openings, no cavity barriers were identified but the windows were viewed to close the cavity to assist in preventing the free flow of air within the cavity to aid in the pyrolysis of the combustible insulation.

uPVC window frames appear to be installed within this wall type. Fire tests have shown that UPVC materials, being naturally flame retardant throughout their product life, will not cause, support or enhance the development of

accidental fire and are in fact self-extinguishing. Polyvinyl Chloride (PVC) possess excellent fire performance properties although are classified as Euroclass E rating. The PVC typically has 56.8% chlorine as its base polymer which offers good fire performance properties. PVC has an oxygen index of 22 so when ignited and reaches an oxygen index of 21 it is self-extinguishing when not subjected to continued heat or flame. Such as the exterior surface of the building when we take into consideration wind and other environmental factors. It is accepted that the existing material is not a recognised material in terms of closing of a cavity, however, will provide a degree of separation between the aperture and cavity.

A glazed curtain walling system is provided centrally within the property and is supported via a suspended aluminium framing system. All materials installed as part of the curtain walling system are non-combustible, and would promote rapid fire spread.

The plasterboard inner leaf is considered limited in combustibility to prevent the passage of fire through the external wall system. No conclusion can be formed on the installation, fixing methods and spacings of fixings of the plasterboard sheets to confirm its installation as per the manufacturers guidelines.

It is accepted that the aluminium panel system begins at ground/first floor level and extends to the full height of the property, however, the majority of the construction provided is non-combustible and the external facing construction is non-combustible, therefore it is unlikely to be affected in the early stages of a fire.

It is accepted that the property height is considered to have a negative impact in accordance with PAS 9980:2022, however, multiple staircases are provided from all floors to aid relevant persons with a safe and quick escape. The majority of the fire safety features provided to the block are in line with expectations for a general needs block of this size. The property operates a stay put policy and the existing fire safety provisions within the block would appear to support that.

In the event of a fire, fire spread is likely to be at a lower rate within expectations for a building of this height, but nevertheless, tolerable rate, given the circumstances at the building in question; and/or

- a) fire spread is unlikely to give rise to widespread secondary fires resulting in occupants being significantly harmed or prevented from escaping.
- b) fire is unlikely to spread in such a way that the communal means of escape will be compromised before occupants can safely use them to escape.

It is our professional opinion that there is no requirement for remediation within this wall type.



Overall Building Risk Rating



Our professional opinion is that overall this Building represents a Neutral PAS9980:2022 Outcome.

Indicative EWS1 Rating

This building is predicted to receive an EWS1 Rating of **B1** based on an EWS1 Assessment. However, this is only indicative and cannot be classed as an EWS1 Rating.

Category B ratings apply to buildings where the external wall system includes significant amounts of combustible materials. The external wall system has combustible materials, but an appropriate risk assessment has determined that the fire risk is sufficiently low, and no remedial works are required.

B1

Recommended Remediations

No recommended remediations identified.

Recommended Interim Measures

No recommended interim measures identified.

Fire Strategy

Fire Strategy & Hazard Risk Factors

F.1 Occupancy

General needs housing

Neutral

F.2 Evacuation

Stay put

A 'stay put' policy is adopted for the flats. That is, in the event of a fire in a flat, the occupants of that dwelling will evacuate, having been alerted by their own domestic fire detection and alarm system, and request fire service attendance. All other occupants will remain in their flat unless they are threatened by fire and smoke or are advised to evacuate by the fire service. The 'stay put' evacuation policy relies heavily on adequate compartmentation being provided; fire should not spread from one dwelling to another, including by means of the external fabric of the building

Neutral

F.3 Escape Route Design

Access to more than one staircase for escape

Positive

F.4 Compartmentation

Adequate compartmentation in line with the expectations for a block of flats

Neutral

F.5 Smoke Control

Arrangements in which openable windows, AOVs or inlets and outlets of mechanical systems are of a satisfactory proximity away from combustible cladding; or that fire and smoke spread from the external envelope would be unlikely to compromise the effectiveness of the smoke control system or allow a route for fire spread back into the building

Neutral

F.6 Fire Alarm & Detection

Domestic smoke and heat alarms within flats, Category LD2 or LD3

Neutral

F.7 Fire Suppression

Deluge system is provided within the bin chute.

F.8 – Firefighting Facilities

Adequate access for firefighting vehicles
NOTE This is where access is possible in line with benchmark guidance on access for firefighting vehicles, taking into account the size of the building (floor area), height of the building and whether fire mains are present in the building.

Neutral

F.9 Rising Mains

Suitable rising main present

Neutral

Fire Service Intervention

Event	Seconds	Minutes & Seconds
Initiation to fire detection	120 Seconds	2 Minutes
Actuation Of Fire Detector To Transmission Of Alarm	10 Seconds	10 Seconds
Processing By Central Monitoring Station	60 Seconds	1 Minute
Receipt of call by fire service mobilising control	10 Seconds	10 Seconds
Transmission To Fire Station And Response	60 Seconds	1 Minute
Travelling Time Of Fire Service	60 Seconds	1 Minute
Arrival Protocol And Entry Preparation Time	180 Seconds	3 Minutes
Firefighter travel to operational bridgehead	270 Seconds	4 Minutes 30 Seconds
Firefighter Travel Walking Up Two Flights Of Stairs To Fire Floor (75 Seconds)	75 Seconds	1 Minute 15 Seconds
Total Time	845 Seconds	14 Minutes 5 Seconds

Nearest Fire Station

Norbury Fire Station, less than 0.5 miles, approx 1 minute travel time.

Wall Constructions

Wall Construction	Build-up
Brickwork (MX5C9S)	• Surface Finish (Brickwork) • Cavity • Insulation (PIR Insulation) • Inner Leaf (Blockwork)
Infill panels (ES723U)	• Surface Finish (Aluminium panel with rockwool then a steel panel on the back) • Insulation (Mineral Wool Insulation) • Surface Finish (Sheet Metal) • Cavity Support Frame (Timber Batten)

Wall Construction: Brickwork

Construction Reference
MX5C9S

This wall construction was identified by wall inspections 5ZB9BQ and KK28CT. The build-up, cavity barrier, and floor slab information is taken directly from inspection 5ZB9BQ. See the Inspections section of this report for full inspection details.

Construction	Effect	Risk
Brickwork (MX5C9S)	Neutral	Medium

Build-Up

4 Elements	Thickness/Depth	Material	Rating (BS EN13501)
Surface Finish	100mm	Brickwork	A1 - Non-Combustible
Cavity	170mm		
Insulation	100mm	PIR Insulation Material Brand: Kingspan	C - Combustible
Inner Leaf	100mm	Blockwork	A1 - Non-Combustible

Cavity Barriers

1 Cavity Barrier	Material
Horizontal Cavity Barrier	Loose fill mineral wool at slab

Floor Slab

Backing Wall Sits On The Floor Slab

Fire Performance

K.1 General

Materials with a calorific value (gross heat of combustion) >3 MJ/kg and ≤ 35 MJ/kg

Neutral

K.2 External Surfaces

Class A1/A2

Positive

K.3 Facings/Cladding Panels

Low HRR

Positive

K.4 Panel Construction

Not Applicable

K.5 Cavities

Cavities closed by barriers/fire stopping located in line with all of the following:

- compartment floors;
- compartment walls;
- around openings, e.g. windows, doors; and
- ventilation ducts, grilles and other openings for services

Positive

K.6 Insulation

Thermoset polymeric foams that form a stable char on fire exposure, e.g. some PIR foams

Neutral

K.7 Substrate

Masonry, >75 mm thick

Positive

K.8 Sheathing Boards

Not Applicable

K.9 Insulated Core Panels

Not Applicable

K.10 ETICS

Not Applicable

K.11 Infill / Spandrel Panels

Not Applicable

K.12 Internal Finishes

Plasterboard

Note: The plasterboard can not be confirmed to be installed as per the manufacturers instructions or ensure its method of fixing

Neutral

PAS Standard Benchmark

L7 Benchmark

DOUBLE SKIN MASONRY

As set out previously in this PAS, a building whose external walls are composed exclusively of this form of construction is not ordinarily expected to require an FRAEW. However, it is recognized that this form of wall construction might be mixed with other forms of wall construction.

This form of construction constitutes the lowest risk form of construction that might be used for external walls, for the following reasons.

- Each leaf of the wall, provided it is formed of masonry/concrete at least 75 mm thick and is generally well constructed, is likely to provide at least 30 min fire resistance.
- The masonry/concrete is likely to be of limited combustibility or better.

Given the above, this form of construction is invariably accepted as:

- not requiring cavity barriers generally, except that cavity closers are needed so that there is no free flow of air through the cavity; and
- being able to accommodate combustible materials within the cavity irrespective of building height.

This is illustrated in Diagram 8.2 in ADB Volume 1:2019 [8]. The equivalent diagram in Volume 2:2019 [9] is Diagram 9.2.

Wall Construction: Infill panels

Construction Reference
ES723U

This wall construction was identified by wall inspections IUG4VX and 176J6Q. The build-up, cavity barrier, and floor slab information is taken directly from inspection IUG4VX. See the Inspections section of this report for full inspection details.

Construction	Effect	Risk
Infill panels (ES723U)	Positive	Low

Build-Up

4 Elements	Thickness/Depth	Material	Rating (BS EN13501)
Surface Finish	55mm	Aluminium panel with rockwool then a steel panel on the back	A1 - Non-Combustible
Aluminium panel Rockwool Steel panel Slab timber frame makeup to bottom of window cill There is an 8 mm gap behind the cladding panel to slab edge			
Insulation	50mm	Mineral Wool Insulation	A1 - Non-Combustible
Surface Finish		Sheet Metal	A1 - Non-Combustible
Cavity Support Frame		Timber Batten	D - Highly Combustible

Cavity Barriers

None

Floor Slab

Backing Wall Sits On The Floor Slab

Fire Performance

K.1 General

Materials with a calorific value (gross heat of combustion) >3 MJ/kg and ≤ 35 MJ/kg

Neutral

K.2 External Surfaces

Class A1/A2

Positive

K.3 Facings/Cladding Panels

Mechanically fixed

Positive

K.4 Panel Construction

Limited size of gaps between panels (Typically <10 mm)

Neutral

K.5 Cavities

Facings into the cavity at least Class A2

Positive

K.6 Insulation

Mineral/glass insulation

Positive

K.7 Substrate

Masonry, >75 mm thick

Positive

K.8 Sheathing Boards

Not Applicable

K.9 Insulated Core Panels

Non-combustible insulation encapsulated in metal

Positive

K.10 ETICS

Not Applicable

K.11 Infill / Spandrel Panels

Metal faced, with Class A1/A2 core

Positive

K.12 Internal Finishes

Plasterboard

Note: The plasterboard can not be confirmed to be installed as per the manufacturers instructions or ensure its method of fixing

Neutral

PAS Standard Benchmark

L10 Benchmark

SANDWICH PANEL SYSTEMS -

Sandwich panels are formed of insulation between two sheets of metal. The particular materials used in sandwich panel construction determine the potential hazard that could be presented if the sandwich panel becomes involved in fire (see Table L.2 and Table L.3). Whether or not the insulating core of sandwich panels will become exposed to fire depends upon the manner in which joints and edges are addressed.

Sandwich panels might be incorporated within an external wall construction (potentially as loadbearing elements) and overclad by a rainscreen, or might be exposed to the exterior, effectively as a rainscreen in their own right.

BR135 Benchmark

We have compared this external wall type to the cladding systems found on the BR135 database and we did not find a cladding system with the configuration and components that would constitute an exact match to what our inspections found on the Property.

Façade Configuration: QH14SY

Items in Façade

4 Items

	Effect	Risk
Wall Construction Brickwork (MX5C9S)	Neutral	Medium
External Door Single Leaf Entrance Doors (8WNS3P)	Neutral	Medium
External Window Top, Mid, Side Hung Casements (JYQK7N)	Neutral	Medium
External Window Other (NVD9ZU)	Positive	Low

Façade Configuration Risk Factors

N.1 Building Height/Cladding Height

18 m to 30 m

Negative

N.2 Height of Base of Cladding (Above Ground)

<2 m

NOTE At this height, the likelihood of a fire originating externally (e.g. involving a parked vehicle or waste skip started either accidentally or deliberately) igniting the cladding is highly likely.

Negative

N.3 Extent of Cladding

Entire façade covered

Negative

N.4 Cavities & Openings

Continuous vertically running cavity with cavity barriers or fire stops as appropriate

Positive

N.5 Infill / Spandrel Panels

Not Applicable

N.6 Setbacks - Combustible Cladding Setback from Wall Edge

Not Applicable

N.7 Overhangs & Projections

Not Applicable

N.8 Proximity to Windows and Other Openings to the Accommodation

Horizontally adjacent to windows and openings, but not vertically in line with such openings, such that fire and smoke spread into the buildings, causing secondary fires, as a result of direct flame impingement, is possible, but only under adverse wind conditions

Neutral

N.9 Presence of vents or other openings for services in the Façade

Where vents pass through a cavity, either:

- the cavity does not include combustible materials; or
- the cavity is faced on either side by brick or concrete at least 75 mm thick and any combustible insulation in the cavity is not thermoplastic

Neutral

N10. Proximity of Combustible Elements of a Façade to Escape Route Windows & Other Openings

Remote from windows and openings, such that fire spread into the escape routes to give rise to untenable conditions is remote

Neutral

N.11 Attachments

Not Applicable

N.12 Proximity of Combustible Elements of a Façade to a Neighbouring Building

Windows or other openings in adjacent or abutting neighbouring buildings are sufficiently distanced that direct flame impingement from a fire in the neighbouring building is unforeseeable

Neutral

Risk Factor Analysis

Conclusion: The external surface is a masonry brickwork, this offers strong fire resistance due to its non-combustible properties and high thermal mass. Bricks are inherently resistant to fire and do not ignite, burn, or contribute fuel to a fire, making them excellent for containing flames and preventing fire spread.

During a fire, brickwork reacts by absorbing and gradually dissipating heat, though intense, prolonged heat may cause cracking or spalling (surface breakage) due to thermal expansion. Despite these effects, the overall structure of brick masonry generally remains intact, ensuring the wall continues to act as a robust barrier against fire, heat, and smoke, which enhances its reliability in fire protection.

Beyond the brickwork is a cavity ahead of the insulating layer. The thermal insulation was identified to be PIR (Polyisocyanurate), this is viewed as presenting a medium risk to the contribution to fire spread. This means this product is able to sustain itself without the presence of an external heat source.

The heat from the flame causes the PIR insulation to undergo pyrolysis, which results in the black char that is formed on the surface of the board. This char layer creates a barrier inhibiting the oxygen from diffusing into the foam and may lead to self-extinguishment after a short period.

However, it should be noted that the final fire performance of plastic foams such as PIR strongly depends on the chemical composition and manufacturing process. e.g., content of isocyanate linkages and type of isocyanate-reactive component for PIR.

The insulation was not mechanically secured to the inner leaf block substrate. The inner leaf blockwork presents the same fire behaviour as the outer leaf.

Due to the external wall construction (double skin masonry), cavity barriers are not required in line with compartment walls and floors.

Around aperture openings, no cavity barriers were identified but the windows were viewed to close the cavity to assist in preventing the free flow of air within the cavity to aid in the pyrolysis of the combustible insulation.

uPVC window frames appear to be installed within this wall type. Fire tests have shown that UPVC materials, being naturally flame retardant throughout their product life, will not cause, support or enhance the development of accidental fire and are in fact self-extinguishing. Polyvinyl Chloride (PVC) possess excellent fire performance properties although are classified as Euroclass E rating. The PVC typically has 56.8% chlorine as its base polymer which offers good fire performance properties. PVC has an oxygen index of 22 so when ignited and reaches an oxygen index of 21 it is self-extinguishing when not subjected to continued heat or flame. Such as the exterior surface of the building when we take into consideration wind and other environmental factors. It is accepted that the existing material is not a recognised material in terms of closing of a cavity, however, will provide a degree of separation between the aperture and cavity.

A glazed curtain walling system is provided centrally within the property and is supported via a suspected aluminium framing system. All materials installed as part of the curtain walling system are non-combustible, and would promote rapid fire spread.

The plasterboard inner leaf is considered limited in combustibility to prevent the passage of fire through the external wall system. No conclusion can be formed on the installation, fixing methods and spacings of fixings of the plasterboard sheets to confirm its installation as per the manufacturers guidelines.

It is accepted that the brickwork wall type begins at ground floor level and extends to the full height of the property,

however, the external facing construction provided is non-combustible.

It is accepted that the property height is considered to have a negative impact in accordance with PAS 9980:2022, however, multiple staircases are provided from all floors to aid relavent persons with a safe and quick escape. The majority of the fire safety features provided to the block are in line with expectations for a general needs block of this size. The property operates a stay put policy and the existing fire safety provisions within the block would appear to support that.

In the event of a fire, fire spread is likely to be at a lower rate within expectations for a building of this height, but nevertheless, tolerable rate, given the circumstances at the building in question; and/or

- a) fire spread is unlikely to give rise to widespread secondary fires resulting in occupants being significantly harmed or prevented from escaping.
- b) fire is unlikely to spread in such a way that the communal means of escape will be compromised before occupants can safely use them to escape.

It is our professional opinion that there is no requirement for remediation within this wall type.



Façade Configuration: 22D8RI

Items in Façade

4 Items

	Effect	Risk
Wall Construction Infill panels (ES723U)	Positive	Low
External Door Single Leaf Entrance Doors (8WNS3P)	Neutral	Medium
External Window Top, Mid, Side Hung Casements (JYQK7N)	Neutral	Medium
External Window Other (NVD9ZU)	Positive	Low

Façade Configuration Risk Factors

N.1 Building Height/Cladding Height

18 m to 30 m

Negative

N.2 Height of Base of Cladding (Above Ground)

2 m to 5 m

NOTE At this height, the scope for a fire originating externally (e.g. involving a parked vehicle or waste skip started either accidentally or deliberately) igniting the cladding is considered possible, but not likely at an early stage in the development of the fire.

Neutral

N.3 Extent of Cladding

Limited in extent such as to delay fire spread over the external walls

Neutral

N.4 Cavities & Openings

Cavity limited in extent and running horizontally only

Neutral

N.5 Infill / Spandrel Panels

Where spanning a compartment boundary and in particular a compartment floor

Negative

N.6 Setbacks - Combustible Cladding Setback from Wall Edge

Not Applicable

N.7 Overhangs & Projections

Not Applicable

N.8 Proximity to Windows and Other Openings to the Accommodation

Horizontally adjacent to windows and openings, and vertically in line with such openings, such that fire and smoke spread into the buildings, causing secondary fires, as a result of direct flame impingement, is highly likely

Negative

N.9 Presence of vents or other openings for services in the Façade

Not Applicable

N10. Proximity of Combustible Elements of a Façade to Escape Route Windows & Other Openings

Remote from windows and openings, such that fire spread into the escape routes to give rise to untenable conditions is remote

Neutral

N.11 Attachments

Not Applicable

N.12 Proximity of Combustible Elements of a Façade to a Neighbouring Building

Windows or other openings in adjacent or abutting neighbouring buildings are sufficiently distanced that direct flame impingement from a fire in the neighbouring building is unforeseeable

Neutral

Risk Factor Analysis

Conclusion: Aluminium panels are provided as part of the facade configuration. The external surface is aluminium which is considered to be non-combustible and would achieve a fire classification of Class A1 when tested in accordance with EN13501-1 and the rear surface is steel, which is also considered to be non-combustible. Compressed Rockwool is used within the panel as insulation and the panels are mechanically fixed to a timber framing support system, which in turn, is fixed to the masonry substrate.

The aluminium panels cladding have been mechanically fixed to timber battens which have been considered to be untreated and natural.

The timber is presents as a medium contributor to fire spread which is able to self-sustain without the presence of an external heat source.

Timber, although combustible, is used in construction with regards to its quality to provide good fire resistance. During a fire timber has a number of phase changes; (this may vary on the timber species)

- At ambient temperature, the moisture content of typical softwoods is approximately 10-14% of its weight
- Gradual heating, this percentage changes dramatically as the timber temperature approaches 90-120°C. Most of the moisture evaporates from the heated surface,
- Increasing heat energy, the timber locally dehydrates and begins to degrade at temperatures approaching 300°C

These timber battens are mechanically fixed to the blockwork outer leaf which creates a void, but given the position of these running vertically, they may offer a limited period of fire resistance to delay horizontal fire spread.

The mineral wool is viewed as presenting a non-combustible product. This means this product will not ignite as such this poses a low risk to the contribution of fire and external fire spread.

Around aperture openings, no cavity barriers were identified but the windows were viewed to close the cavity to assist in preventing the free flow of air within the cavity to aid in the pyrolysis of the combustible insulation.

uPVC window frames appear to be installed within this wall type. Fire tests have shown that UPVC materials, being naturally flame retardant throughout their product life, will not cause, support or enhance the development of accidental fire and are in fact self-extinguishing. Polyvinyl Chloride (PVC) possess excellent fire performance properties although are classified as Euroclass E rating. The PVC typically has 56.8% chlorine as its base polymer which offers good fire performance properties. PVC has an oxygen index of 22 so when ignited and reaches an oxygen index of 21 it is self-extinguishing when not subjected to continued heat or flame. Such as the exterior surface of the building when we take into consideration wind and other environmental factors. It is accepted that the existing material is not a recognised material in terms of closing of a cavity, however, will provide a degree of separation between the aperture and cavity.

A glazed curtain walling system is provided centrally within the property and is supported via a suspected aluminium framing system. All materials installed as part of the curtain walling system are non-combustible, and would promote rapid fire spread.

The plasterboard inner leaf is considered limited in combustibility to prevent the passage of fire through the external wall system. No conclusion can be formed on the installation, fixing methods and spacings of fixings of the plasterboard sheets to confirm its installation as per the manufacturers guidelines.

It is accepted that the aluminium panel system begins at ground/first floor level and extends to the full height of the property, however, the majority of the construction provided is non-combustible and the external facing construction is non-combustible, therefore it is unlikely to be affected in the early stages of a fire.

It is accepted that the property height is considered to have a negative impact in accordance with PAS 9980:2022, however, multiple staircases are provided from all floors to aid relavent persons with a safe and quick escape. The majority of the fire safety features provided to the block are in line with expectations for a general needs block of this size. The property operates a stay put policy and the existing fire safety provisions within the block would appear to support that.

In the event of a fire, fire spread is likely to be at a lower rate within expectations for a building of this height, but nevertheless, tolerable rate, given the circumstances at the building in question; and/or

- a) fire spread is unlikely to give rise to widespread secondary fires resulting in occupants being significantly harmed or prevented from escaping.
- b) fire is unlikely to spread in such a way that the communal means of escape will be compromised before occupants can safely use them to escape.

It is our professional opinion that there is no requirement for remediation within this wall type.



APPENDIX

Asset Information

Client Name

Sandwell Metropolitan Council

Responsible Person

Sandwell Metropolitan Council

Contact Details

0121 569 0162 - Lisa Ellis

Fire Alarm System

There is no BS5839 (Part 6 or Part 1) Fire detection/alarm system provided in the common areas of the building. The smoke detection provided is part of the smoke ventilation system with a control panel located within the service riser cupboard.

Emergency Lighting

Installed in communal parts

Emergency Lighting

Emergency lighting appears to conform to the requirements of BS5266-1 design standard. The system appears to provide adequate coverage and be in good working order (indicator lights active on luminaires). Luminaires appear to be correctly sited and appear to provide adequate lighting.

Portable Fire Fighting Equipment

No Portable Fire Fighting Equipment installed

Smoke Control

Natural smoke control, Smoke control installed

Smoke Control

The stairs and/or lobbies are provided with adequate permanent or manually operated ventilation openings for the control of smoke. Manual openable windows within the stairwell and the stairs and lobbies are provided with an automatic smoke ventilation system

Suppression Systems

Partial sprinkler system installed (Detailed in Description)

Suppression System

A suppression system is installed within high risk areas such as the refuse/bin store

Fire Fighting Facilities

Dry Riser

Fire Fighting Facilities

Dry riser outlets were located on each floor within the firefighting lobby area, ensuring accessible water supply for

firefighting operations. This placement allows for efficient connection of firefighting hoses, providing vital water access to emergency services during fire incidents across all floor levels.

Access for fire-fighting vehicles

Adequate access for firefighting vehicles
NOTE This is where access is possible in line with benchmark guidance on access for firefighting vehicles from Approved Document B, taking into account the size of the building (floor area), height of the building and whether fire mains are present in the building.

Fire Hydrant Location/ Water Supply

Public fire hydrant is available on Moor Lane. Fire hydrant is located on the front entrance of the building and is detailed within the PIB.
Public fire hydrants can be located: <https://dataservices.riscauthority.co.uk/map/index>

Secure Information Boxes

Secure information box (SIB) installed

Signage

Appropriate signage installed throughout premises

Property Type

Residential, Residential Purpose-built

Building Era / Age

Known Build Date

Known Build Date

1963

Building Height

Approximately 24m to the highest occupied floor level. (calculated at 3m per floor as per PAS 9980-2022 section 3.1.22)

Number of Storeys (Ground and above)

9

Number of Flats

35

Flat Types

Single Storey

Structural Wall Material

Concrete / Brick

Structural Floor Material

Reinforced Concrete

Structural Stairs Material

Concrete

Construction (Details)

Traditional concrete frame and brick construction

Exterior Cladding

FRAEW Completed on Exterior Cladding

Exterior Cladding (Details)

Brick - Aluminium sandwich panels

Electronic Entrance System

Yes

Carpark

External/Outdoor Carpark

Employees

Day staff

Employees (Extended)

No staff on site (Occasional staff attendance expected - low numbers anticipated)

Residents Approx number of Residents

Yes 70

Residents (Extended)

Assumed to be two residents per flat (Exact numbers not known)

Visitors

Day

Visitors (Extended)

Residential block - low number of visitors expected at any one time

People With Reduced Mobility

Other

People with Reduced Mobility (Extended)

General Needs - No information however, General Needs premises so occupants are typical of the general population

Lone Workers

None

Young Persons Employed in the Premises

None

Escapes & Exits

There are sufficient fire exits from the premises of suitable width and within acceptable travel distances. These will

allow all persons in the premises to evacuate safely in the event of fire. Emergency exits open outwards in escape direction.

Number Of Internal Escape Stairs

2

Number Of Final Exits

2

External Means Of Escape

None Present

Types Of Lifts Installed

Passenger

Evacuation Chairs Installed

No

Stairwells Protected / Lobbied

Yes

Flat Doors Open Onto Stairs

No

Current Evacuation Strategy

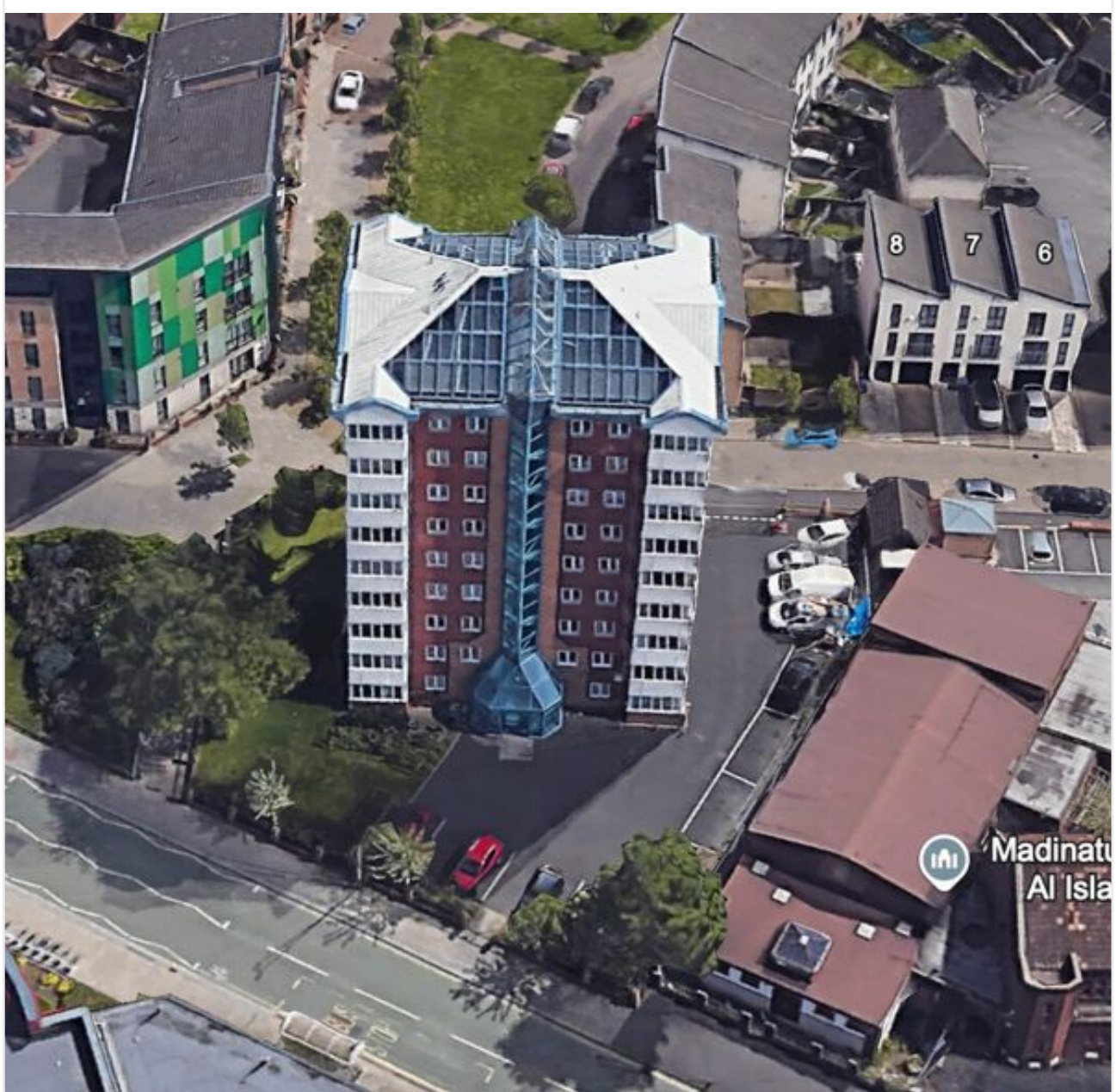
Stay Put

What is the recommended evacuation strategy for the property?

Stay Put

Aerial Perspective: Braybrook House Moor Lane West Brom B70 7AU

Aerial Perspective (picture sourced from Google Earth)



Elevations

Photo

Name



West Elevation (Front Entrance)



South Elevation



East Elevation



North Elevation

Inspections

Elevation Location

Inspection

Elements



Inspection: IUG4VX

West Elevation
Compartment Floor

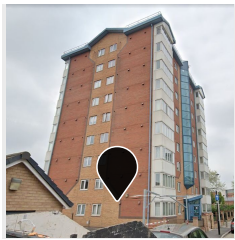
- Surface Finish (Aluminium panel with rockwool then a steel panel on the back)
- Insulation (Mineral Wool Insulation)
- Surface Finish (Sheet Metal)
- Cavity Support Frame (Timber Batten)



Inspection: 176J6Q

East Elevation
Compartment Floor

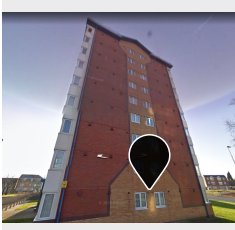
- Surface Finish (Aluminium panel rockwool steel panel)
- Insulation (Mineral Wool Insulation)
- Surface Finish (Sheet Metal)
- Cavity Support Frame (Timber Batten)



Inspection: 5ZB9BQ

South Elevation
Compartment Floor

- Surface Finish (Brickwork)
- Cavity
- Insulation (PIR Insulation)
- Inner Leaf (Blockwork)



Inspection: KK28CT

North Elevation
Vertical Junction

- Outer leaf
- Cavity
- Insulation (PIR Insulation)
- Inner Leaf (Blockwork)
- Other

Inspection: IUG4VX

Elevation • Location
West Elevation • Compartment Floor



Name/Summary

Sample Area 1

Build-Up

4 Elements	Thickness/Depth	Material	Photo Ref.	Rating (BS EN13501)
Surface Finish	55mm	Aluminium panel with rockwool then a steel panel on the back	5, 6, 7, 8, 9	A1 - Non-Combustible
Aluminium panel Rockwool Steel panel Slab timber frame makeup to bottom of window cill There is an 8 mm gap behind the cladding panel to slab edge				
Insulation	50mm	Mineral Wool Insulation	7	A1 - Non-Combustible
Surface Finish		Sheet Metal	10	A1 - Non-Combustible
Cavity Support Frame		Timber Batten	11	D - Highly Combustible

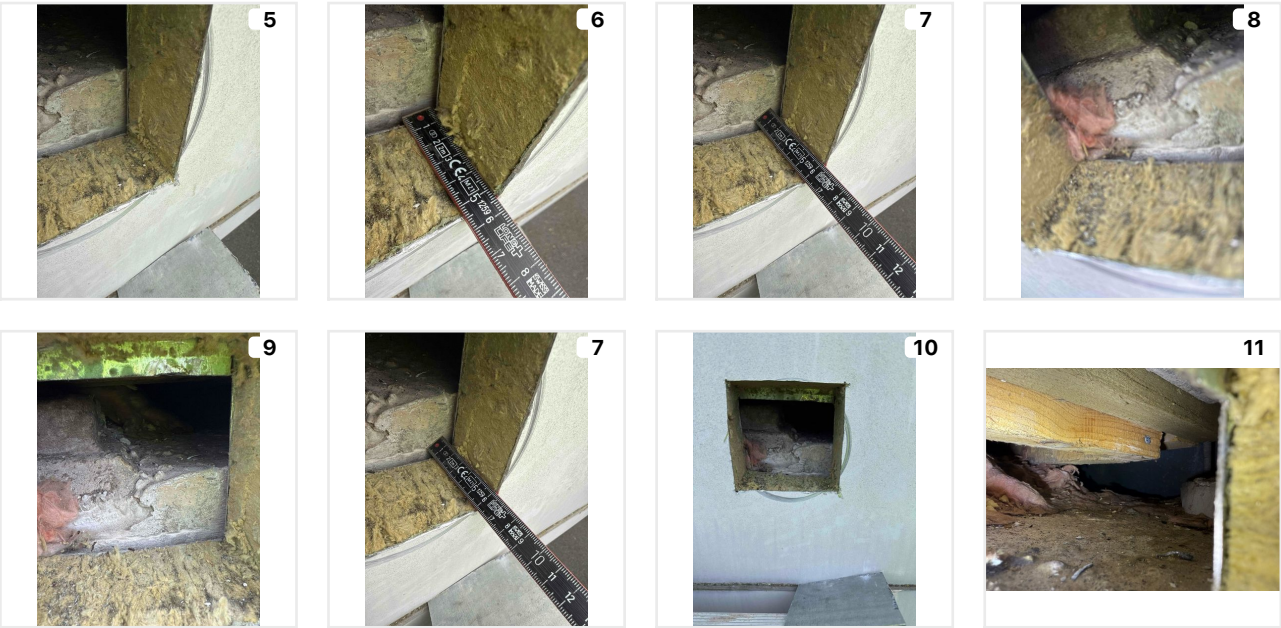
Cavity Barriers

None

Floor Slab

Backing Wall Sits On The Floor Slab

Build-up Photos



Inspection Photos



Inspection: 176J6Q

Elevation • Location
East Elevation • Compartment Floor



Name/Summary

Sample Area 2

Build-Up

4 Elements	Thickness/Depth	Material	Photo Ref.	Rating (BS EN13501)
Surface Finish	2mm	Aluminium panel rockwool steel panel	13, 14, 15, 16, 17, 18, 19, 20, 21	A1 - Non-Combustible
Aluminium panel bonded to rockwool then a steel panel				
Slab to panel 23mm gap				
A steel beam above slab 80mm from timber to back of panel				
Insulation	50mm	Mineral Wool Insulation	13	A1 - Non-Combustible
Surface Finish	2mm	Sheet Metal	22	A1 - Non-Combustible
Cavity Support Frame		Timber Batten	22	D - Highly Combustible

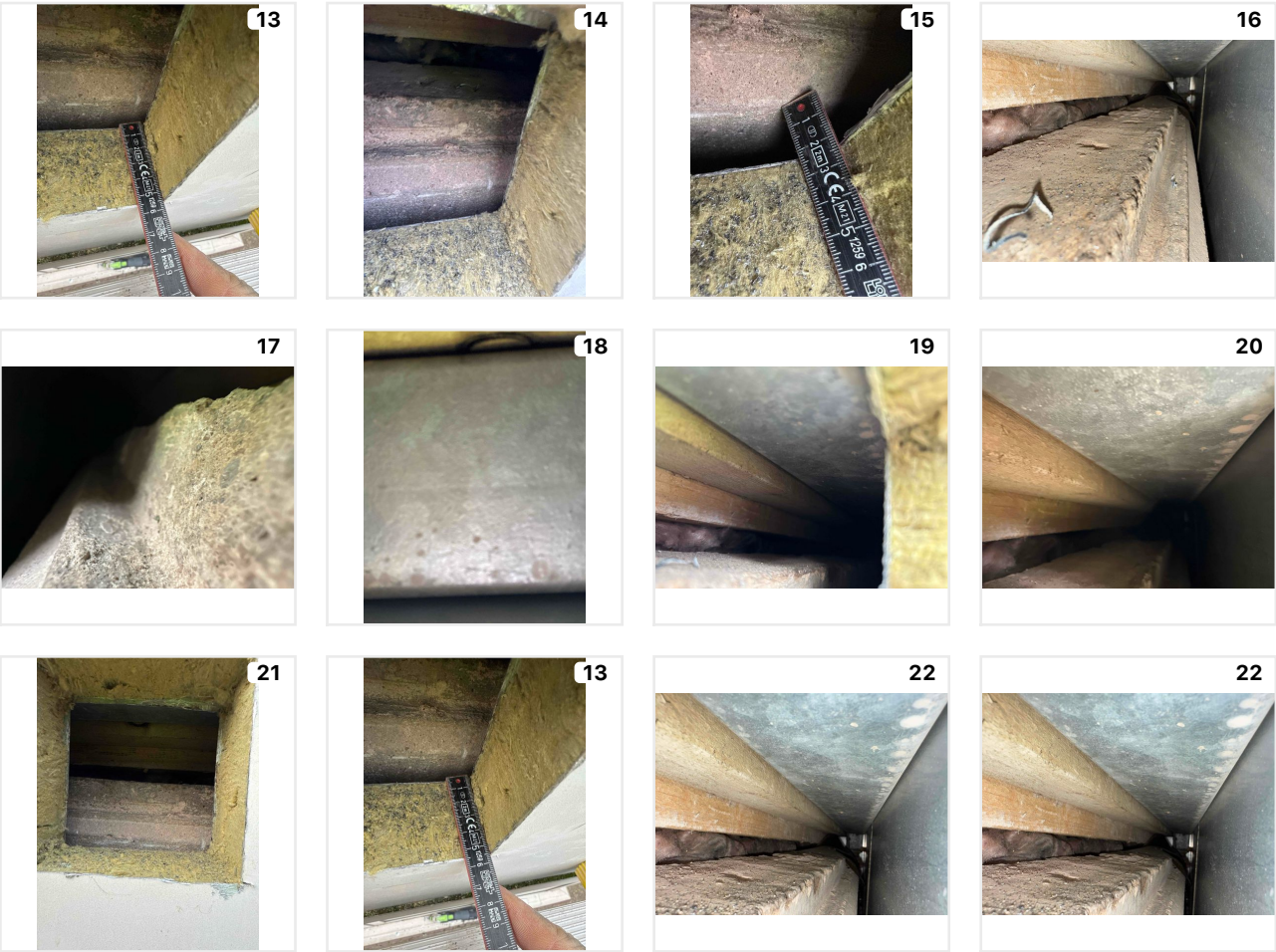
Cavity Barriers

None

Floor Slab

Backing Wall Sits On The Floor Slab

Build-up Photos



Inspection Photos



Inspection: 5ZB9BQ

Elevation • Location
South Elevation • Compartment Floor



Name/Summary

Sample Area 3

Build-Up

4 Elements	Thickness/Depth	Material	Photo Ref.	Rating (BS EN13501)
Surface Finish	100mm	Brickwork	25	A1 - Non-Combustible
Cavity	170mm		26, 27	
Insulation	100mm	PIR Insulation Material Brand: Kingspan	28, 29	C - Combustible
Inner Leaf	100mm	Blockwork	30	A1 - Non-Combustible

Cavity Barriers

1 Cavity Barrier	Material	Photo Ref.
Horizontal Cavity Barrier	Loose fill mineral wool at slab	31, 32

Floor Slab

Backing Wall Sits On The Floor Slab

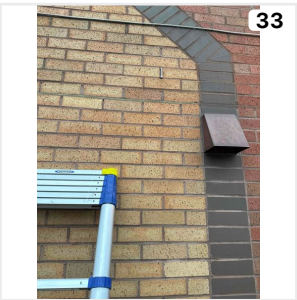
Build-up Photos



Cavity Barrier Photos



Inspection Photos



Inspection: KK28CT

Elevation • Location
North Elevation • Vertical Junction



Name/Summary

Sample Area 4

Build-Up

5 Elements	Thickness/Depth	Material	Photo Ref.	Rating (BS EN13501)
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Outer leaf	100mm		34, 35	A1 - Non-Combustible
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Brick

Cavity	180mm		36, 37	
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Insulation	100mm	PIR Insulation Material Brand: Kingspan	38, 39, 40	C - Combustible
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Inner Leaf	100mm	Blockwork	41, 42	A1 - Non-Combustible
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Other			43, 44	A1 - Non-Combustible
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Steel column in cavity with pir covering the steel

Cavity Barriers

1 Cavity Barrier	Material	Photo Ref.
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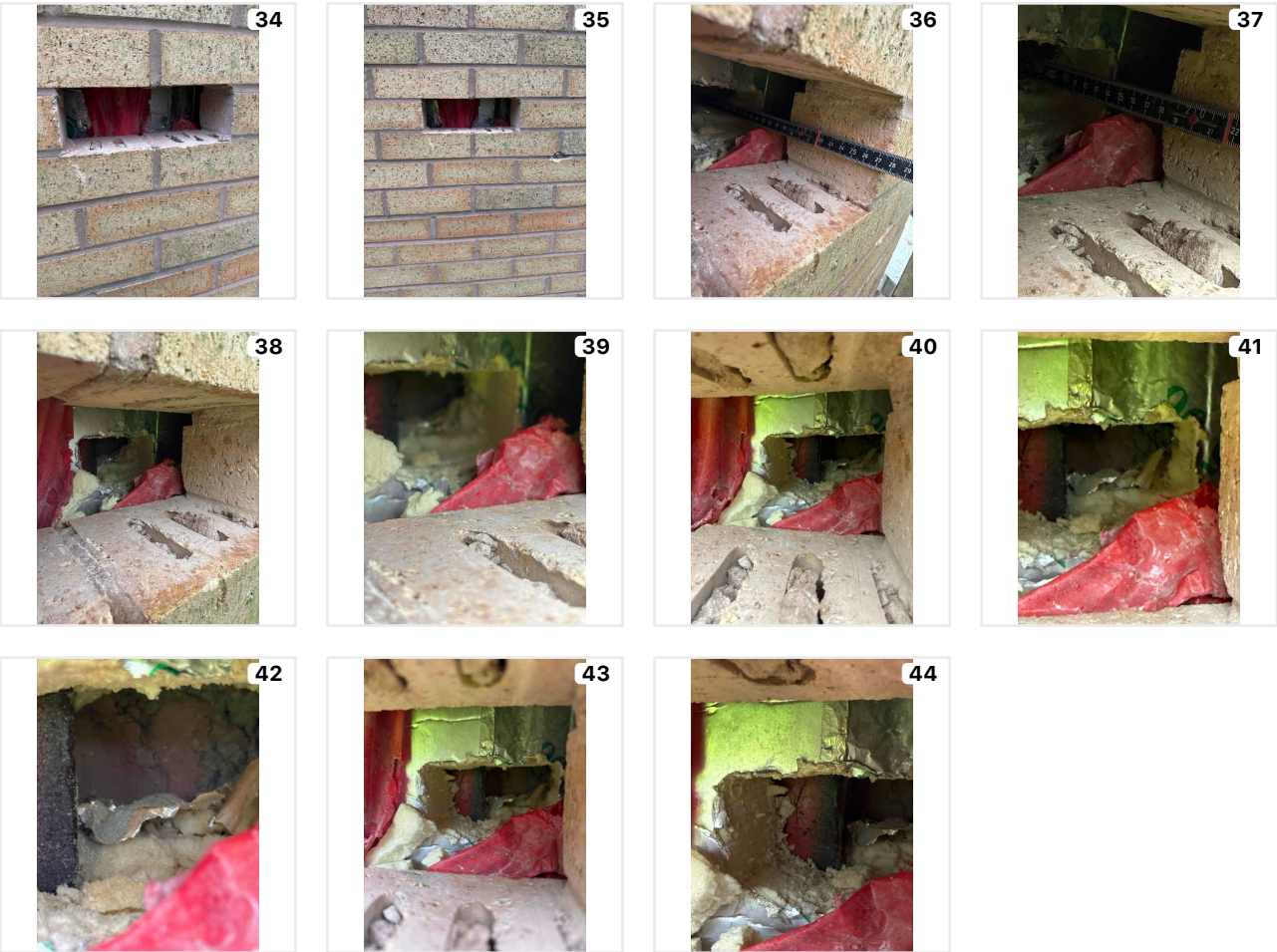
Vertical Cavity Barrier	Cavity Sock	45, 46, 47, 48, 49, 50, 51
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Cavity sock is on top of PIR and to back of brickwork but there is no mineral wool inside this section of vertical barrier also window jam see pic

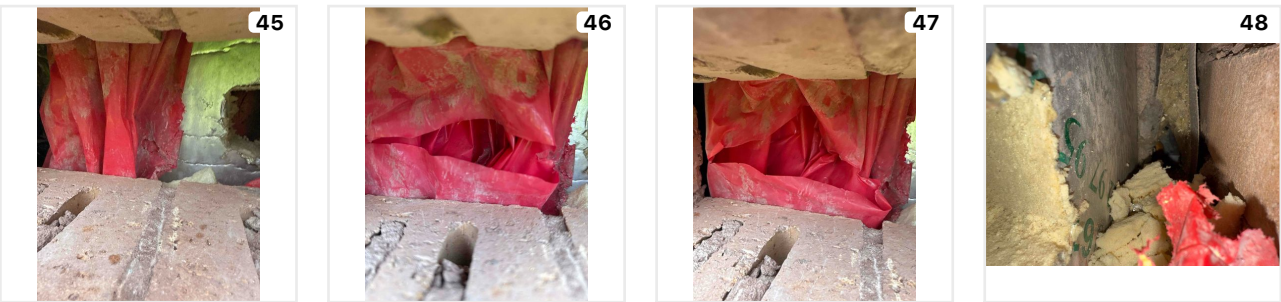
Floor Slab

Reinforced concrete

Build-up Photos



Cavity Barrier Photos





Inspection Photos



External Windows

Photo

External Window



Top, Mid, Side Hung Casements (JYQK7N)



Other (NVD9ZU)

External Window: Top, Mid, Side Hung Casements

External Window Reference
JYQK7N

Details

Surface Material

uPVC

Frame Material

uPVC

Infill / Panel Material

Toughened Glass

Photos



External Window: Other

External Window Reference
NVD9ZU

Details

Surface Material

Aluminium

Infill / Panel Material

Toughened Glass

Frame Material

Aluminium

Details

Glazing curtain wall

Photos



External Doors

Photo

External Door



Single Leaf Entrance Doors (8WNS3P)

External Door: Single Leaf Entrance Doors

External Door Reference
8WNS3P

Details

Surface Material

Timber

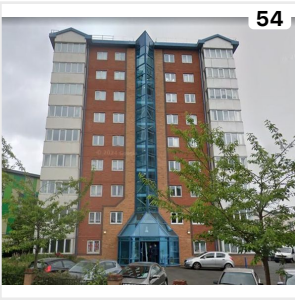
Frame Material

Timber

Infill / Panel Material

Toughened Glass

Photos



Plan: West Elevation



Plan: South Elevation



Plan: East Elevation



Plan: North Elevation



Photos



Photos Continued...



12



13



14



15



16



17



18



19



20

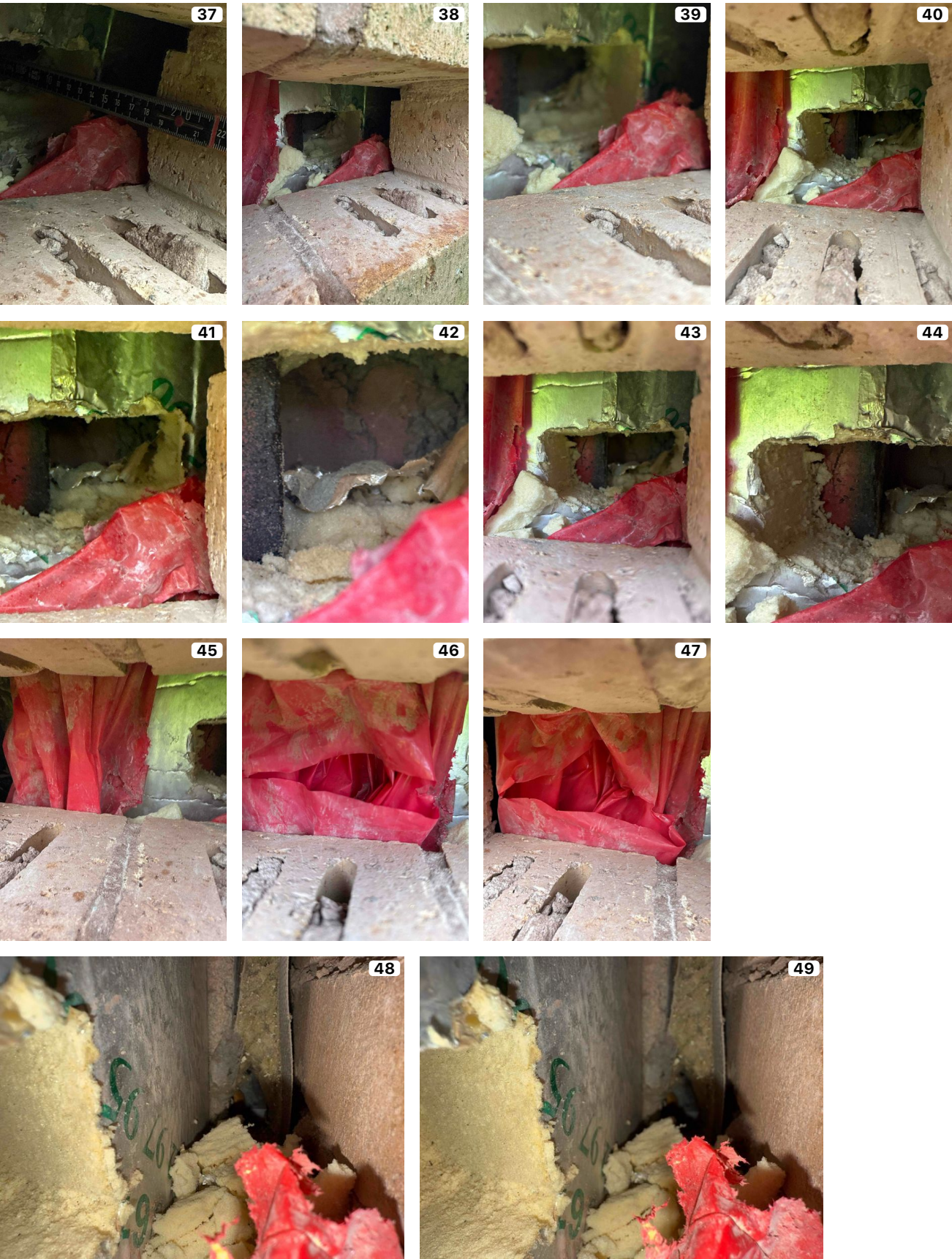


21

Photos Continued...



Photos Continued...



Photos Continued...





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