



FIRNTEC
BUILDING COMPLIANCE

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

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Survey Date 28/07/2024

Suggested Review Date 28/07/2025

PAS 9980 STEP 2-5 (FRAEW)

ST MARYS

St Mary's House
Summer Street
West Brom
B71 4HZ



Table of Contents

Cover Page	1
Table of Contents	2
Summary	4
Abbreviation/ Term Definition	6
Statement of Competency	7
Terms of Reference	8
Executive Summary	10
Fire Strategy	13
Wall Constructions	18
Wall Construction: Wall Type 1 Traditional cavity brickwork with PIR/PUR insulation (TB8YN1)	19
Wall Construction: Wall type 2 PPC Rainscreen cladding with mineral wool over brickwork (RAWTMU)	23
Façade Configuration: JEM7FY	28
Façade Configuration: W6MQM1	30
Appendix	32
Asset Information	33
Aerial Perspective: Aerial image of St Marys House and surrounding access roads	38
Elevations	39
Inspections	40
Inspection: 81TVQ4	42
Inspection: 1W89EG	44
Inspection: CZ4KMH	46
Inspection: 2GSQPW	47
Inspection: KYKWMS	48
Inspection: GLAESA	50
Inspection: NDV1MP	52
Inspection: T6U3A8	53
Inspection: EXWDP9	54
Attachments & Balconies	56
Attachment: Cantilever Balcony (49D5BX)	57
Penetrations	59
Penetration: Air Brick (9AIHZI)	60

Table of Contents Continued

External Windows	61
External Window: YZNGDA	62
External Doors	63
External Door: Single Leaf Entrance Doors (7YTBZ8)	64
External Door: Single Leaf Entrance Doors (W4TDXB)	65
Plans & Elevations	66
Photos	70

Summary

PAS 9980 Step 2-5 (FRAEW)

Assessment and Certificate Reference

RB-ZEYHGS

Assessed On, By

28/07/2024, Douglas Murray (Building Safety Consultant)

(BSc Building Surveying, ABBE DipFRA, AIFireE, AssocRICS, MFPA)

Produced For the Responsible Person

Sandwell Metropolitan Borough Council

Specification Conforms To

Our own internal quality system.

Assessment Scope

Assessment applies only to the building specified.

Recommended Review Date

28/07/2025

Assessed Property

Property Name

St Marys

Property Reference

RB-XSMGLL

Address

St Mary's House

Summer Street

West Brom

B71 4HZ

Assessing Organisation

Firntec Ltd

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

0345 646 1566 — www.firntec.com

Assessor Remarks

The development of St Marys House was commissioned by West Bromwich County Borough Council 1966, and building work was awarded to the contractors Wates who completed building work 1967. The building comprises of 17 floors including ground and houses 66 individual self contained flats. The present day authority is Sandwell Metropolitan Borough Council.

The structure appears to be of reinforced concrete frame with reinforced staircores, lift core, floor slabs and foundations. The external walls are formed from a hand laid brick outer leaf and an internal leaf of concrete blockwork with projecting balconies on all occupied floors.

A cladding system and other improvement work went ahead in 2002 (planning reference DD/02/38700). The work focused on external refurbishments including installation of a solid aluminium polyester powder coated rainscreen cladding system, replacement Polyester Powder Coated (PPC) windows and front entrance porch, and internal alterations which are not listed.

This report has been prepared for Sandwell Metropolitan Borough Council by Firntec Ltd Building Compliance. This survey has included consideration of the following pieces of legislation and other guidance relevant at the time of reporting:

This report has been prepared for Sandwell Metropolitan Borough Council by Firntec Ltd Building Compliance. This survey has included consideration of the following pieces of legislation and other guidance relevant at the time of reporting:

The RRO (FSO) 2005

The Fire Safety Act 2021

The Building Safety Act 2022

Approved Document B of building regulations 2006

This report was prepared by Douglas Murray (BSc Building Surveying, ABBE DipFRA, AIFireE, AssocRICS, MFPA) who is a Building Surveyor with 25 years of fire related and construction experience in both new build and refurbishment projects on behalf of Firntec Ltd. Douglas is a member of the Royal Institute of Chartered Surveyors, the Institute of Fire Engineers, the Fire Protection Association, and an ABBE qualified Fire Risk Assessor. Douglas has specialised within Fire Safety and cladding investigations for eight years and has held senior posts with London and nationally based Registered Social Landlords. Douglas advises on and produces Building Safety Case Reports and has taken the lead for various clients securing, quality checking and completing Type 1-4 Fire Risk Assessments, completing Fire Risk Assessments of External Walls (FRAEW), leading on Intrusive investigative surveys, and preparing fire strategy documents. Part of the work Douglas completes, supports and evidence claims brought forward under the Defective Premises Act in the context of non-compliance and fire safety defects within multi occupancy buildings.

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).

Executive Summary

External Wall Systems and Attachments on the Building

9 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.

7 Items	Effect	Risk
Wall Construction Wall Type 1 Traditional cavity brickwork with PIR/PUR insulation (TB8YN1)	Neutral	Low
Wall Construction Wall type 2 PPC Rainscreen cladding with mineral wool over brickwork (RAWTMU)	Positive	Low
Attachment Cantilever Balcony (49D5BX)	Positive	Low
Penetration Air Brick (9AIHZI)		
External Window YZNGDA	Positive	Low
External Door Single Leaf Entrance Doors (7YTBZ8)	Positive	Low
External Door Single Leaf Entrance Doors (W4TDXB)		

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.

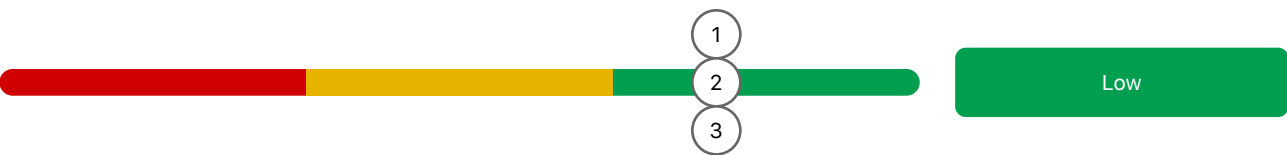
The final **Stage 3** overlays the risk factors arising from consideration of the fire strategy and fire hazards (including limitations of fire and rescue service intervention).

Risk Factor Analysis 1

This analysis looks at façade configuration **JEM7FY** which includes wall construction **TB8YN1**.

Conclusion: 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.

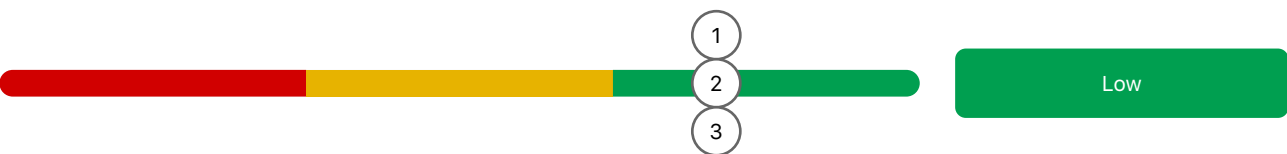


Risk Factor Analysis 2

This analysis looks at façade configuration **W6MQM1** which includes wall construction **RAWTMU**.

Conclusion: 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.



Overall Building Risk Rating



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

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

Positive

Photo Ref. 1, 2

F.3 Escape Route Design

Single staircase, with lobby approach

Photo Ref. 3, 4, 5, 6, 7, 8, 9, 10

Negative

F.4 Compartmentation

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

Positive

F.5 Smoke Control

Automatic Opening Vents (AOVs): These are installed in the staircases to provide smoke ventilation. Specifically, AOVs are present on the 16th and 7th floors.

Smoke Ventilation: The communal staircases are protected with automatic smoke ventilation, which is maintained and tested twice yearly.

Ventilation and Access: Windows in communal areas can only be opened by operating the smoke vents with a key.

Photo Ref. 11, 12, 13

Positive

F.6 Fire Alarm & Detection

Within Flats: Smoke detection is installed to LD2 and LD3 standards. The detectors are located in various areas:

LD3: Hallways (flat 20, 38, 43, 54)

LD2: Living rooms, kitchens, and hallways (flat 43)

Communal Areas: There is no fire detection system in communal areas, due to concerns about vandalism and false alarms. However, the Stay Put Unless policy is in place for evacuation.

Photo Ref. 14, 15, 16, 17

Positive

F.7 Fire Suppression

A deluge sprinkler system is installed in the bin store only

Positive

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.

Photo Ref. 18, 19, 20, 21

Positive

F.9 Rising Mains

Suitable rising main present. dry Riser: There is a dry riser that serves the building, with the dry riser inlet located in the ground-floor dry riser cupboard. Maintenance is conducted twice yearly, with annual hydraulic testing. the FH is located on the North West corner of the boundary approximately 5 metres from the building

Photo Ref. 22, 23

Positive

F.10 Lifts Used By Firefighters

Absence of firefighting lift in buildings above 18 m

Photo Ref. 24, 25, 26, 27

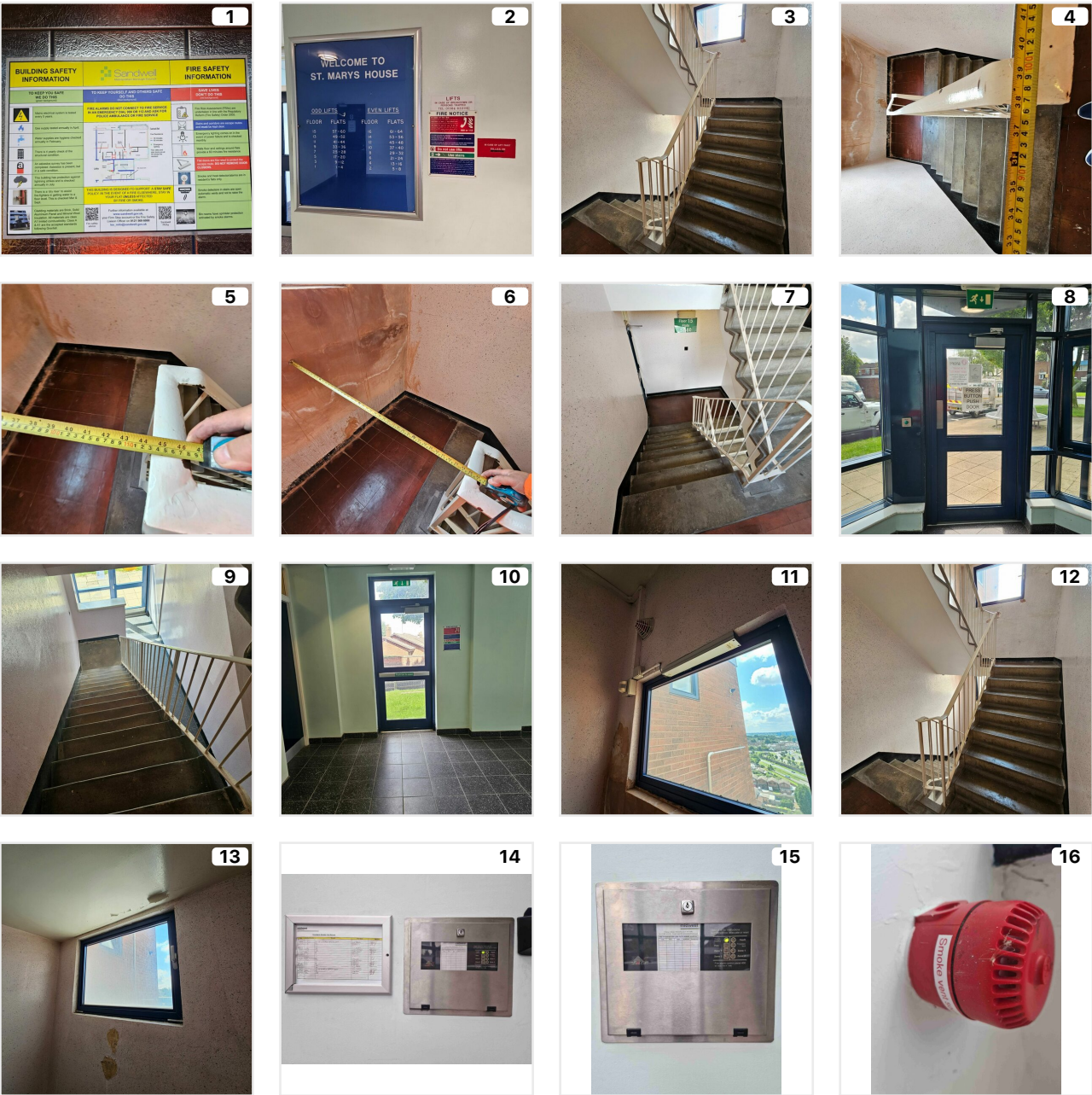
Negative

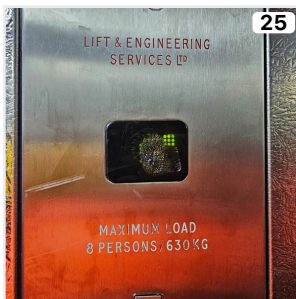
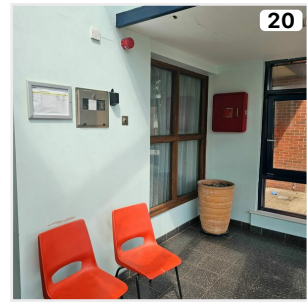
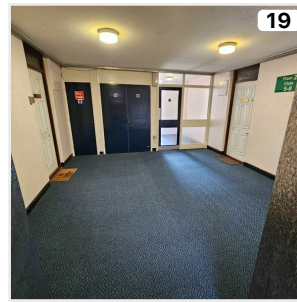
F.11 Specific Fire Hazards

- Risks and Fire Hazards
- (1) PIR/PUR within brick cavity
 - (2) Missing fire cavity barriers around gas flue pipes through brick sections

Neutral

Photos





Fire Service Intervention

Event	Seconds	Minutes & Seconds
Initiation to fire detection	5 Seconds	5 Seconds
Actuation Of Fire Detector To Transmission Of Alarm	5 Seconds	5 Seconds
Processing By Central Monitoring Station	30 Seconds	30 Seconds
Receipt of call by fire service mobilising control	30 Seconds	30 Seconds
Transmission To Fire Station And Response	30 Seconds	30 Seconds
Travelling Time Of Fire Service	240 Seconds	4 Minutes
Arrival Protocol And Entry Preparation Time	240 Seconds	4 Minutes
Firefighting Travel In Firefighting Lift	180 Seconds	3 Minutes
Firefighter travel to operational bridgehead	180 Seconds	3 Minutes
Firefighter Travel Walking Up Two Flights Of Stairs To Fire Floor (75 Seconds)	75 Seconds	1 Minute 15 Seconds
Total Time	1,015 Seconds	16 Minutes 55 Seconds

Nearest Fire Station

The nearest fire and rescue service is found at Hargate lane West Bromwich B71 1PD and approximately 0.3 miles away or 3 minutes in peak hours traffic.

Wall Constructions

Wall Construction	Build-up
Wall Type 1 Traditional cavity brickwork with PIR/ PUR insulation (TB8YN1)	• Surface Finish
Wall type 2 PPC Rainscreen cladding with mineral wool over brickwork (RAWTMU)	• Surface Finish (Powder coated solid aluminium)

Wall Construction: Wall Type 1

Traditional cavity brickwork with PIR/ PUR insulation

Construction Reference
TB8YN1

This wall construction was identified by wall inspections 81TVQ4, KYKWMS, GLAESA, and EXWDP9. The build-up, cavity barrier, and floor slab information is taken directly from inspection 81TVQ4. See the Inspections section of this report for full inspection details.

Construction	Effect	Risk
Wall Type 1 Traditional cavity brickwork with PIR/PUR insulation (TB8YN1)	Neutral	Low

Build-Up

1 Element	Thickness/Depth	Rating (BS EN13501)
Surface Finish	102mm	A1 - Non-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
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K.2 External Surfaces

Class A1/A2

Positive

K.3 Facings/Cladding Panels

High HRR

Positive

K.4 Panel Construction

No gaps between panels

Positive

K.5 Cavities

Facings into the cavity combustible, but at least Class B

Negative

K.6 Insulation

Class B

Negative

K.7 Substrate

Masonry, >75 mm thick

Positive

PAS Standard Benchmark

L1 Benchmark

The Construction benchmark is outlined in section L1 of the PAS 9980 Guidance Document -

Masonry (brickwork, blockwork, reinforced concrete)

Loadbearing masonry, provided it is in good condition, can generally be regarded as providing a substrate which is both non-combustible and fire-resisting to a standard of at least 30 min (60 min if 100 mm thick or more). Non-loadbearing masonry might, or might not, have the same properties.

L3 Benchmark

Rigid (thermoset) foam insulations

- Polyurethane (PUR)
- Polyisocyanurate (PIR)
- Phenolic

Thermoset foam insulations are combustible, but can offer a wide range of fire performance, depending upon the specific product in question.

Both PUR and PIR can be formulated in a wide variety of ways, so where possible the assessor needs to identify the product in question. PUR and PIR foams are based upon

similar underlying chemistry, but PIR foam generally performs better than PUR due to it having greater thermal stability (more likely to char and less likely to break down into flammable substances).

Phenolic foams are generally similar to PIR foams in terms of their fire performance, though their underlying chemistry is different.

Where a rigid foam has been engineered for improved fire performance, a foil facing is commonly employed to improve performance further by protecting the foam from direct flame attack. Where a foil faced foam is used, it is typically necessary to use foil tape to seal any joints so that the underlying foam is not left exposed. The extent to which tape failure can be accepted needs to be considered in the context of the overall wall construction.

While cavity barriers need to be fixed to substrates offering the same period of fire resistance as the cavity barrier, rigid foams might, in practice, remain in place for long enough to afford a satisfactory delay to fire spread, provided the cavity barrier is not reliant upon the foam itself for support.

L5 Benchmark

FRAMES -

The frames of windows and doors can, subject to the materials used in their construction, provide the function of cavity barriers or cavity closers around these openings. Typically, timber and steel frame windows offer the cavity barrier function whereas aluminium and uPVC do not. However, it is advisable to check uPVC frames with a magnet, as steel can be incorporated within the frame, particularly where the doors are required to provide a level of security.

L6 Benchmark

BALCONIES -

Balconies are defined in BS 8579. However, for the purpose of this PAS and the manner in which balconies impact external fire behaviour, balconies fall into one of three categories:

- a) those which fall entirely within the curtilage of the building structure (i.e. they are built on the slab and appear inset into the building when observed from outside). They might be enclosed to an extent and might effectively be made fully enclosed (sometimes referred to as a "winter garden"). The extent of enclosure needs to be considered in light of whether, from a fire perspective, the space can be treated as part of the outside or whether it is in effect a compartment (i.e. subject to compartment fire behaviour);
- b) those which project beyond the main building structure but do so on an extension of the floor slab. They provide an advantage in that their construction matches that of the compartment floor within the building, and can deflect fire/smoke plumes away from the building; and
- c) those which project beyond the main building structure and are fixed to the outside face of the building. They can only be of lightweight construction; their construction needs to be assessed based upon the combustibility and fire resistance of any materials used.

Regardless of balcony type, the materials used to line the balconies (including soffits) need to be assessed in light of their likely contribution to external fire spread.

Storage of materials and other uses by residents also need to be taken into account. Any bulk storage can pose a significant hazard, as can the use of combustion appliances such as barbecues and heaters.

Aside from the above, means of escape external walkways (a form of balcony) are not within the scope of this PAS, as any risk associated with these would need to be considered as part of the overarching FRA.

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.

BR135 Benchmark

We have compared this external wall type to the cladding systems found on the BR135 database and we did find a cladding system with the configuration and components that would constitute an exact match to what our inspections found installed on the Property.

Wall Construction: Wall type 2 PPC Rainscreen cladding with mineral wool over brickwork

Construction Reference
RAWTMU

This wall construction was identified by wall inspections 1W89EG, NDV1MP, and T6U3A8. The build-up, cavity barrier, and floor slab information is taken directly from inspection 1W89EG. See the Inspections section of this report for full inspection details.

Construction	Effect	Risk
Wall type 2 PPC Rainscreen cladding with mineral wool over brickwork (RAWTMU)	Positive	Low

Build-Up

1 Element	Thickness/Depth	Material	Rating (BS EN13501)
Surface Finish	103mm	Powder coated solid aluminium	A1 - Non-Combustible

Cavity Barriers

There is no external wall cavity

Floor Slab

Backing Wall Sits On The Floor Slab

Fire Performance

K.1 General

Materials with a calorific value (gross heat of combustion) of ≤ 3 MJ/kg	Positive
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K.2 External Surfaces

Class A1/A2

Positive

K.3 Facings/Cladding Panels

Mechanically fixed

Neutral

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

Neutral

K.6 Insulation

Mineral/glass insulation

Positive

K.7 Substrate

Masonry, >75 mm thick

Positive

PAS Standard Benchmark

L1 Benchmark

The Construction benchmark is outlined in section L1 of the PAS 9980 Guidance Document -

Masonry (brickwork, blockwork, reinforced concrete)

Loadbearing masonry, provided it is in good condition, can generally be regarded as providing a substrate which is both non-combustible and fire-resisting to a standard of at least 30 min (60 min if 100 mm thick or more). Non-loadbearing masonry might, or might not, have the same properties.

L3 Benchmark

Insulation materials previously classified as non-combustible/ limited combustibility (now Class A1 or Class A2)

- Stone wool
- Ceramic fibre
- Glass fibre
- Foamed glass
- Exfoliated vermiculite

Class A1 or Class A2 (non-combustible and limited combustibility) insulators pose negligible risk in external wall construction. Where such insulators fully fill wall construction then this might indicate that they are being relied upon as contributing to a period of fire resistance. However, if fire resistance is required or being relied upon as part of the assessment, it is important that these insulators fully fill the space they are in or are sufficiently rigid or otherwise mechanically retained/supported to provide a continuous barrier through the space (e.g. batts will retain their shape whereas quilt can slump in a cavity).

L5 Benchmark

FRAMES -

The frames of windows and doors can, subject to the materials used in their construction, provide the function of cavity barriers or cavity closers around these openings. Typically, timber and steel frame windows offer the cavity barrier function whereas aluminium and uPVC do not. However, it is advisable to check uPVC frames with a magnet, as steel can be incorporated within the frame, particularly where the doors are required to provide a level of security.

L6 Benchmark

BALCONIES -

Balconies are defined in BS 8579. However, for the purpose of this PAS and the manner in which balconies impact external fire behaviour, balconies fall into one of three categories:

- a) those which fall entirely within the curtilage of the building structure (i.e. they are built on the slab and appear inset into the building when observed from outside). They might be enclosed to an extent and might effectively be made fully enclosed (sometimes referred to as a "winter garden"). The extent of enclosure needs to be considered in light of whether, from a fire perspective, the space can be treated as part of the outside or whether it is in effect a compartment (i.e. subject to compartment fire behaviour);
- b) those which project beyond the main building structure but do so on an extension of the floor slab. They provide an advantage in that their construction matches that of the compartment floor within the building, and can deflect fire/smoke plumes away from the building; and
- c) those which project beyond the main building structure and are fixed to the outside face of the building. They can only be of lightweight construction; their construction needs to be assessed based upon the combustibility and fire resistance of any materials used.

Regardless of balcony type, the materials used to line the balconies (including soffits) need to be assessed in light of their likely contribution to external fire spread.

Storage of materials and other uses by residents also need to be taken into account. Any bulk storage can pose a significant hazard, as can the use of combustion appliances such as barbecues and heaters.

Aside from the above, means of escape external walkways (a form of balcony) are not within the scope of this PAS, as any risk associated with these would need to be considered as part of the overarching FRA.

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.

L8 Benchmark

Rainscreen systems come in various forms, generally defined by the cold cavity arrangement they incorporate (see Table L.4):

- ventilated and drained; or
- pressure equalized.

Rainscreen systems are invariably supported on some form of framing or bracketing system. In the majority of cases, framing and bracketry transmit the load of the rainscreen to the back wall, and in turn to the building structure at each floor level.

However, consideration needs to be given to the possibility that the rainscreen load is transmitted down to the base of the system and only provides lateral restraint at floor levels. In this instance, the extent to which the frame might be exposed to fire needs to be taken into account, particularly if a material is used which offers no fire resistance, such as aluminium.

Framing and bracketry are likely to interact with cavity barriers; where these cross over the cavity barriers then the detailing of the cavity barrier needs to be appropriate (including additional fire stopping as necessary) to achieve fire separation of cavities.

Table L.3 gives information on the various insulation materials that might be incorporated into a rainscreen system. It is unlikely that thermoplastic insulation will be acceptable in a rainscreen system, particularly if it is exposed in a cavity.

L9 Benchmark

PLASTICS -

Plastics are infrequently used as the outer surface of cladding due to their poor long-term durability; they tend to degrade under prolonged exposure to UV light and heating/cooling cycles. Where plastics are encountered and there is a desire to retain them, external wall assessors need to establish their fire performance in some way, noting in particular that fire performance can degrade as the plastic degrades over time.

BR135 Benchmark

We have compared this external wall type to the cladding systems found on the BR135 database and we did find a cladding system with the configuration and components that would constitute an exact match to what our inspections found installed on the Property.

Façade Configuration: JEM7FY

Items in Façade

6 Items

Effect

Risk

Wall Construction
Wall Type 1 Traditional cavity brickwork with PIR/PUR insulation (TB8YN1)

Neutral

Low

Attachment
Cantilever Balcony (49D5BX)

Positive

Low

External Door
Single Leaf Entrance Doors (7YTBZ8)

Positive

Low

External Door
Single Leaf Entrance Doors (W4TDXB)

External Window
YZNGDA

Positive

Low

Penetration
Air Brick (9AIHZI)

Façade Configuration Risk Factors

N.1 Building Height/Cladding Height

18 m to 30 m

Neutral

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.

Neutral

N.3 Extent of Cladding

Entire façade covered

Neutral

N.4 Cavities & Openings

Continuous vertically running cavity without cavity barriers or fire stops

Negative

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 vent passes through a cavity that contains combustible elements with no identified proprietary means of fire stopping

Negative

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

Positive

N.11 Attachments

Non-combustible open balconies

(Where these extend along a façade, they have the potential both to:

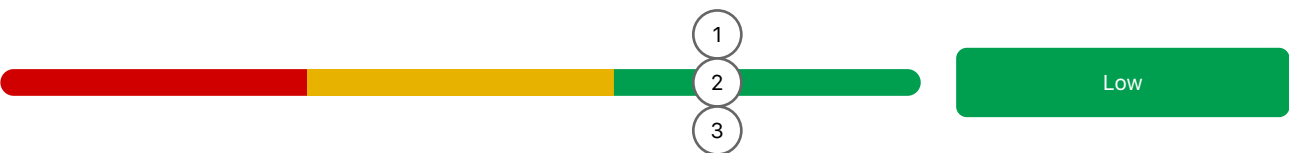
- interrupt a cavity; and
- deflect flames away from the building and away from the façade)

Positive

Risk Factor Analysis

Conclusion: 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.



Façade Configuration: W6MQM1

Items in Façade

6 Items	Effect	Risk
Wall Construction Wall type 2 PPC Rainscreen cladding with mineral wool over brickwork (RAWTMU)	Positive	Low
Attachment Cantilever Balcony (49D5BX)	Positive	Low
External Door Single Leaf Entrance Doors (7YTBZ8)	Positive	Low
External Door Single Leaf Entrance Doors (W4TDXB)		
External Window YZNGDA	Positive	Low
Penetration Air Brick (9AIHZI)		

Façade Configuration Risk Factors

N.1 Building Height/Cladding Height

18 m to 30 m

Neutral

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

>5 m

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

Neutral

N.3 Extent of Cladding

Entire façade covered

Neutral

N.4 Cavities & Openings

Cavity not continuous, due to façade being only partially clad or broken by building features:

- projecting floor slabs that divide part of the wall and isolate sections of cavity from each other; and
- walls that project out or are set back, such as to limit the vertical extent of cavities)

Neutral

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

Positive

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

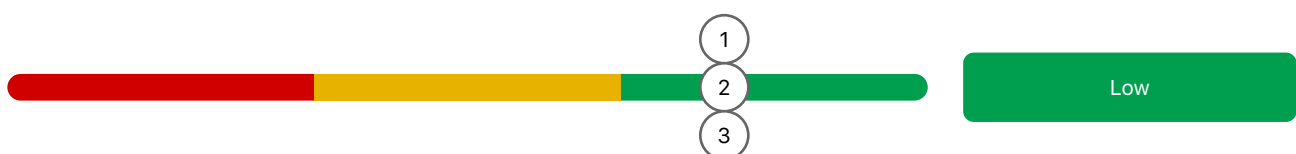
Remote from windows and openings, such that fire spread into the escape routes to give rise to untenable conditions is remote

Positive

Risk Factor Analysis

Conclusion: 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.



APPENDIX

Asset Information

Client Name

Sandwell Metropolitan Borough Council

Client Address

Sandwell Council House
Freeth Street PO Box 2374
Oldbury
B69 3DE

Responsible Person

Sandwell Metropolitan Borough Council

Safety Assistance

Not Required

Contact Details

As provided by client

Fire Alarm System

Within Flats: Smoke detection is installed to LD2 and LD3 standards. The detectors are located in various areas:

LD3: Hallways (flat 20, 38, 43, 54)

LD2: Living rooms, kitchens, and hallways (flat 43)

Communal Areas: There is no fire detection system in communal areas, due to concerns about vandalism and false alarms. However, the Stay Put Unless policy is in place for evacuation.

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 are correctly sited and appear to provide adequate lighting.

Portable Fire Fighting Equipment

Portable Fire Fighting Equipment installed within staff only / Restricted areas of the building

Portable Fire Fighting Equipment

Extinguisher equipment is installed within staff only / Restricted access areas of the building.

Smoke Control

Natural smoke control

Smoke Control

Automatic Opening Vents (AOVs): These are installed in the staircases to provide smoke ventilation. Specifically, AOVs are present on the 16th and 7th floors.

Smoke Ventilation: The communal staircases are protected with automatic smoke ventilation, which is maintained and tested twice yearly.

Ventilation and Access: Windows in communal areas can only be opened by operating the smoke vents with a key.

Suppression Systems

Partial sprinkler system installed (Detailed in Description)

Suppression System

A deluge suppression system is installed within the refuse/bin store only

Fire Fighting Facilities

Dry Riser

Fire Fighting Facilities

Suitable rising main present. dry Riser: There is a dry riser that serves the building, with the dry riser inlet located in the ground-floor dry riser cupboard. Maintenance is conducted twice yearly, with annual hydraulic testing. the FH is located on the North West corner of the boundary approximately 5 metres from the building

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

The FH is located on the North West corner of the boundary approximately 5 metres from the building

Housekeeping

Good standard. Means of escape clear. Refuse stored appropriately

Secure Information Boxes

Secure information box (SIB) installed

Secure Information Boxes

A proprietary steel SIB is fitted within the main entrance lobby

Signage

Appropriate signage installed throughout premises

Signage

Assumed Post 2018

Property Type

Apartment Block

Building Era / Age

Known Build Date

Known Build Date

1966-1967

Building Height

From lowest point at ground to the upper most finished floor, St Marys House is approximately 45 metres in height.

Approx Floor Area Per Floor

The approximate footprint of St Marys House is 400m2

Number of Storeys (Ground and above)

17

Number of Basement Levels

There are no basement or lower ground floors

Number of Flats

64

Flat Types

Single Storey

Structural Wall Material

Traditional cavity brick and block build with reinforced concrete floor slabs

Structural Floor Material

Floors were found to be of reinforced concrete

Structural Stairs Material

Stairs were found to be of reinforced concrete

Construction (Details)

Traditional concrete frame and brick construction which has had refurbishment works including UPVC windows, insulation and render facade over the existing facade.

Exterior Cladding

FRAEW Completed on Exterior Cladding

Exterior Cladding (Details)

A cladding system and other improvement work went ahead in 2002 (planning reference DD/02/38700). The work focused on external refurbishments including installation of a solid aluminium polyester powder coated rainscreen cladding system, replacement Polyester Powder Coated (PPC) with a loose laid mineral wool insulation.

Electronic Entrance System

Yes

Carpark

External/Outdoor Carpark

Employees

None

Residents

Yes

Approx number of Residents

128

Residents (Extended)

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

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. Emergency exits open outwards in escape direction.

Number Of Internal Escape Stairs

The building is provided with a single escape stair

Number Of Final Exits

The building is provided with three individual escape exits

External Means Of Escape

None Present

Types Of Lifts Installed

Passenger

Evacuation Chairs Installed

No

Refuge Points Present

No

Stairwells Protected / Lobbied

Yes

Flat Doors Open Onto Stairs

No

Current Evacuation Strategy

Stay Put

Current Stay Put Strategy Description

The current evacuation strategy is Stay Put as denoted by the fire action notices displayed in the common area.

Current Evacuation Strategy for the property considered appropriate?

Yes

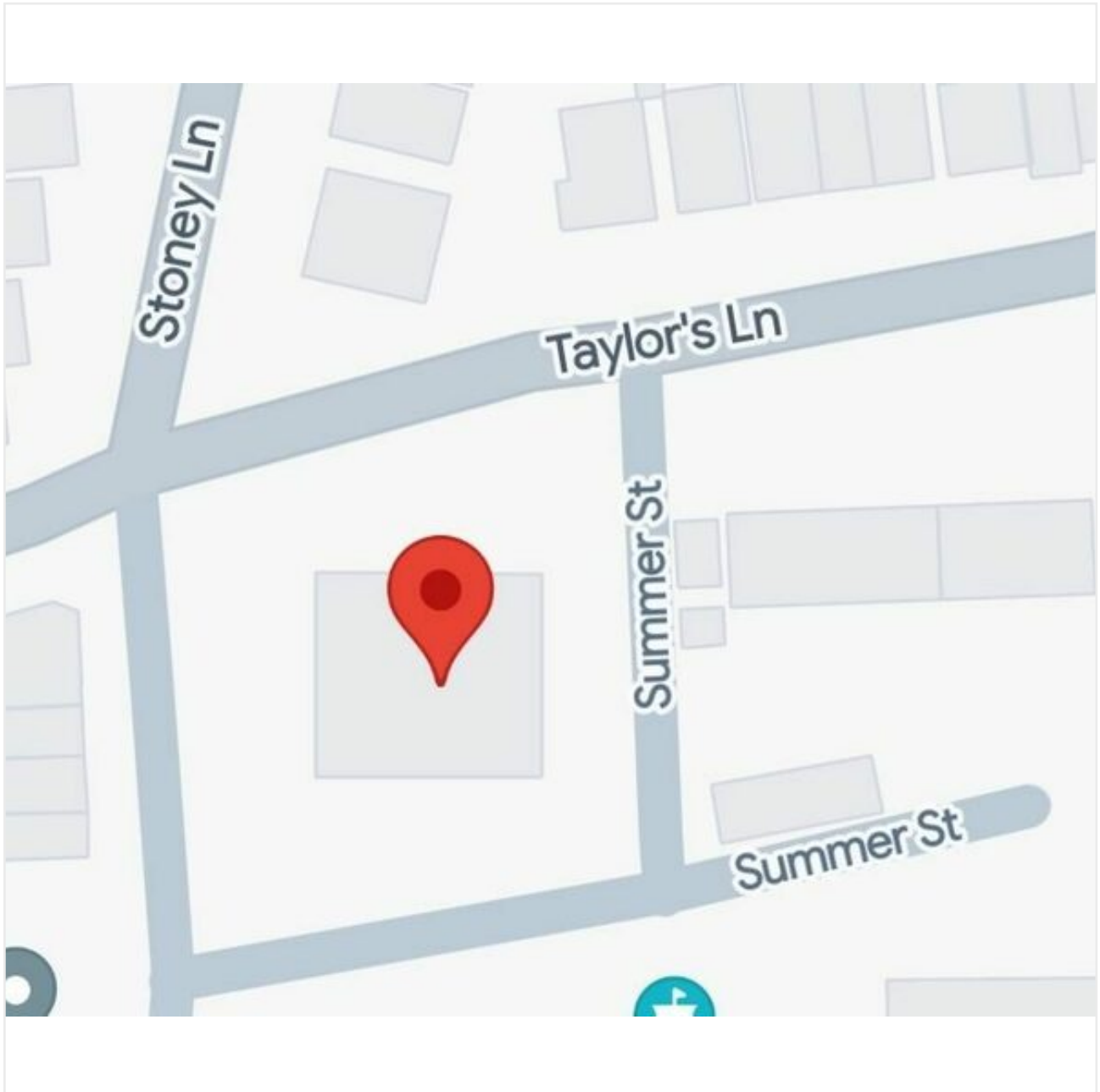
Description

The premises is purpose-built with an adequate standard of compartmentation. The current Stay Put evacuation strategy is considered appropriate.

What is the recommended evacuation strategy for the property?

Stay Put

Aerial Perspective: Aerial image of St Marys House and surrounding access roads



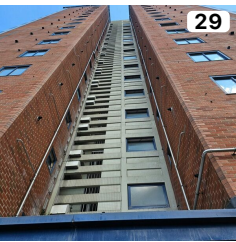
Elevations

Photo	Name	No. of Storeys
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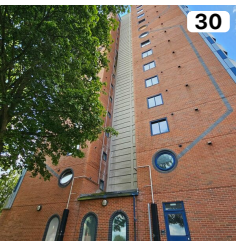
North Elevation

17 Storeys



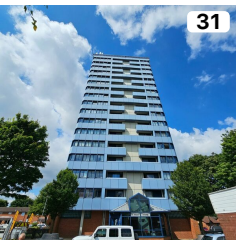
West Elevation

17 Storeys



East Elevation

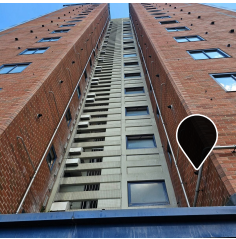
17 Storeys



South Elevation

17 Storeys

Inspections

Elevation Location	Inspection	Elements
	Inspection: 81TVQ4 East Elevation Accessible wall	• Surface Finish
	Inspection: 1W89EG East Elevation Accessible wall	• Surface Finish (Powder coated solid aluminium)
	Inspection: CZ4KMH East Elevation Accessible roof	• Surface Finish
	Inspection: 2GSQPW	• Surface Finish (PIR/PUR insulation)
	Inspection: KYKWMS East Elevation Accessible wall	• Surface Finish • Cavity • Insulation • Inner Leaf Support (Backing Wall)
	Inspection: GLAESA West Elevation Accessible wall	• Surface Finish • Cavity • Insulation • Inner Leaf Support (Backing Wall)

Elevation Location	Inspection	Elements
	Inspection: NDV1MP North Elevation (Front Entrance) Accessible wall	• Surface Finish (Powder coated solid aluminium) • Insulation (Mineral Wool Insulation) • Inner Leaf Support (Backing Wall) (Original brickwork)
	Inspection: T6U3A8 South Elevation Accessible wall	• Surface Finish (Powder coated solid aluminium) • Insulation (Mineral Wool Insulation) • Inner Leaf Support (Backing Wall) (Original brickwork)
	Inspection: EXWDP9 East Elevation Accessible wall	• Surface Finish • Cavity • Insulation • Inner Leaf Support (Backing Wall)

Inspection: 81TVQ4

Elevation • Location
East Elevation • Accessible wall



Name/Summary

Wall Type 1 Traditional cavity brickwork with PIR/PUR insulation

Description

Showing wall tie detail and no cavity insulation

Build-Up

1 Element	Thickness/Depth	Photo Ref.	Rating (BS EN13501)
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Surface Finish	102mm		A1 - Non-Combustible
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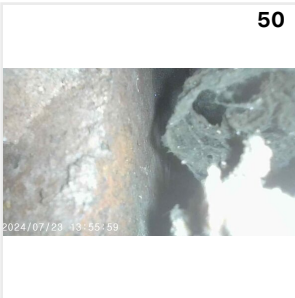
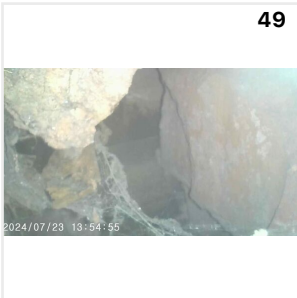
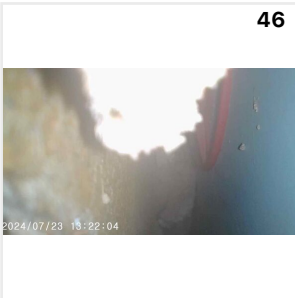
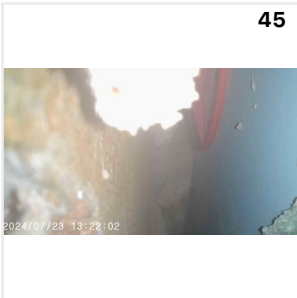
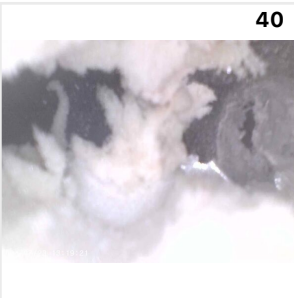
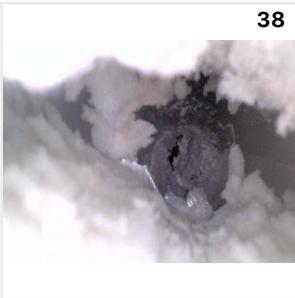
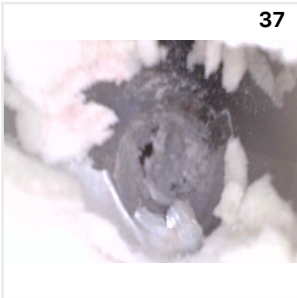
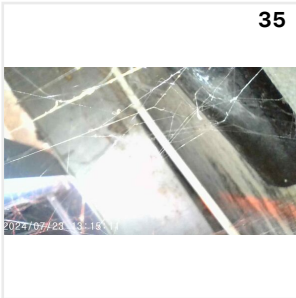
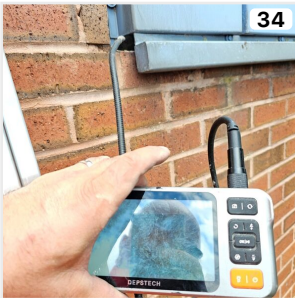
Cavity Barriers

None

Floor Slab

Backing Wall Sits On The Floor Slab

Inspection Photos



Inspection: 1W89EG

Elevation • Location
East Elevation • Accessible wall



Name/Summary

Wall type 2 PPC Rainscreen cladding with mineral wool over brickwork

Build-Up

1 Element	Thickness/Depth	Material	Photo Ref.	Rating (BS EN13501)
Surface Finish	103mm	Powder coated solid aluminium		A1 - Non-Combustible

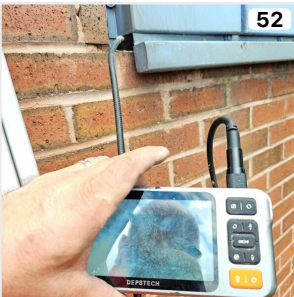
Cavity Barriers

There is no external wall cavity

Floor Slab

Backing Wall Sits On The Floor Slab

Inspection Photos



56



57



58



59



Inspection: CZ4KMH

Elevation • Location
East Elevation • Accessible roof



Name/Summary

Roof detail above ground floor exit

Description

Showing PIR/PUR foam insulation within roof system

Build-Up

1 Element	Thickness/Depth	Photo Ref.	Rating (BS EN13501)
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Surface Finish	80mm		C - Combustible
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Cold roof build up and material appears to be a corrugated pre-finished metal sheet with a PIR or PUR rigid insulation. The metal sheet would likely be A2 s1 d0, however rigid insulation will likely be combustible.

Cavity Barriers

None

Inspection Photos



Inspection: 2GSQPW

Name/Summary

Wall type 1 brick cavity

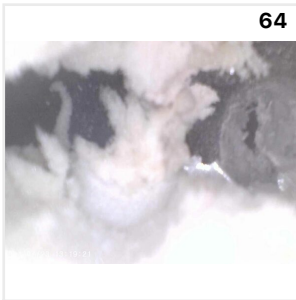
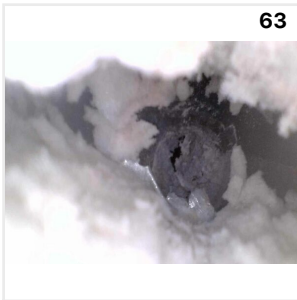
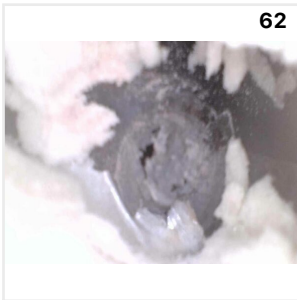
Description

Showing PUR/PIR insulation with puncture, vapour barrier behind and concrete block inner leaf

Build-Up

1 Element	Thickness/Depth	Material	Photo Ref.	Rating (BS EN13501)
Surface Finish	60mm	PIR/PUR insulation Material Brand: Unknown, however silver foil backed with closed cell foam inner core		D - Highly Combustible

Inspection Photos



Inspection: KYKWMS

Elevation • Location
East Elevation • Accessible wall



Name/Summary

Wall Type 1 Traditional cavity brickwork with PIR/PUR insulation

Description

Showing wall tie detail and no cavity insulation

Build-Up

4 Elements	Thickness/Depth	Material	Photo Ref.	Rating (BS EN13501)
Surface Finish	102mm			A1 - Non-Combustible
Cavity	80mm			
Insulation	60mm	Material Brand: Unknown, however silver foil backed with closed cell foam inner core		B - Combustible
Inner Leaf Support (Backing Wall)	100mm			A1 - Non-Combustible

Cavity Barriers

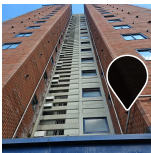
None

Floor Slab

Backing Wall Sits On The Floor Slab

Inspection: GLAESA

Elevation • Location
West Elevation • Accessible wall



Name/Summary

Wall Type 1 Traditional cavity brickwork with PIR/PUR insulation

Description

Showing wall tie detail and no cavity insulation

Build-Up

4 Elements	Thickness/Depth	Material	Photo Ref.	Rating (BS EN13501)
Surface Finish	102mm			A1 - Non-Combustible
Cavity	80mm			
Insulation	60mm	Material Brand: Unknown, however silver foil backed with closed cell foam inner core		B - Combustible
Inner Leaf Support (Backing Wall)	100mm			A1 - Non-Combustible

Cavity Barriers

None

Floor Slab

Backing Wall Sits On The Floor Slab

Inspection: NDV1MP

Elevation • Location
North Elevation (Front Entrance) • Accessible wall



Name/Summary

Wall type 2 PPC Rainscreen cladding with mineral wool over brickwork

Build-Up

3 Elements	Thickness/Depth	Material	Photo Ref.	Rating (BS EN13501)
Surface Finish	2mm	Powder coated solid aluminium		A1 - Non-Combustible
Insulation	100mm	Mineral Wool Insulation		A1 - Non-Combustible
Inner Leaf Support (Backing Wall)	102mm	Original brickwork		A1 - Non-Combustible

Cavity Barriers

There is no external wall cavity

Floor Slab

Backing Wall Sits On The Floor Slab

Inspection: T6U3A8

Elevation • Location
South Elevation • Accessible wall



Name/Summary

Wall type 2 PPC Rainscreen cladding with mineral wool over brickwork

Build-Up

3 Elements	Thickness/Depth	Material	Photo Ref.	Rating (BS EN13501)
Surface Finish	2mm	Powder coated solid aluminium		A1 - Non-Combustible
Insulation	100mm	Mineral Wool Insulation		A1 - Non-Combustible
Inner Leaf Support (Backing Wall)	102mm	Original brickwork		A1 - Non-Combustible

Cavity Barriers

There is no external wall cavity

Floor Slab

Backing Wall Sits On The Floor Slab

Inspection: EXWDP9

Elevation • Location
East Elevation • Accessible wall



Name/Summary

Wall Type 1 Traditional cavity brickwork with PIR/PUR insulation

Description

Showing wall tie detail and no cavity insulation

Build-Up

4 Elements	Thickness/Depth	Material	Photo Ref.	Rating (BS EN13501)
Surface Finish	102mm			A1 - Non-Combustible
Cavity	80mm			
Insulation	60mm	Material Brand: Unknown, however silver foil backed with closed cell foam inner core		B - Combustible
Inner Leaf Support (Backing Wall)	100mm			A1 - Non-Combustible

Cavity Barriers

None

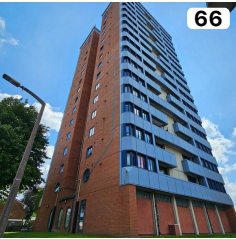
Floor Slab

Backing Wall Sits On The Floor Slab

Attachments & Balconies

Photo

Attachment



Cantilever Balcony (49D5BX)
Configuration: Stacked

Attachment: Cantilever Balcony

Attachment Reference
49D5BX

Details

Configuration

Stacked

Framework/Structure

Balconies are formed from the original reinforced concrete walling which has subsequently been clad over circa 2002 to form additional usable space internally.

L6 Benchmark

Balconies -

Balconies are defined in BS 8579. However, for the purpose of this PAS and the manner in which balconies impact external fire behaviour, balconies fall into one of three categories:

- a) Those which fall entirely within the curtilage of the building structure (i.e. they are built on the slab and appear inset into the building when observed from outside). They might be enclosed to an extent and might effectively be made fully enclosed (sometimes referred to as a "winter garden"). The extent of enclosure needs to be considered in light of whether, from a fire perspective, the space can be treated as part of the outside or whether it is in effect a compartment (i.e. subject to compartment fire behaviour);
- b) Those which project beyond the main building structure but do so on an extension of the floor slab. They provide an advantage in that their construction matches that of the compartment floor within the building, and can deflect fire/smoke plumes away from the building; and
- c) Those which project beyond the main building structure and are fixed to the outside face of the building. They can only be of lightweight construction; their construction needs to be assessed based upon the combustibility and fire resistance of any materials used.

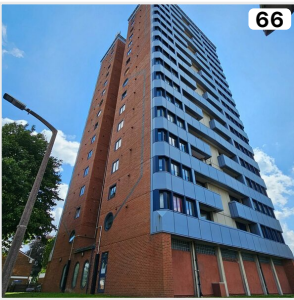
Regardless of balcony type, the materials used to line the balconies need to be assessed in light of their likely contribution to external fire spread.

Storage of materials and other uses by residents also need to be taken into account.

Any bulk storage can pose a significant hazard, as can the use of combustion appliances such as barbecues and heaters.

The balconies on St Marys House are category B.

Photos



Penetrations

Photo

Penetration

No Image

Air Brick (9AIHZI)
Inspection Type: Visual

Penetration: Air Brick

Penetration Reference
9AIHZI

Details

Photo

1 Image

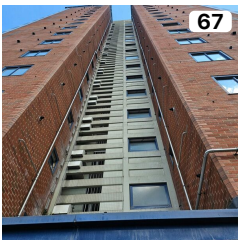
Inspection Type

Visual

External Windows

Photo

External Window



YZNGDA

External Window: YZNGDA

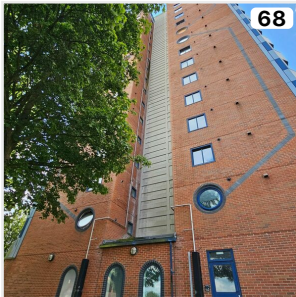
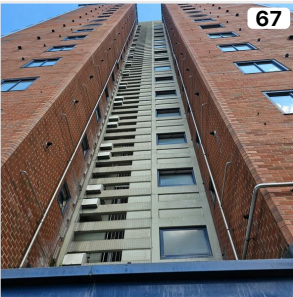
External Window Reference
YZNGDA

Details

Surface Material

Aluminium

Photos



External Doors

Photo

External Door



Single Leaf Entrance Doors (7YTBZ8)



Single Leaf Entrance Doors (W4TDXB)

External Door: Single Leaf Entrance Doors

External Door Reference
7YTBZ8

Details

Surface Material

Steel

Infill / Panel Material

Toughened Glass

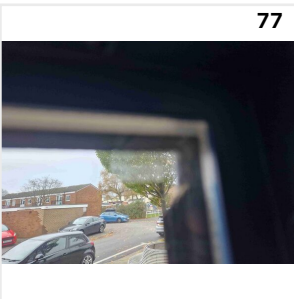
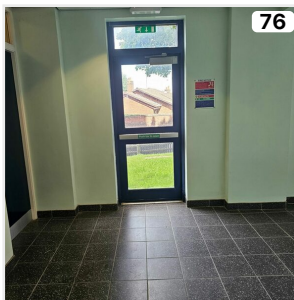
Frame Material

Steel

Details

Kite marking indicates BS EN 12150-2

Photos



External Door: Single Leaf Entrance Doors

External Door Reference
W4TDXB

Details

Surface Material

Steel

Frame Material

Steel

Infill / Panel Material

Toughened Glass

Photos



Plan: North Elevation (Front Entrance)



Plan: West Elevation



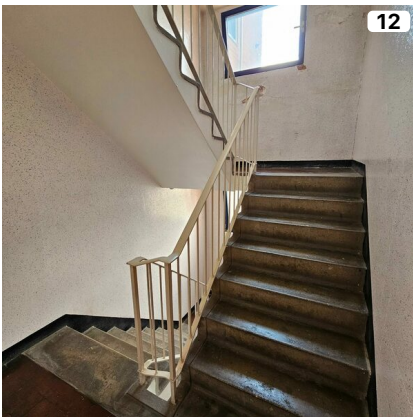
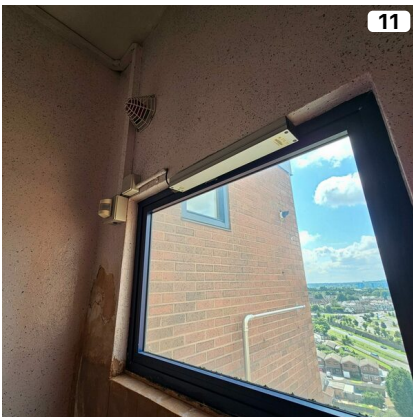
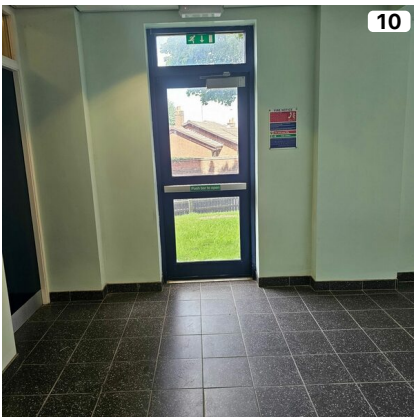
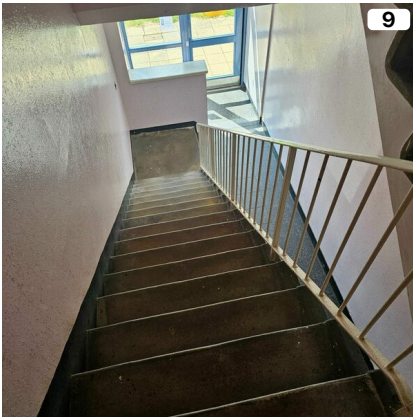
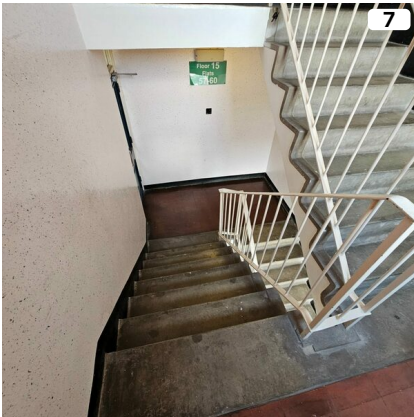
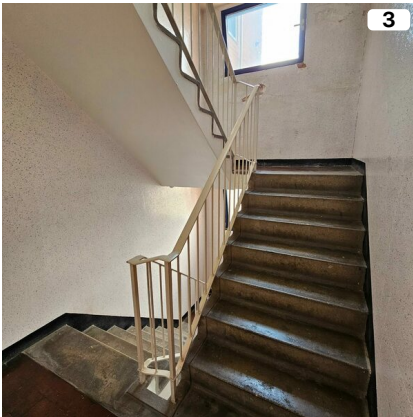
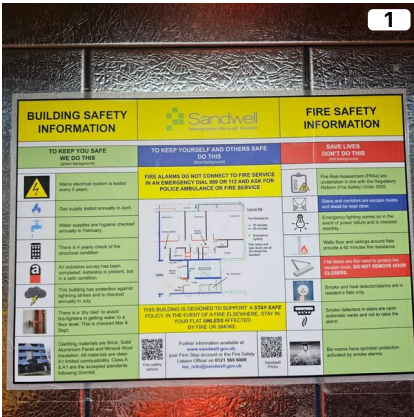
Plan: East Elevation



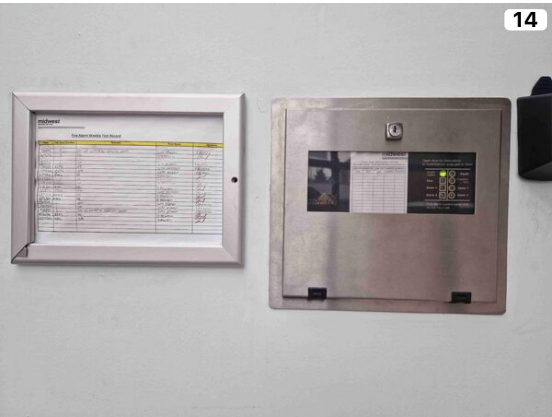
Plan: South Elevation



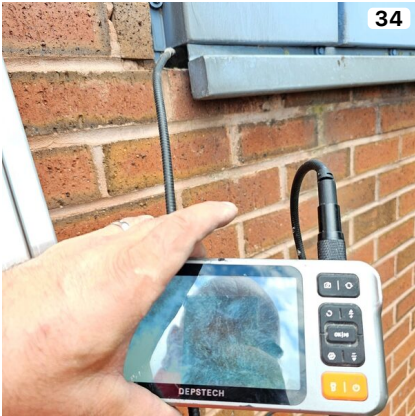
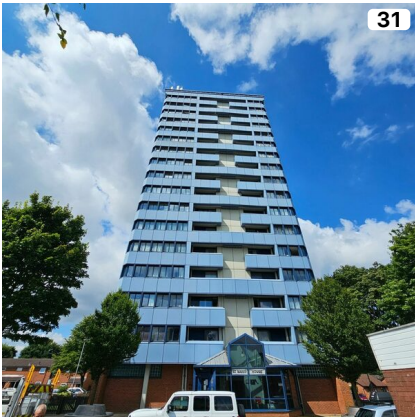
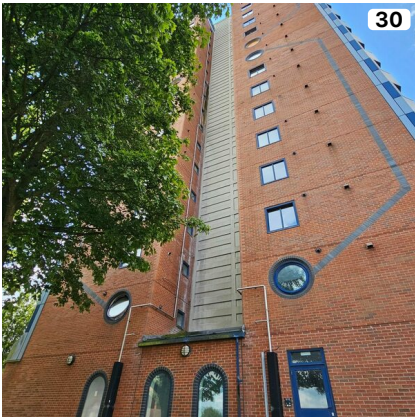
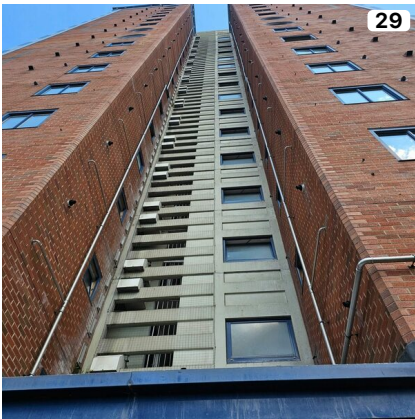
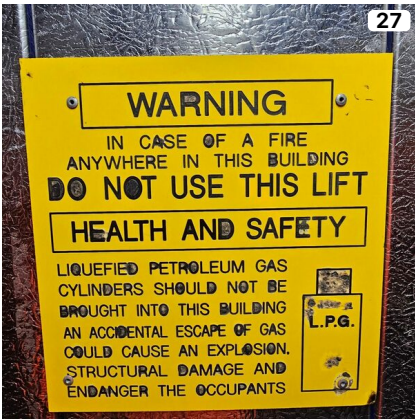
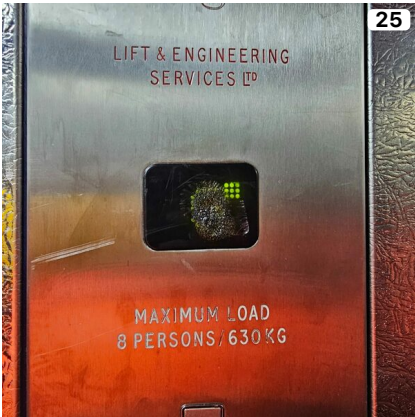
Photos



Photos Continued...



Photos Continued...



Photos Continued...



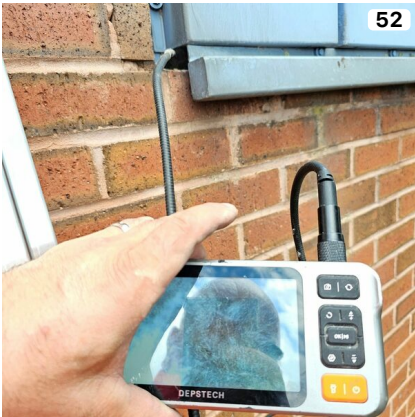
Photos Continued...



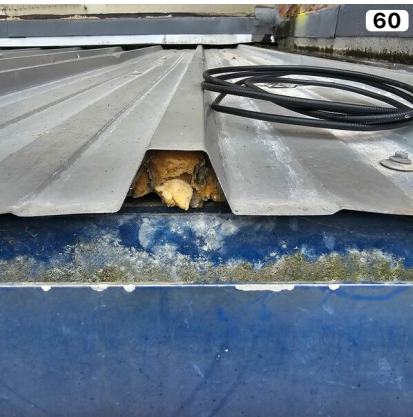
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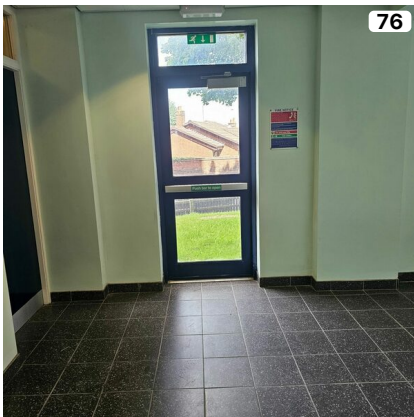
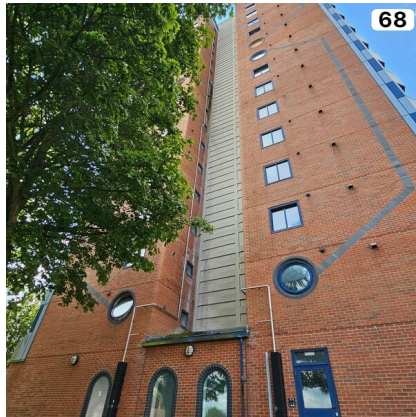
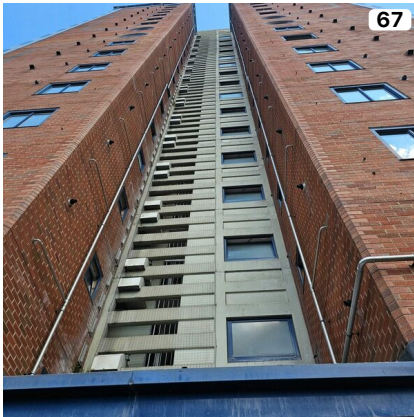
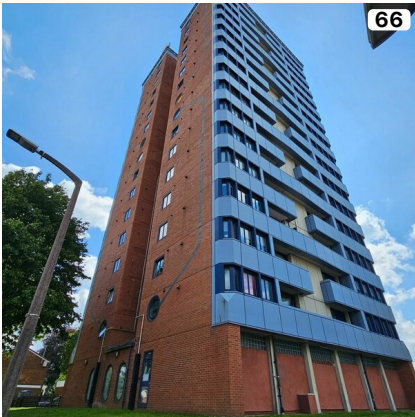
Photos Continued...



Photos Continued...



Photos Continued...



Photos Continued...





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