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FIRE RISK APPRAISAL EXTERNAL WALLS

LANCASTER HOUSE

Lancaster House
Oldbury Road
Oldbury
West Midlands
B65 0QE

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Summary

Fire Risk Appraisal External Walls

Assessment and Certificate Reference
RB-LLQKZX

Assessed On, By
25/11/2024, James Major (Facade Manager)

Approved / Validated On, By
Not Approved

Recommended Review Date
25/11/2029

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.

Assessed Property

Property Name
Lancaster House

Property Reference
RB-XXC6EV

Address
Lancaster House
Oldbury Road
Oldbury
West Midlands
B65 0QE

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 though 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 (02/04/2025) Sandwell Metropolitan Borough Council Fire Risk Assessment	Received

Executive Summary

External Wall Systems and Attachments on the Building

10 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.

10 Items	Effect	Risk
Wall Construction Wall Type 1 - Render over mineral wool (1M51XV)	Positive	Low
Wall Construction Wall Type 2 - Terracotta over mineral wool (VQP87K)	Positive	Low
Wall Construction Wall Type 3 - Curtain wall (CGV3DH)	Neutral	Low
Wall Construction Wall Type 4 - Rendered cement board over glass wool (S3WEUW)	Neutral	Medium
Wall Construction Wall Type 5 - HPL (DYZHX9)	Neutral	Medium
Attachment Cantilever Balcony (KU7X3S)	Positive	Low
Attachment Inset Balcony (NYVKYB)	Positive	Low
Attachment Brise Soleil (JD4G5D)	Neutral	Low
External Window Top, Mid, Side Hung Casements (PCGT8Y)	Neutral	Low
External Door Single Leaf Entrance Doors (4NQ3MR)	Neutral	Low

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 **E5KTDS** which includes wall construction **1M51XV**.

Conclusion: This wall system is comprised of a 6mm render finish adhesively bonded to 100mm of mineral wool insulation that is mechanically fixed to the building's masonry substrate. The render system was identified as a Structherm NSC2a system and was added during the building's refurbishment in 2009/2010.

Although various forms of renders are available, they are typically accepted as being of limited combustibility and can withstand high temperatures without catching fire or releasing harmful gases. The NSC2a system achieves a Euroclass A2 rating and so is considered to be of limited combustibility. The fire resistance of individual renders depends on its composition, thickness, and the type of reinforcement used. In general, thicker layers of render provide better fire resistance. Its insulating properties can contribute to how a building performs in a fire. In some cases, render can help protect the underlying structure (such as brick or wood) from high heat by providing a protective layer.

Mineral wool, which includes materials like stone wool, is known for its excellent fire-resistant properties. Mineral wool has a very high melting point, typically around 1,000°C to 1,200°C. This makes it non-combustible, meaning it does not contribute to the spread of fire. In the event of a fire, mineral wool acts as a thermal barrier. Its fibrous structure traps air, reducing the transmission of heat to other parts of the structure and slowing the spread of fire. Mineral wool maintains its insulation properties and shape even at high temperatures, further protecting the structural components of buildings, like steel, from heat damage.

Masonry brickwork is generally considered fire-resistant and can provide significant protection against fire for structural and non-structural elements. Masonry bricks, typically made from clay or concrete, have very high melting points (above 1000°C for clay bricks), making them resistant to fire and heat. Bricks have low thermal conductivity. This helps prevent the spread of fire to adjacent areas and provides a thermal barrier that protects the underlying structure. Masonry walls provide effective fire containment, often preventing fire from spreading between compartments within a building. The thickness and density of the masonry wall determine its fire resistance rating.

This wall system forms a significant portion of the building's external surface, present on all elevations and extending from the 1st floor to the 9th. Structural openings into this wall system include windows and balcony doors. No air cavity exists within this system, and as such, the mechanism for fire spread within the system is significantly limited, as the full-fill mineral wool insulation acts as a barrier to prevent the passage of fire and smoke. The render and non-combustible insulation will act to contain a fire externally venting from a compartment, reducing the likelihood of secondary fire spread between compartments and will not support or contribute to fire spread across the external surface of the building.

This building operates a 'Stay Put' evacuation policy. It is anticipated that, due to the nature of the building's construction, a fire would be contained within the compartment of origin long enough for firefighter intervention to begin or for affected occupants to evacuate if necessary. The building has 2 escape staircases with lobby protection serving all floors. An AOV was located at the head of the staircase with smoke vents located in the communal corridors to prolong the tenability of the means of escape and to aid internal firefighter intervention. A dry riser is fitted to the building with an outlet on every floor and a lift is available for fire service use. There is

adequate access for the fire service to the building. The nearest fire station is approximately 1 mile away, and as such, the response to a call out would be expected to be swift.

In the event of a fire;

a) fire spread is likely to be at a rate within expectations for a building of this height; and/or
b) fire spread is unlikely to give rise to widespread secondary fires resulting in occupants being significantly harmed or prevented from escaping; and/or
c) 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; and/or
d) the fire and rescue service are likely to be able to intervene effectively to enable occupants to reach safety in time.

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

Low

Risk Factor Analysis 2

This analysis looks at façade configuration **8V9UF9** which includes wall construction **VQP87K**.

Conclusion: This wall system is comprised of a 15mm terracotta tile supported by an aluminium frame that is mechanically fixed to the building's masonry substrate. Within the framework is 100mm mineral wool insulation. The system was added during the building's refurbishment in 2009/2010.

The terracotta tile is considered to be non-combustible and as such achieves a Euroclass A1 rating. The terracotta tile system was identified in the provided FRA as a Wienerberger Argeton system. The terracotta tiles are formed using a natural and organic clay material that has been shaped and kiln-baked. This process is in excess of 1000° C. As such, it in anticipated that this façade material will not support or contribute to the development of fire spread across the external surface of the building.

The supporting framework was identified to be aluminium. Although aluminium is considered to be of limited combustibility, aluminium is recognised as having a lower melting point than other metals used in construction. This may mean that in scenarios resulting in prolonged exposure to fire, where temperatures exceed 600 degrees, the material may begin to lose its structural integrity.

Mineral wool, which includes materials like stone wool, is known for its excellent fire-resistant properties. Mineral wool has a very high melting point, typically around 1,000°C to 1,200°C. This makes it non-combustible, meaning it does not contribute to the spread of fire. In the event of a fire, mineral wool acts as a thermal barrier. Its fibrous structure traps air, reducing the transmission of heat to other parts of the structure and slowing the spread of fire. Mineral wool maintains its insulation properties and shape even at high temperatures, further protecting the structural components of buildings, such as the aluminium framework, from heat damage.

Masonry brickwork is generally considered fire-resistant and can provide significant protection against fire for structural and non-structural elements. Masonry bricks, typically made from clay or concrete, have very high melting points (above 1000°C for clay bricks), making them resistant to fire and heat. Bricks have low thermal conductivity. This helps prevent the spread of fire to adjacent areas and provides a thermal barrier that protects the underlying structure. Masonry walls provide effective fire containment, often preventing fire from spreading between compartments within a building. The thickness and density of the masonry wall determine its fire resistance rating.

This wall system forms various sections of the building's external surface, present on all elevations and extending from the 1st floor to the 9th. It forms a vertical section on the front and rear elevations in the centre of the elevation, and forms vertical sections in the corners of the other elevations. Structural openings into this wall system include windows. It is recognised that there is a limited (30mm) air cavity within this system; however, it is our opinion that the mechanism for fire spread within the system is significantly limited, as the full-fill mineral wool insulation acts as a barrier to prevent the passage of fire and smoke and will not ignite, sustain, or contribute to fire spread within the internal envelope of the system. The non-combustible outer leaf and insulation will act to contain a fire externally venting from a compartment, reducing the likelihood of secondary fire spread between compartments and will not support or contribute to fire spread across the external surface of the building.

This building operates a 'Stay Put' evacuation policy. It is anticipated that, due to the nature of the building's construction, a fire would be contained within the compartment of origin long enough for firefighter intervention to begin or for affected occupants to evacuate if necessary. The building has 2 escape staircases with lobby protection serving all floors. An AOV was located at the head of the staircase with smoke vents located in the communal corridors to prolong the tenability of the means of escape and to aid internal firefighter intervention. A dry riser is fitted to the building with an outlet on every floor and a lift is available for fire service use. There is adequate access for the fire service to the building. The nearest fire station is approximately 1 mile away, and as such, the response to a call out would be expected to be swift.

In the event of a fire;

a) fire spread is likely to be at a rate within expectations for a building of this height; and/or
b) fire spread is unlikely to give rise to widespread secondary fires resulting in occupants being significantly harmed or prevented from escaping; and/or
c) 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; and/or
d) the fire and rescue service are likely to be able to intervene effectively to enable occupants to reach safety in time.

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

Low

Risk Factor Analysis 3

This analysis looks at façade configuration **MSAC54** which includes wall construction **CGV3DH**.

Conclusion: This curtain wall system is comprised of glazing supported by an aluminium frame that is mechanically fixed to the building's masonry substrate. Spandrel panels appear to have been installed within the framework.

The glazing is anticipated to be of limited combustibility or better, and as such would not be expected to support, sustain, or contribute to fire spread across the external surface of the building.

The supporting framework was identified to be aluminium. Although aluminium is considered to be of limited combustibility, aluminium is recognised as having a lower melting point than other metals used in construction. This may mean that in scenarios resulting in prolonged exposure to fire, where temperatures exceed 600 degrees, the material may begin to lose its structural integrity.

Masonry brickwork is generally considered fire-resistant and can provide significant protection against fire for structural and non-structural elements. Masonry bricks, typically made from clay or concrete, have very high melting points (above 1000°C for clay bricks), making them resistant to fire and heat. Bricks have low thermal conductivity. This helps prevent the spread of fire to adjacent areas and provides a thermal barrier that protects the underlying structure. Masonry walls provide effective fire containment, often preventing fire from spreading between compartments within a building. The thickness and density of the masonry wall determine its fire resistance rating.

This wall system forms vertical sections of the building's external surface, present on the north and south elevations and extending from the 1st floor to the 10th, and forms the external surface of the means of escape. Structural openings into this wall system include windows. It is recognised that spandrel panels are included as part of this system. It was identified that they are installed in front of the building's original brickwork. Due to their location, the likelihood of exposure to external sources of ignition is limited. Due to their being part of the means of escape, the risk of ignition from an internal source is also limited; these areas should be effectively maintained as sterile with minimal fire loading. The adjacent wall types are constructed from non-combustible materials and as such a fire occurring in an adjacent compartment should not spread to this wall type via the external surface of the building.

This building operates a 'Stay Put' evacuation policy. It is anticipated that, due to the nature of the building's construction, a fire would be contained within the compartment of origin long enough for firefighter intervention to begin or for affected occupants to evacuate if necessary. The building has 2 escape staircases with lobby protection serving all floors. An AOV was located at the head of the staircase with smoke vents located in the communal corridors to prolong the tenability of the means of escape and to aid internal firefighter intervention. A

dry riser is fitted to the building with an outlet on every floor and a lift is available for fire service use. There is adequate access for the fire service to the building. The nearest fire station is approximately 1 mile away, and as such, the response to a call out would be expected to be swift.

In the event of a fire;

a) fire spread is likely to be at a rate within expectations for a building of this height; and/or
b) fire spread is unlikely to give rise to widespread secondary fires resulting in occupants being significantly harmed or prevented from escaping; and/or
c) 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; and/or
d) the fire and rescue service are likely to be able to intervene effectively to enable occupants to reach safety in time.

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

Low

Risk Factor Analysis 4

This analysis looks at façade configuration **MWBTW7** which includes wall construction **S3WEUW**.

Conclusion: This wall system is comprised of a 9mm render finished cement board mechanically fixed to the building's masonry substrate by 2x45mm timber battens. Contained within the system is 100mm of glass wool insulation. The render system was added during the building's refurbishment in 2009/2010.

Although various forms of renders are available, they are typically accepted as being of limited combustibility and can withstand high temperatures without catching fire or releasing harmful gases. The fire resistance of individual renders depends on its composition, thickness, and the type of reinforcement used. In general, thicker layers of render provide better fire resistance. Its insulating properties can contribute to how a building performs in a fire. In some cases, render can help protect the underlying structure (such as brick or wood) from high heat by providing a protective layer.

Fibre cement boards are made from a mixture of cement, cellulose fibres, sand, and water. This composition provides a strong, rigid material with beneficial fire-resistant properties. Fibre cement boards are generally classified as non-combustible. These boards can withstand high temperatures without degrading, which helps prevent the spread of fire. The cement component contributes to the board's ability to resist heat. Unlike some synthetic materials, fibre cement boards do not release toxic fumes when exposed to fire. Cement fibre boards are non-combustible and do not support the spread of flames. Since the primary ingredients in the board are cement and cellulose fibres, neither of which is flammable, they provide excellent fire resistance. Most cement fibre boards are rated to withstand high temperatures without compromising their structural integrity, typically up to 1000°C for a certain period of time.

The Timber battens are considered to be a combustible material. Timber, although combustible, is used in construction with regard to its quality to provide good fire resistance. The timber battens are not considered a primary material for the spread of external fire across the building as these are a fixing method for other cladding systems. Due to their thickness being measured at greater than 38mm, it is generally accepted that timber of this size provides adequate resistance to satisfy the minimum of 30 minutes required of cavity barriers.

Glass wool is known for its excellent fire-resistant properties. Mineral wool has a very high melting point, typically around 1,000°C to 1,200°C. This makes it non-combustible, meaning it does not contribute to the spread of fire. In the event of a fire, glass wool acts as a thermal barrier. Its fibrous structure traps air, reducing the transmission of heat to other parts of the structure and slowing the spread of fire. Glass wool maintains its insulation properties and shape even at high temperatures, further protecting the structural components of buildings, like the timber framework, from heat damage.

Masonry brickwork is generally considered fire-resistant and can provide significant protection against fire for structural and non-structural elements. Masonry bricks, typically made from clay or concrete, have very high melting points (above 1000°C for clay bricks), making them resistant to fire and heat. Bricks have low thermal conductivity. This helps prevent the spread of fire to adjacent areas and provides a thermal barrier that protects the underlying structure. Masonry walls provide effective fire containment, often preventing fire from spreading

between compartments within a building. The thickness and density of the masonry wall determine its fire resistance rating.

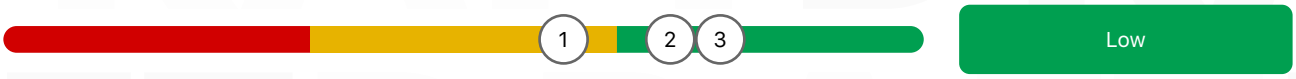
This wall system forms a significant portion of the building's external surface, present on all elevations and extending from the 1st floor to the 9th. Structural openings into this wall system include windows and balcony doors. No air cavity exists within this system, and as such, the mechanism for fire spread within the system is significantly limited, as the full-fill mineral wool insulation acts as a barrier to prevent the passage of fire and smoke. The render and non-combustible insulation will act to contain a fire externally venting from a compartment, reducing the likelihood of secondary fire spread between compartments and will not support or contribute to fire spread across the external surface of the building.

This building operates a 'Stay Put' evacuation policy. It is anticipated that, due to the nature of the building's construction, a fire would be contained within the compartment of origin long enough for firefighter intervention to begin or for affected occupants to evacuate if necessary. The building has 2 escape staircases with lobby protection serving all floors. An AOV was located at the head of the staircase with smoke vents located in the communal corridors to prolong the tenability of the means of escape and to aid internal firefighter intervention. A dry riser is fitted to the building with an outlet on every floor and a lift is available for fire service use. There is adequate access for the fire service to the building. The nearest fire station is approximately 1 mile away, and as such, the response to a call out would be expected to be swift.

In the event of a fire;

a) fire spread is likely to be at a rate within expectations for a building of this height; and/or
b) fire spread is unlikely to give rise to widespread secondary fires resulting in occupants being significantly harmed or prevented from escaping; and/or
c) 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; and/or
d) the fire and rescue service are likely to be able to intervene effectively to enable occupants to reach safety in time.

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



Risk Factor Analysis 5

This analysis looks at façade configuration **ZTTLY6** which includes wall construction **DYZHX9**.

Conclusion: This wall system is comprised of a 9mm HPL board mechanically fixed to the building's masonry substrate by 45mm timber battens. Contained within the system is 100mm of mineral wool insulation. The HPL system was added during the building's refurbishment in 2009/2010.

HPL are typically made of organic materials. They consist of layers of cellulose fibrous material impregnated with thermosetting resins. During the high-pressure process, defined as a simultaneous application of heat and pressure, the polymer chains are joined (or cross-linked) by intermolecular bonding (thermosets). This produces homogeneous panels that, in a fire situation, do not soften or drip. HPLs formed of cellulose and resin typically behave in a charring manner analogous to timber, with similar flame spread, energy release and mechanical behaviour (charring until breaking apart). With treatment for enhanced fire performance (usually by addition of chemical fire retardant), these behaviours can potentially be improved, but need to be known on a product-specific basis before they can be relied upon as providing better performance. As per the provided FRA, the HPL system was identified as 'CEP Claddings Ltd high pressure laminate panels' that achieve a Euroclass B,s2,d0 rating. This has not been independently confirmed, as no information was provided, nor could any be found during research by the author. The BBA certificates relating to this product appear to have been withdrawn.

The Timber battens are considered to be a combustible material. Timber, although combustible, is used in construction with regard to its quality to provide good fire resistance. The timber battens are not considered a primary material for the spread of external fire across the building as these are a fixing method for other cladding systems. Due to their thickness being measured at greater than 38mm, it is generally accepted that timber of this size provides adequate resistance to satisfy the minimum of 30 minutes required of cavity barriers.

Glass wool is known for its excellent fire-resistant properties. Mineral wool has a very high melting point, typically

around 1,000°C to 1,200°C. This makes it non-combustible, meaning it does not contribute to the spread of fire. In the event of a fire, glass wool acts as a thermal barrier. Its fibrous structure traps air, reducing the transmission of heat to other parts of the structure and slowing the spread of fire. Glass wool maintains its insulation properties and shape even at high temperatures, further protecting the structural components of buildings, like the timber framework, from heat damage.

Masonry brickwork is generally considered fire-resistant and can provide significant protection against fire for structural and non-structural elements. Masonry bricks, typically made from clay or concrete, have very high melting points (above 1000°C for clay bricks), making them resistant to fire and heat. Bricks have low thermal conductivity. This helps prevent the spread of fire to adjacent areas and provides a thermal barrier that protects the underlying structure. Masonry walls provide effective fire containment, often preventing fire from spreading between compartments within a building. The thickness and density of the masonry wall determine its fire resistance rating.

This wall system forms 2 sections of the building's external surface. On the front and rear elevations, it is present in limited sections at the centre, seated between windows extending from the 1st floor to the 9th. It also forms the external surface of the uppermost storey of the building. Structural openings into this wall system include windows and balcony doors. The central sections were observed to be contained within the window framework, the framework closing the perimeter of the HPL system. This means that each section is self-contained and there is no continuous vertical cavity. As a result, the mechanism for vertical fire spread involving these materials is reduced. As this wall type forms the surface of the uppermost storey, there is a limited mechanism for vertical fire spread from a fire occurring in an internal compartment. It is also noted that the uppermost storey of the building is set back from the floor below. As a result, the HPL system would be distanced from an externally venting fire occurring in a compartment below, and the likelihood of downwards spread of flame is also limited.

This building operates a 'Stay Put' evacuation policy. It is anticipated that, due to the nature of the building's construction, a fire would be contained within the compartment of origin long enough for firefighter intervention to begin or for affected occupants to evacuate if necessary. The building has 2 escape staircases with lobby protection serving all floors. An AOV was located at the head of the staircase with smoke vents located in the communal corridors to prolong the tenability of the means of escape and to aid internal firefighter intervention. A dry riser is fitted to the building with an outlet on every floor and a lift is available for fire service use. There is adequate access for the fire service to the building. The nearest fire station is approximately 1 mile away, and as such, the response to a call out would be expected to be swift.

In the event of a fire;

a) fire spread is likely to be at a rate within expectations for a building of this height; and/or
b) fire spread is unlikely to give rise to widespread secondary fires resulting in occupants being significantly harmed or prevented from escaping; and/or
c) 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; and/or
d) the fire and rescue service are likely to be able to intervene effectively to enable occupants to reach safety in time.

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

Low

Overall Building Risk Rating

Medium

Our professional opinion is that overall this Building represents a Neutral 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

Photo Ref. 1

Positive

F.3 Escape Route Design

Access to more than one staircase for escape

Photo Ref. 2, 3

Positive

F.4 Compartmentation

Adequate compartmentation in line with the expectations for a block of flats as Sandwell Council have implemented an inspection regime to ensure fire stopping and compartmentation are of a good standard

Positive

F.5 Smoke Control

Arrangements in which openable windows, AOVs or inlets and outlets of mechanical systems are of a satisfactory proximity aways 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

Photo Ref. 4, 5, 6

Positive

F.6 Fire Alarm & Detection

Within Flats
Smoke alarms are installed to a minimum LD3 standard (hallway only).
Some flats have LD1 installations (all rooms except bathrooms).
Sampled flats and standards:
LD1: Flats 36, 102
LD3: Flats 87, 88, 91, 94, 96, 101

Positive

F.7 Fire Suppression

A dedicated deluge/suppressant system has been installed in the bin store only

Neutral

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.

Positive

F.9 Rising Mains

Suitable rising main present

Photo Ref. 7, 8

Neutral

F.10 Lifts Used By Firefighters

Suitable firefighting lift present

Photo Ref. 9

Neutral

F.11 Specific Fire Hazards

Vehicle parking on roadways adjacent to building

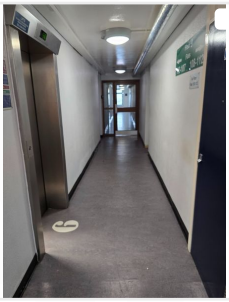
Negative

Ground Floor commercial units

Neutral

Photos

1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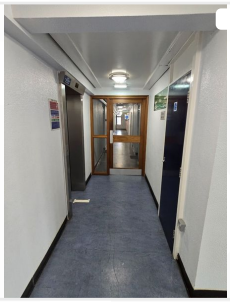
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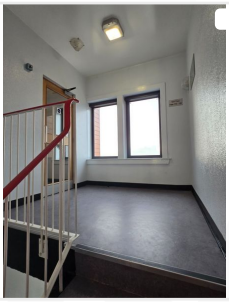
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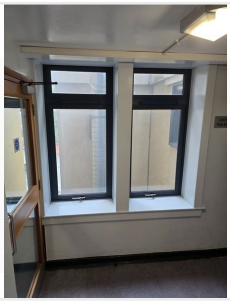
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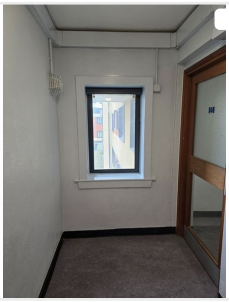
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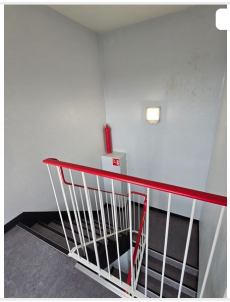
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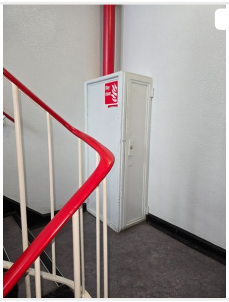
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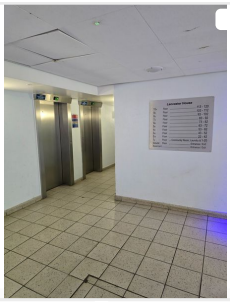
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Fire Service Intervention

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	180 Seconds	3 Minutes
Arrival Protocol And Entry Preparation Time	180 Seconds	3 Minutes
Firefighting Travel In Firefighting Lift	60 Seconds	1 Minute
Firefighter Travel Walking Up Two Flights Of Stairs To Fire Floor (75 Seconds)	75 Seconds	1 Minute 15 Seconds
Total Time	**755 Seconds**	**12 Minutes 35 Seconds**

Nearest Fire Station

Oldbury Fire Station, 1 mile, approx 3 minute travel time under normal traffic conditions

Wall Constructions

Wall Construction	Build-up
Wall Type 1 - Render over mineral wool (1M51XV)	• External Surface Material (Render) • Insulation (Mineral Wool Insulation) • Substrate (Original brickwork)
Wall Type 2 - Terracotta over mineral wool (VQP87K)	• External Surface Material (Terracotta Tile) • Framework (Aluminium L/T Rail) • Cavity • Insulation (Mineral Wool Insulation) • Substrate (Original brickwork)
Wall Type 3 - Curtain wall (CGV3DH)	• Framework (Aluminium) • Infill • Substrate (Original brickwork) • Internal Lining
Wall Type 4 - Rendered cement board over glass wool (S3WEUW)	• External Surface Material (Rendered Cement Board) • Framework (Timber Batten) • Insulation (Glass Wool) • Substrate (Original brickwork)
Wall Type 5 - HPL (DYZHX9)	• External Surface Material (HPL) • Framework (Timber Batten) • Cavity • Insulation (Mineral Wool Insulation) • Substrate (Original brickwork)

Wall Construction: Wall Type 1 - Render over mineral wool

Construction Reference
1M51XV

This wall construction was identified by wall inspections GMTNJF, QM6QF9, and 4ST7PZ. The build-up, cavity barrier, and floor slab information is taken directly from inspection GMTNJF. See the Inspections section of this report for full inspection details.

Construction	Effect	Risk
Wall Type 1 - Render over mineral wool (1M51XV)	Positive	Low

Build-Up

3 Elements	Thickness/Depth	Material	Rating (BS EN13501)
External Surface Material	6mm	Render	A2 - Limited Combustibility
Insulation	100mm	Mineral Wool Insulation	A1 - Non-Combustible
Substrate	102mm	Original brickwork	A1 - Non-Combustible

Cavity Barriers

No external cavity

Fire Performance

K.1 General

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

K.2 External Surfaces

Class A2 — Positive

K.3 Facings/Cladding Panels

Low HRR — Positive

Adhesive fixed — Negative

K.4 Panel Construction

Not Applicable

K.5 Cavities

No external air cavity.
Facings into the cavity at least Class A2. — Positive

K.6 Insulation

Mineral insulation — Positive

K.7 Substrate

Masonry, >75 mm thick — Positive

K.8 Sheathing Boards

Not Applicable

K.9 Insulated Core Panels

Not Applicable

K.10 ETICS

Thin organic render or inorganic render on Class A1 insulation

Positive

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

PAS Standard Benchmark

L10 Benchmark

ETICS -

These systems are sometimes referred to as rendered systems, as they feature an externally applied render coat as their weatherproof surface.

The level of risk that might potentially be posed by these systems is generally dictated by the type of insulation they incorporate.
• Mineral wool-based systems are likely to be low-risk.
• Rigid thermoset foam-based systems can be low-risk if fire barriers and cavity barriers (if a cavity exists behind the insulation) are properly provided. If there are gaps or other deficiencies then the level of risk might increase to medium or, in extreme cases, high.
• Thermoplastic foam-based systems might be low-risk if fire barriers and cavity barriers (if a cavity exists behind the insulation) are properly provided and where there is a significant thickness of cement-based render applied to the insulation. If there are gaps or other deficiencies, a non-cement-based (i.e. polymeric organic) render has been used or an insufficient thickness of cement-based render has been applied, then the level of risk is high.

In particular regard to thermoplastic systems, there are historic systems which are known to have had approximately 20 mm thick slivers of EPS insulation passing across the front of fire barriers, providing a route for fire to rapidly circumvent the barriers. It needs to be confirmed by inspection whether or not this situation exists; if it does exist, such a system is high risk irrespective of the type of render provided.

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. Therefore, a BR135 benchmark would not be applicable for this external wall type

Wall Construction: Wall Type 2 - Terracotta over mineral wool

Construction Reference
VQP87K

This wall construction was identified by wall inspections J766CE, YM8IH6, and CPD5K5. The build-up, cavity barrier, and floor slab information is taken directly from inspection J766CE. See the Inspections section of this report for full inspection details.

Construction	Effect	Risk
Wall Type 2 - Terracotta over mineral wool (VQP87K)	Positive	Low

Build-Up

5 Elements	Thickness/Depth	Material	Rating (BS EN13501)
External Surface Material	15mm	Terracotta Tile	A1 - Non-Combustible
Framework	35mm	Aluminium L/T Rail	A2 - Limited Combustibility
Cavity	30mm		
Insulation	100mm	Mineral Wool Insulation	A1 - Non-Combustible
Substrate	102mm	Original brickwork	A1 - Non-Combustible

Cavity Barriers

No cavity barrier identified at this inspection location

Fire Performance

K.1 General

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

K.2 External Surfaces

Class A1	Positive

K.3 Facings/Cladding Panels

Low HRR	Positive
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.	Positive

K.6 Insulation

Mineral insulation	Positive

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

PAS Standard Benchmark

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.

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. Therefore, a BR135 benchmark would not be applicable for this external wall type

Wall Construction: Wall Type 3 - Curtain wall

Construction Reference
CGV3DH

This wall construction was identified by wall inspections 2J1W1C and PQP523. The build-up, cavity barrier, and floor slab information is taken directly from inspection 2J1W1C. See the Inspections section of this report for full inspection details.

Construction	Effect	Risk
Wall Type 3 - Curtain wall (CGV3DH)	Neutral	Low

Build-Up

4 Elements	Thickness/Depth	Material	Rating (BS EN13501)
Framework		Aluminium	A2 - Limited Combustibility
Infill			A2 - Limited Combustibility
Glazing			
Substrate	300mm	Original brickwork	A1 - Non-Combustible
Internal Lining		Material Brand: Plasterboard	A2 - Limited Combustibility

Cavity Barriers

None

Fire Performance

K.1 General

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

K.2 External Surfaces

Class A1/A2	Positive

K.3 Facings/Cladding Panels

Low HRR	Positive
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	Neutral

K.6 Insulation

No insulation	Positive

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

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

PAS Standard Benchmark

L5 Benchmark

SPANDREL / IN-FILL PANELS

The terms “spandrel panel” and “infill panel” are used interchangeably throughout the industry to refer to panels which are normally fitted in lieu of glazing in either window fenestration systems or curtain wall units. The edges of these panels usually expose the insulating core and are normally only protected by the frame into which they are installed. They are sometimes protected with aluminium foil tape but this cannot be assumed.
Spandrel and infill panels are typically some form of composite, such as:
• metal skins with an insulating core;
• metal skins with an insulating and timber (typically plywood) core;
• metal external face with insulating core and timber (typically plywood) internal face;
• HPL skins with an insulating core; and
• solid HPL.
Their performance needs to be assessed in light of the materials involved in their construction (as described in this annex) and the manner in which they interact with compartmentation.
• Panels which are installed in such a way as to cross compartment lines (e.g. to conceal the edges of floor slabs) need to be considered in light of the potential route they provide for fire to spread from one compartment to another.
• Panels which are installed entirely within the confines of a compartment (as it meets the external wall) are unlikely to have a significant impact on fire spread, unless their performance is such that they are likely to contribute to substantial flame extension.

L10 Benchmark

CURTAIN WALLING SYSTEMS -

There are two principal forms of curtain wall system.
• Stand-off systems are built beyond the edges of floor slabs and run continuously across the height and width of a building. Unless a strategy has been devised to negate this need, fire stopping needs to be provided between slab edges and the inside face of the curtain wall system.
• Infill systems (now more commonly referred to as window assemblies) are built inboard of slab and/or wall edges, although they might pass across particular floor and/or wall lines to achieve a particular architectural objective. Where the system is broken up by lines of fire compartmentation, this limits the extent/speed at which fire can spread across the system.

The structures of these systems can differ substantially; whereas infill systems are invariably supported at regular intervals by the building’s primary structure, low-rise stand-off systems can transmit their load down to ground level, with only lateral support back to the primary structure.

Regardless of whether a curtain wall system is built as a stick system (assembled on site) or a unitized system (prefabricated panels), it is the materials used to form the framework that influence the fire performance.
• Steel framed systems can provide good edge protection to the panels in the curtain wall (provided the geometry actually covers and protects edges) as well as good resistance to collapse in the event of fire.
• uPVC framed systems are combustible; they might offer some edge protection and resistance to collapse if steelwork is embedded within them, but this would need to be confirmed.
• Aluminium framed systems are non-combustible but melt when exposed to fire, offering little edge protection and potentially risking collapse (which can be extensive if the aluminium transmits the load of the curtain wall down to ground level).
The other components of curtain wall systems are covered in Table L.5.

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. Therefore, a BR135 benchmark would not be applicable for this external wall type

Wall Construction: Wall Type 4 - Rendered cement board over glass wool

Construction Reference
S3WEUW

This wall construction was identified by wall inspection I1SIWP. The build-up, cavity barrier, and floor slab information is taken directly from inspection I1SIWP. See the Inspections section of this report for full inspection details.

Construction	Effect	Risk
Wall Type 4 - Rendered cement board over glass wool (S3WEUW)	Neutral	Medium

Build-Up

4 Elements	Thickness/Depth	Material	Rating (BS EN13501)
External Surface Material	9mm	Rendered Cement Board	A2 - Limited Combustibility
Framework	90mm	Timber Batten	D - Highly Combustible
2x 45mm Timber battens			
Insulation	100mm	Glass Wool	A2 - Limited Combustibility
Substrate	102mm	Original brickwork	A1 - Non-Combustible

Cavity Barriers

No external cavity

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 A2	Positive

K.3 Facings/Cladding Panels

Low HRR	Positive
Mechanically fixed	Positive

K.4 Panel Construction

Not Applicable

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

Not Applicable

K.10 ETICS

Thin organic render or inorganic render on Class A1/A2 insulation

Positive

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

PAS Standard Benchmark

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.

L10 Benchmark

ETICS -

These systems are sometimes referred to as rendered systems, as they feature an externally applied render coat as their weatherproof surface.

The level of risk that might potentially be posed by these systems is generally dictated by the type of insulation they incorporate.
• Mineral wool-based systems are likely to be low-risk.
• Rigid thermoset foam-based systems can be low-risk if fire barriers and cavity barriers (if a cavity exists behind the insulation) are properly provided. If there are gaps or other deficiencies then the level of risk might increase to medium or, in extreme cases, high.
• Thermoplastic foam-based systems might be low-risk if fire barriers and cavity barriers (if a cavity exists behind the insulation) are properly provided and where there is a significant thickness of cement-based render applied to the insulation. If there are gaps or other deficiencies, a non-cement-based (i.e. polymeric organic) render has been used or an insufficient thickness of cement-based render has been applied, then the level of risk is high.

In particular regard to thermoplastic systems, there are historic systems which are known to have had approximately 20 mm thick slivers of EPS insulation passing across the front of fire barriers, providing a route for fire to rapidly circumvent the barriers. It needs to be confirmed by inspection whether or not this situation exists; if it does exist, such a system is high risk irrespective of the type of render provided.

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. Therefore, a BR135 benchmark would not be applicable for this external wall type

Wall Construction: Wall Type 5 - HPL

Construction Reference
DYZHX9

This wall construction was identified by wall inspection GDD9AZ. The build-up, cavity barrier, and floor slab information is taken directly from inspection GDD9AZ. See the Inspections section of this report for full inspection details.

Construction	Effect	Risk
Wall Type 5 - HPL (DYZHX9)	Neutral	Medium

Build-Up

5 Elements	Thickness/Depth	Material	Rating (BS EN13501)
External Surface Material	9mm	HPL Material Brand: CEP Claddings Ltd high pressure laminate panels class B,s2,d0 (As per FRA)	B - Combustible
Framework	45mm	Timber Batten	D - Highly Combustible
Cavity	45mm		
Insulation	100mm	Mineral Wool Insulation	A1 - Non-Combustible
Substrate	102mm	Original brickwork	A1 - Non-Combustible

Cavity Barriers

No cavity barrier identified at this inspection location

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 B	Positive

K.3 Facings/Cladding Panels

Low HRR	Positive
Mechanically fixed	Positive

K.4 Panel Construction

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

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 Timber battens greater than 38mm. Window frames close the cavity around apertures. Non-combustible insulation.	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

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

PAS Standard Benchmark

L9 Benchmark

HPL -

HPLs are most commonly formed of a mixture of cellulose (wood pulp, recycled paper or similar) and combustible polymeric resin, though external wall assessors need to be aware that any combination of materials formed in a press can be termed a “high pressure laminate” and might be difficult to differentiate visually.

HPLs formed of cellulose and resin typically behave in a charring manner analogous to timber, with similar flame spread, energy release and mechanical behaviour (charring until breaking apart). With treatment for enhanced fire performance (usually by additive of chemical fire retardant), these behaviours can potentially be improved, but need to be known on a product-specific basis before they can be relied upon as providing better performance.

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. Therefore, a BR135 benchmark would not be applicable for this external wall type

Façade Configuration: E5KTDS

Items in Façade

5 Items	Effect	Risk
Wall Construction Wall Type 1 - Render over mineral wool (1M51XV)	Positive	Low
Attachment Cantilever Balcony (KU7X3S)	Positive	Low
Attachment Inset Balcony (NYVKYB)	Positive	Low
External Door Single Leaf Entrance Doors (4NQ3MR)	Neutral	Low
External Window Top, Mid, Side Hung Casements (PCGT8Y)	Neutral	Low

Façade Configuration Risk Factors

N.1 Building Height/Cladding Height

>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 accidently 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

No open air cavity

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, 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

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 and smoke spread into the escape routes to give rise to untenable conditions is not possible

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

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: This wall system is comprised of a 6mm render finish adhesively bonded to 100mm of mineral wool insulation that is mechanically fixed to the building's masonry substrate. The render system was identified as a Structherm NSC2a system and was added during the building's refurbishment in 2009/2010.

Although various forms of renders are available, they are typically accepted as being of limited combustibility and can withstand high temperatures without catching fire or releasing harmful gases. The NSC2a system achieves a Euroclass A2 rating and so is considered to be of limited combustibility. The fire resistance of individual renders depends on its composition, thickness, and the type of reinforcement used. In general, thicker layers of render provide better fire resistance. Its insulating properties can contribute to how a building performs in a fire. In some cases, render can help protect the underlying structure (such as brick or wood) from high heat by providing a protective layer.

Mineral wool, which includes materials like stone wool, is known for its excellent fire-resistant properties. Mineral wool has a very high melting point, typically around 1,000°C to 1,200°C. This makes it non-combustible, meaning it does not contribute to the spread of fire. In the event of a fire, mineral wool acts as a thermal barrier. Its fibrous structure traps air, reducing the transmission of heat to other parts of the structure and slowing the spread of fire. Mineral wool maintains its insulation properties and shape even at high temperatures, further protecting the structural components of buildings, like steel, from heat damage.

Masonry brickwork is generally considered fire-resistant and can provide significant protection against fire for structural and non-structural elements. Masonry bricks, typically made from clay or concrete, have very high melting points (above 1000°C for clay bricks), making them resistant to fire and heat. Bricks have low thermal conductivity. This helps prevent the spread of fire to adjacent areas and provides a thermal barrier that protects the underlying structure. Masonry walls provide effective fire containment, often preventing fire from spreading between compartments within a building. The thickness and density of the masonry wall determine its fire resistance rating.

This wall system forms a significant portion of the building's external surface, present on all elevations and extending from the 1st floor to the 9th. Structural openings into this wall system include windows and balcony doors. No air cavity exists within this system, and as such, the mechanism for fire spread within the system is significantly limited, as the full-fill mineral wool insulation acts as a barrier to prevent the passage of fire and smoke. The render and non-combustible insulation will act to contain a fire externally venting from a compartment, reducing the likelihood of secondary fire spread between compartments and will not support or contribute to fire spread across the external surface of the building.

This building operates a ‘Stay Put’ evacuation policy. It is anticipated that, due to the nature of the building’s construction, a fire would be contained within the compartment of origin long enough for firefighter intervention to

begin or for affected occupants to evacuate if necessary. The building has 2 escape staircases with lobby protection serving all floors. An AOV was located at the head of the staircase with smoke vents located in the communal corridors to prolong the tenability of the means of escape and to aid internal firefighter intervention. A dry riser is fitted to the building with an outlet on every floor and a lift is available for fire service use. There is adequate access for the fire service to the building. The nearest fire station is approximately 1 mile away, and as such, the response to a call out would be expected to be swift.

In the event of a fire;

a) fire spread is likely to be at a rate within expectations for a building of this height; and/or
b) fire spread is unlikely to give rise to widespread secondary fires resulting in occupants being significantly harmed or prevented from escaping; and/or
c) 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; and/or
d) the fire and rescue service are likely to be able to intervene effectively to enable occupants to reach safety in time.

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

Façade Configuration: 8V9UF9

Items in Façade

6 Items	Effect	Risk
Wall Construction Wall Type 2 - Terracotta over mineral wool (VQP87K)	Positive	Low
Attachment Cantilever Balcony (KU7X3S)	Positive	Low
Attachment Inset Balcony (NYVKYB)	Positive	Low
Attachment Brise Soleil (JD4G5D)	Neutral	Low
External Door Single Leaf Entrance Doors (4NQ3MR)	Neutral	Low
External Window Top, Mid, Side Hung Casements (PCGT8Y)	Neutral	Low

Façade Configuration Risk Factors

N.1 Building Height/Cladding Height

>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 accidently 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

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, 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

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 and smoke spread into the escape routes to give rise to untenable conditions is not possible

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

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: This wall system is comprised of a 15mm terracotta tile supported by an aluminium frame that is mechanically fixed to the building's masonry substrate. Within the framework is 100mm mineral wool insulation. The system was added during the building's refurbishment in 2009/2010.

The terracotta tile is considered to be non-combustible and as such achieves a Euroclass A1 rating. The terracotta tile system was identified in the provided FRA as a Wienerberger Argeton system. The terracotta tiles are formed using a natural and organic clay material that has been shaped and kiln-baked. This process is in excess of 1000° C. As such, it in anticipated that this façade material will not support or contribute to the development of fire spread across the external surface of the building.

The supporting framework was identified to be aluminium. Although aluminium is considered to be of limited combustibility, aluminium is recognised as having a lower melting point than other metals used in construction. This may mean that in scenarios resulting in prolonged exposure to fire, where temperatures exceed 600 degrees, the material may begin to lose its structural integrity.

Mineral wool, which includes materials like stone wool, is known for its excellent fire-resistant properties. Mineral wool has a very high melting point, typically around 1,000°C to 1,200°C. This makes it non-combustible, meaning it does not contribute to the spread of fire. In the event of a fire, mineral wool acts as a thermal barrier. Its fibrous structure traps air, reducing the transmission of heat to other parts of the structure and slowing the spread of fire. Mineral wool maintains its insulation properties and shape even at high temperatures, further protecting the structural components of buildings, such as the aluminium framework, from heat damage.

Masonry brickwork is generally considered fire-resistant and can provide significant protection against fire for structural and non-structural elements. Masonry bricks, typically made from clay or concrete, have very high melting points (above 1000°C for clay bricks), making them resistant to fire and heat. Bricks have low thermal conductivity. This helps prevent the spread of fire to adjacent areas and provides a thermal barrier that protects the underlying structure. Masonry walls provide effective fire containment, often preventing fire from spreading between compartments within a building. The thickness and density of the masonry wall determine its fire resistance rating.

This wall system forms various sections of the building's external surface, present on all elevations and extending from the 1st floor to the 9th. It forms a vertical section on the front and rear elevations in the centre of the elevation, and forms vertical sections in the corners of the other elevations. Structural openings into this wall system include windows. It is recognised that there is a limited (30mm) air cavity within this system; however, it is our opinion that the mechanism for fire spread within the system is significantly limited, as the full-fill mineral wool insulation acts as a barrier to prevent the passage of fire and smoke and will not ignite, sustain, or contribute to fire spread within the internal envelope of the system. The non-combustible outer leaf and insulation will act to contain a fire

externally venting from a compartment, reducing the likelihood of secondary fire spread between compartments and will not support or contribute to fire spread across the external surface of the building.

This building operates a 'Stay Put' evacuation policy. It is anticipated that, due to the nature of the building's construction, a fire would be contained within the compartment of origin long enough for firefighter intervention to begin or for affected occupants to evacuate if necessary. The building has 2 escape staircases with lobby protection serving all floors. An AOV was located at the head of the staircase with smoke vents located in the communal corridors to prolong the tenability of the means of escape and to aid internal firefighter intervention. A dry riser is fitted to the building with an outlet on every floor and a lift is available for fire service use. There is adequate access for the fire service to the building. The nearest fire station is approximately 1 mile away, and as such, the response to a call out would be expected to be swift.

In the event of a fire;

a) fire spread is likely to be at a rate within expectations for a building of this height; and/or
b) fire spread is unlikely to give rise to widespread secondary fires resulting in occupants being significantly harmed or prevented from escaping; and/or
c) 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; and/or
d) the fire and rescue service are likely to be able to intervene effectively to enable occupants to reach safety in time.

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

Façade Configuration: MSAC54

Items in Façade

2 Items	Effect	Risk
Wall Construction Wall Type 3 - Curtain wall (CGV3DH)	Neutral	Low
External Window Top, Mid, Side Hung Casements (PCGT8Y)	Neutral	Low

Façade Configuration Risk Factors

N.1 Building Height/Cladding Height

>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 accidently 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

No cavity	Positive

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

Remote from windows and openings, such that fire and smoke spread into the building, causing secondary fires, is not possible

Positive

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

Adjacent to windows and openings onto escape routes, but the same fire could not spread to affect more than one escape route

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: This curtain wall system is comprised of glazing supported by an aluminium frame that is mechanically fixed to the building's masonry substrate. Spandrel panels appear to have been installed within the framework.

The glazing is anticipated to be of limited combustibility or better, and as such would not be expected to support, sustain, or contribute to fire spread across the external surface of the building.

The supporting framework was identified to be aluminium. Although aluminium is considered to be of limited combustibility, aluminium is recognised as having a lower melting point than other metals used in construction. This may mean that in scenarios resulting in prolonged exposure to fire, where temperatures exceed 600 degrees, the material may begin to lose its structural integrity.

Masonry brickwork is generally considered fire-resistant and can provide significant protection against fire for structural and non-structural elements. Masonry bricks, typically made from clay or concrete, have very high melting points (above 1000°C for clay bricks), making them resistant to fire and heat. Bricks have low thermal conductivity. This helps prevent the spread of fire to adjacent areas and provides a thermal barrier that protects the underlying structure. Masonry walls provide effective fire containment, often preventing fire from spreading between compartments within a building. The thickness and density of the masonry wall determine its fire resistance rating.

This wall system forms vertical sections of the building's external surface, present on the north and south elevations and extending from the 1st floor to the 10th, and forms the external surface of the means of escape. Structural openings into this wall system include windows. It is recognised that spandrel panels are included as part of this system. It was identified that they are installed in front of the building's original brickwork. Due to their location, the likelihood of exposure to external sources of ignition is limited. Due to their being part of the means of escape, the risk of ignition from an internal source is also limited; these areas should be effectively maintained as sterile with minimal fire loading. The adjacent wall types are constructed from non-combustible materials and as such a fire occurring in an adjacent compartment should not spread to this wall type via the external surface of the building.

This building operates a 'Stay Put' evacuation policy. It is anticipated that, due to the nature of the building's construction, a fire would be contained within the compartment of origin long enough for firefighter intervention to begin or for affected occupants to evacuate if necessary. The building has 2 escape staircases with lobby protection serving all floors. An AOV was located at the head of the staircase with smoke vents located in the communal corridors to prolong the tenability of the means of escape and to aid internal firefighter intervention. A dry riser is fitted to the building with an outlet on every floor and a lift is available for fire service use. There is adequate access for the fire service to the building. The nearest fire station is approximately 1 mile away, and as such, the response to a call out would be expected to be swift.

In the event of a fire;

a) fire spread is likely to be at a rate within expectations for a building of this height; and/or
b) fire spread is unlikely to give rise to widespread secondary fires resulting in occupants being significantly harmed or prevented from escaping; and/or
c) 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; and/or
d) the fire and rescue service are likely to be able to intervene effectively to enable occupants to reach safety in time.

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

Low

Façade Configuration: MWBTW7

Items in Façade

3 Items	Effect	Risk
Wall Construction Wall Type 4 - Rendered cement board over glass wool (S3WEUW)	Neutral	Medium
External Door Single Leaf Entrance Doors (4NQ3MR)	Neutral	Low
External Window Top, Mid, Side Hung Casements (PCGT8Y)	Neutral	Low

Façade Configuration Risk Factors

N.1 Building Height/Cladding Height

>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 accidently 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

Openings in façade limited to ventilation outlets — Neutral

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 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 and smoke spread into the escape routes to give rise to untenable conditions is not possible

Positive

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: This wall system is comprised of a 9mm render finished cement board mechanically fixed to the building's masonry substrate by 2x45mm timber battens. Contained within the system is 100mm of glass wool insulation. The render system was added during the building's refurbishment in 2009/2010.

Although various forms of renders are available, they are typically accepted as being of limited combustibility and can withstand high temperatures without catching fire or releasing harmful gases. The fire resistance of individual renders depends on its composition, thickness, and the type of reinforcement used. In general, thicker layers of render provide better fire resistance. Its insulating properties can contribute to how a building performs in a fire. In some cases, render can help protect the underlying structure (such as brick or wood) from high heat by providing a protective layer.

Fibre cement boards are made from a mixture of cement, cellulose fibres, sand, and water. This composition provides a strong, rigid material with beneficial fire-resistant properties. Fibre cement boards are generally classified as non-combustible. These boards can withstand high temperatures without degrading, which helps prevent the spread of fire. The cement component contributes to the board's ability to resist heat. Unlike some synthetic materials, fibre cement boards do not release toxic fumes when exposed to fire. Cement fibre boards are non-combustible and do not support the spread of flames. Since the primary ingredients in the board are cement and cellulose fibres, neither of which is flammable, they provide excellent fire resistance. Most cement fibre boards are rated to withstand high temperatures without compromising their structural integrity, typically up to 1000°C for a certain period of time.

The Timber battens are considered to be a combustible material. Timber, although combustible, is used in construction with regard to its quality to provide good fire resistance. The timber battens are not considered a primary material for the spread of external fire across the building as these are a fixing method for other cladding systems. Due to their thickness being measured at greater than 38mm, it is generally accepted that timber of this size provides adequate resistance to satisfy the minimum of 30 minutes required of cavity barriers.

Glass wool is known for its excellent fire-resistant properties. Mineral wool has a very high melting point, typically around 1,000°C to 1,200°C. This makes it non-combustible, meaning it does not contribute to the spread of fire. In the event of a fire, glass wool acts as a thermal barrier. Its fibrous structure traps air, reducing the transmission of heat to other parts of the structure and slowing the spread of fire. Glass wool maintains its insulation properties and shape even at high temperatures, further protecting the structural components of buildings, like the timber framework, from heat damage.

Masonry brickwork is generally considered fire-resistant and can provide significant protection against fire for structural and non-structural elements. Masonry bricks, typically made from clay or concrete, have very high melting points (above 1000°C for clay bricks), making them resistant to fire and heat. Bricks have low thermal conductivity. This helps prevent the spread of fire to adjacent areas and provides a thermal barrier that protects the underlying structure. Masonry walls provide effective fire containment, often preventing fire from spreading between compartments within a building. The thickness and density of the masonry wall determine its fire resistance rating.

This wall system forms a significant portion of the building's external surface, present on all elevations and extending from the 1st floor to the 9th. Structural openings into this wall system include windows and balcony doors. No air cavity exists within this system, and as such, the mechanism for fire spread within the system is significantly limited, as the full-fill mineral wool insulation acts as a barrier to prevent the passage of fire and smoke. The render and non-combustible insulation will act to contain a fire externally venting from a compartment, reducing the likelihood of secondary fire spread between compartments and will not support or contribute to fire spread across the external surface of the building.

This building operates a ‘Stay Put’ evacuation policy. It is anticipated that, due to the nature of the building’s construction, a fire would be contained within the compartment of origin long enough for firefighter intervention to begin or for affected occupants to evacuate if necessary. The building has 2 escape staircases with lobby protection serving all floors. An AOV was located at the head of the staircase with smoke vents located in the communal corridors to prolong the tenability of the means of escape and to aid internal firefighter intervention. A dry riser is fitted to the building with an outlet on every floor and a lift is available for fire service use. There is adequate access for the fire service to the building. The nearest fire station is approximately 1 mile away, and as such, the response to a call out would be expected to be swift.

In the event of a fire;

a) fire spread is likely to be at a rate within expectations for a building of this height; and/or
b) fire spread is unlikely to give rise to widespread secondary fires resulting in occupants being significantly harmed or prevented from escaping; and/or
c) 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; and/or
d) the fire and rescue service are likely to be able to intervene effectively to enable occupants to reach safety in time.

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

Low

Façade Configuration: ZTTLY6

Items in Façade

3 Items	Effect	Risk
Wall Construction Wall Type 5 - HPL (DYZHX9)	Neutral	Medium
External Door Single Leaf Entrance Doors (4NQ3MR)	Neutral	Low
External Window Top, Mid, Side Hung Casements (PCGT8Y)	Neutral	Low

Façade Configuration Risk Factors

N.1 Building Height/Cladding Height

>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 accidently 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

Positive

N.4 Cavities & Openings

Cavity limited in vertical extent, e.g. ventilated rainscreen that spans more than one floor level but not all floor levels

Neutral

N.5 Infill / Spandrel Panels

Not Applicable

N.6 Setbacks - Combustible Cladding Setback from Wall Edge

Combustible cladding is set back from the wall edge, such that direct flame impingement on the cladding from a fire on a lower level is highly unlikely.

HPL cladding is present on the uppermost floor, set back from the floors below.

Positive

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

Not Applicable

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

Remote from windows and openings, such that fire and smoke spread into the escape routes to give rise to untenable conditions is not possible

Positive

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: This wall system is comprised of a 9mm HPL board mechanically fixed to the building's masonry substrate by 45mm timber battens. Contained within the system is 100mm of mineral wool insulation. The HPL system was added during the building's refurbishment in 2009/2010.

HPL are typically made of organic materials. They consist of layers of cellulose fibrous material impregnated with thermosetting resins. During the high-pressure process, defined as a simultaneous application of heat and pressure, the polymer chains are joined (or cross-linked) by intermolecular bonding (thermosets). This produces homogeneous panels that, in a fire situation, do not soften or drip. HPLs formed of cellulose and resin typically behave in a charring manner analogous to timber, with similar flame spread, energy release and mechanical behaviour (charring until breaking apart). With treatment for enhanced fire performance (usually by addition of chemical fire retardant), these behaviours can potentially be improved, but need to be known on a product-specific basis before they can be relied upon as providing better performance. As per the provided FRA, the HPL system was identified as 'CEP Claddings Ltd high pressure laminate panels' that achieve a Euroclass B,s2,d0 rating. This has not been independently confirmed, as no information was provided, nor could any be found during research by the author. The BBA certificates relating to this product appear to have been withdrawn.

The Timber battens are considered to be a combustible material. Timber, although combustible, is used in construction with regard to its quality to provide good fire resistance. The timber battens are not considered a primary material for the spread of external fire across the building as these are a fixing method for other cladding systems. Due to their thickness being measured at greater than 38mm, it is generally accepted that timber of this size provides adequate resistance to satisfy the minimum of 30 minutes required of cavity barriers.

Glass wool is known for its excellent fire-resistant properties. Mineral wool has a very high melting point, typically around 1,000°C to 1,200°C. This makes it non-combustible, meaning it does not contribute to the spread of fire. In the event of a fire, glass wool acts as a thermal barrier. Its fibrous structure traps air, reducing the transmission of heat to other parts of the structure and slowing the spread of fire. Glass wool maintains its insulation properties and shape even at high temperatures, further protecting the structural components of buildings, like the timber framework, from heat damage.

Masonry brickwork is generally considered fire-resistant and can provide significant protection against fire for structural and non-structural elements. Masonry bricks, typically made from clay or concrete, have very high melting points (above 1000°C for clay bricks), making them resistant to fire and heat. Bricks have low thermal conductivity. This helps prevent the spread of fire to adjacent areas and provides a thermal barrier that protects the underlying structure. Masonry walls provide effective fire containment, often preventing fire from spreading between compartments within a building. The thickness and density of the masonry wall determine its fire resistance rating.

This wall system forms 2 sections of the building's external surface. On the front and rear elevations, it is present in limited sections at the centre, seated between windows extending from the 1st floor to the 9th. It also forms the external surface of the uppermost storey of the building. Structural openings into this wall system include windows and balcony doors. The central sections were observed to be contained within the window framework, the framework closing the perimeter of the HPL system. This means that each section is self-contained and there is no continuous vertical cavity. As a result, the mechanism for vertical fire spread involving these materials is reduced. As this wall type forms the surface of the uppermost storey, there is a limited mechanism for vertical fire spread from a fire occurring in an internal compartment. It is also noted that the uppermost storey of the building is set back from the floor below. As a result, the HPL system would be distanced from an externally venting fire occurring in a compartment below, and the likelihood of downwards spread of flame is also limited.

This building operates a 'Stay Put' evacuation policy. It is anticipated that, due to the nature of the building's construction, a fire would be contained within the compartment of origin long enough for firefighter intervention to begin or for affected occupants to evacuate if necessary. The building has 2 escape staircases with lobby protection serving all floors. An AOV was located at the head of the staircase with smoke vents located in the communal corridors to prolong the tenability of the means of escape and to aid internal firefighter intervention. A dry riser is fitted to the building with an outlet on every floor and a lift is available for fire service use. There is adequate access for the fire service to the building. The nearest fire station is approximately 1 mile away, and as such, the response to a call out would be expected to be swift.

In the event of a fire;

a) fire spread is likely to be at a rate within expectations for a building of this height; and/or
b) fire spread is unlikely to give rise to widespread secondary fires resulting in occupants being significantly harmed or prevented from escaping; and/or
c) 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; and/or
d) the fire and rescue service are likely to be able to intervene effectively to enable occupants to reach safety in time.

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

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

Smoke alarms are installed to a minimum LD3 standard (hallway only).
Some flats have LD1 installations (all rooms except bathrooms).
Sampled flats and standards:
LD1: Flats 36, 102
LD3: Flats 87, 88, 91, 94, 96, 101
Communal Areas
No communal fire alarm system in corridors, lobbies, or stairwells.
Reason: The building operates under a Stay Put – Unless evacuation strategy.
Avoidance of vandalism and false alarms.
Supported by compartmentation and AOVs.
Dedicated Alarm Systems (Isolated Zones)
Community Room (1st floor):
Independent fire alarm system.
Weekly tested and serviced every 6 months.
Control panel located inside the room entrance.
Server Room (Lower Ground):
Independent fire alarm system.
Remotely monitored.
Alarm panel just inside entrance.

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

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) throughout:
Locations: Stairwells, atrium, corridors (1st–10th floors), wing corridors.
Override switches at: Ground floor lobby & each 10th floor landing
Maintained and tested bi-annually in line with BS 7346.

Suppression Systems

Partial sprinkler system installed (Detailed in Description)

Suppression System

A dedicated deluge/suppressant system has been installed in the bin store only

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

Nearest Public Hydrant
A public fire hydrant is located directly outside the building.
Positioned adjacent to the front elevation, near the main entrance.
Considered easily accessible to fire and rescue services.
Visibility and markings were confirmed as clear during the assessment.

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

Good standard of signs was found for wayfinding, fire door, floor level and advisory notices

Property Type

Apartment Block, Residential Purpose-built

Building Era / Age

Known Build Date

Known Build Date

1965

Guidance Applicable At Time Of Construction

Building Regulations 1965
Renovated to Approved Document B (fire safety) volume 1: Dwellings, 2010 edition incorporating 2013 amendments

Building Height

Overall Building Height Approximately 36m
Highest Occupied Floor Level 33m
(calculated at 3m per floor as per PAS 9980-2022 section 3.1.22)

Approx Floor Area Per Floor

The approximate footprint of Lancaster is 600m2

Number of Storeys (Ground and above)

11

Number of Basement Levels

There is a lower ground floor level which leads to a rear car park

Number of Flats

Lancaster caters for 117 self contained flats

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 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)

Cement board with render finish over mineral wool insulation, terracotta tiles over mineral wool insulation, HPL over glasswool insulation.

Electronic Entrance System

Yes

Carpark

External/Outdoor Carpark

Employees

None

Residents

Yes

Approx number of Residents

234

Residents (Extended)

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

Visitors

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. 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

The building is provided with two escape stairs

Number Of Final Exits

The building is provided with four individual escape exits

External Means Of Escape

None Present

Types Of Lifts Installed

Passenger + Fireman's Control

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.

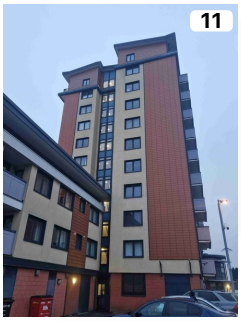
Current Evacuation Strategy for the property considered appropriate?

Yes

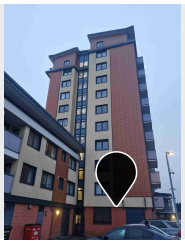
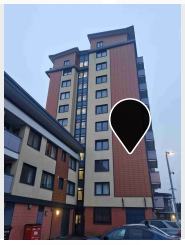
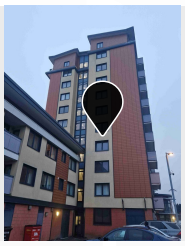
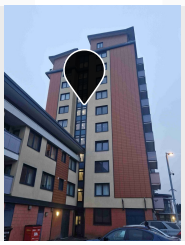
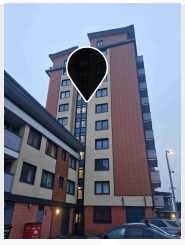
Aerial Perspective: Lancaster House

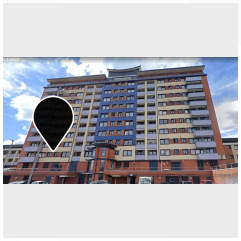
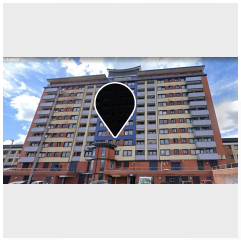
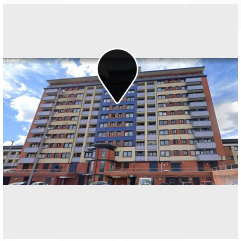
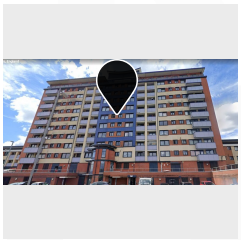
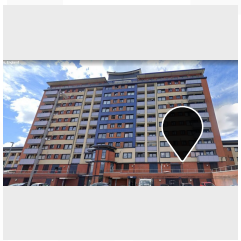
Aerial image of the building and surrounding area

Elevations

Photo	Name	No. of Storeys
	East Elevation	11 Storeys
	South Elevation	12 Storeys
	West Elevation	11 Storeys

Inspections

Elevation Location	Inspection	Elements
	**Inspection: GMTNJF** South Elevation Compartment Floor	• External Surface Material (Render) • Insulation (Mineral Wool Insulation) • Substrate (Original brickwork)
	**Inspection: J766CE** South Elevation Compartment Floor	• External Surface Material (Terracotta Tile) • Framework (Aluminium L/T Rail) • Cavity • Insulation (Mineral Wool Insulation) • Substrate (Original brickwork)
	**Inspection: QM6QF9** South Elevation Compartment Floor	• External Surface Material (Render) • Insulation (Mineral Wool Insulation) • Substrate (Original brickwork)
	**Inspection: 2J1W1C** South Elevation Compartment Floor	• Framework (Aluminium) • Infill • Substrate (Original brickwork) • Internal Lining
	**Inspection: PQP523** South Elevation Compartment Floor and Vertical Compartment Junction	• Framework (Aluminium) • Infill • Substrate (Original brickwork) • Internal Lining

Elevation Location	Inspection	Elements
	**Inspection: I1SIWP** East Elevation Compartment Floor and Vertical Compartment Junction	• External Surface Material (Rendered Cement Board) • Framework (Timber Batten) • Insulation (Glass Wool) • Substrate (Original brickwork)
	**Inspection: YM8IH6** East Elevation Compartment Floor and Vertical Compartment Junction	• External Surface Material (Terracotta Tile) • Framework (Aluminium L/T Rail) • Cavity • Insulation (Mineral Wool Insulation) • Substrate (Original brickwork)
	**Inspection: CPD5K5** East Elevation Compartment Floor and Vertical Compartment Junction	• External Surface Material (Terracotta Tile) • Framework (Aluminium L/T Rail) • Cavity • Insulation (Mineral Wool Insulation) • Substrate (Original brickwork)
	**Inspection: GDD9AZ** East Elevation Compartment Floor and Vertical Compartment Junction	• External Surface Material (HPL) • Framework (Timber Batten) • Cavity • Insulation (Mineral Wool Insulation) • Substrate (Original brickwork)
	**Inspection: 4ST7PZ** East Elevation Compartment Floor and Vertical Compartment Junction	• External Surface Material (Render) • Insulation (Mineral Wool Insulation) • Substrate (Original brickwork)

Inspection: GMTNJF

Elevation • Location
South Elevation • Compartment Floor

Name/Summary

Wall Type 1 - Render over mineral wool

Build-Up

3 Elements	Thickness/Depth	Material	Photo Ref.	Rating (BS EN13501)
External Surface Material	6mm	Render		A2 - Limited Combustibility
Insulation	100mm	Mineral Wool Insulation		A1 - Non-Combustible
Substrate	102mm	Original brickwork		A1 - Non-Combustible

Cavity Barriers

No external cavity

Inspection Photos

Inspection: J766CE

Elevation • Location
South Elevation • Compartment Floor

Name/Summary

Wall Type 2 - Terracotta over mineral wool

Build-Up

5 Elements	Thickness/Depth	Material	Photo Ref.	Rating (BS EN13501)
External Surface Material	15mm	Terracotta Tile		A1 - Non-Combustible
Framework	35mm	Aluminium L/T Rail		A2 - Limited Combustibility
Cavity	30mm			
Insulation	100mm	Mineral Wool Insulation		A1 - Non-Combustible
Substrate	102mm	Original brickwork		A1 - Non-Combustible

Cavity Barriers

No cavity barrier identified at this inspection location

Inspection Photos

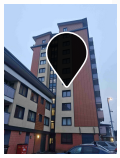

15


16


17


18

Inspection: QM6QF9



Elevation • Location
South Elevation • Compartment Floor

Name/Summary

Wall Type 1 - Render over mineral wool

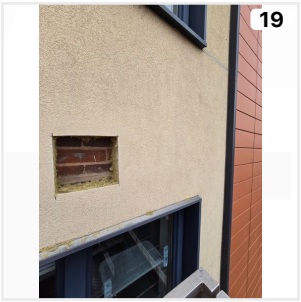
Build-Up

3 Elements	Thickness/Depth	Material	Photo Ref.	Rating (BS EN13501)
External Surface Material	6mm	Render		A2 - Limited Combustibility
Insulation	100mm	Mineral Wool Insulation		A1 - Non-Combustible
Substrate	102mm	Original brickwork		A1 - Non-Combustible

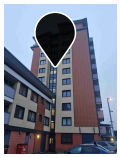
Cavity Barriers

No external cavity

Inspection Photos



Inspection: 2J1W1C



Elevation • Location
South Elevation • Compartment Floor

Name/Summary

Wall Type 3 - Curtain wall

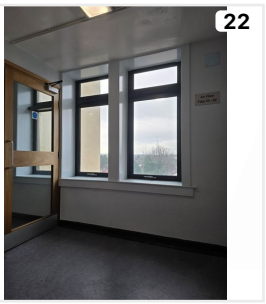
Description

The curtain wall frame has been installed over original brickwork and finished internally with sealed window ledges and plaster, it was not possible to remove external spandrel panels.

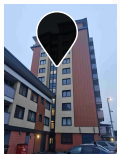
Build-Up

4 Elements	Thickness/Depth	Material	Photo Ref.	Rating (BS EN13501)
Framework		Aluminium		A2 - Limited Combustibility
Infill				A2 - Limited Combustibility
Glazing				
Substrate	300mm	Original brickwork	22, 23	A1 - Non-Combustible
Internal Lining		Material Brand: Plasterboard		A2 - Limited Combustibility

Build-up Photos



Inspection: PQP523



Elevation • Location
South Elevation • Compartment Floor and Vertical Compartment Junction

Name/Summary

Wall Type 3 - Curtain wall

Description

The curtain wall frame has been installed over original brickwork and finished internally with sealed window ledges and plaster, it was not possible to remove external spandrel panels.

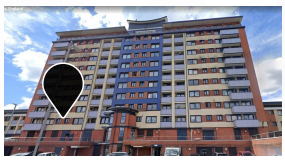
Build-Up

4 Elements	Thickness/Depth	Material	Photo Ref.	Rating (BS EN13501)
Framework		Aluminium		A2 - Limited Combustibility
Infill				A2 - Limited Combustibility
Glazing				
Substrate	300mm	Original brickwork		A1 - Non-Combustible
Internal Lining		Material Brand: Plasterboard		A2 - Limited Combustibility

Inspection Photos

Inspection: I1SIWP

Elevation • Location
East Elevation • Compartment Floor and Vertical Compartment Junction



Name/Summary

Wall Type 4 - Rendered cement board over glass wool

Description

No external cavity. timber frame

Build-Up

4 Elements	Thickness/Depth	Material	Photo Ref.	Rating (BS EN13501)
External Surface Material	9mm	Rendered Cement Board		A2 - Limited Combustibility
Framework	90mm	Timber Batten		D - Highly Combustible
2x 45mm Timber battens				
Insulation	100mm	Glass Wool		A2 - Limited Combustibility
Substrate	102mm	Original brickwork		A1 - Non-Combustible

Cavity Barriers

No external cavity

Floor Slab

Backing Wall Sits On The Floor Slab

Inspection Photos

27

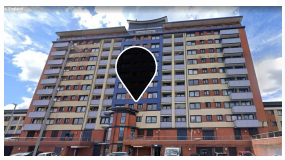
28

29

30

31

Inspection: YM8IH6



Elevation • Location
East Elevation • Compartment Floor and Vertical Compartment Junction

Name/Summary

Wall Type 2 - Terracotta over mineral wool

Build-Up

5 Elements	Thickness/Depth	Material	Photo Ref.	Rating (BS EN13501)
External Surface Material	15mm	Terracotta Tile		A1 - Non-Combustible
Framework	35mm	Aluminium L/T Rail		A2 - Limited Combustibility
Cavity	30mm			
Insulation	100mm	Mineral Wool Insulation		A1 - Non-Combustible
Substrate	102mm	Original brickwork		A1 - Non-Combustible

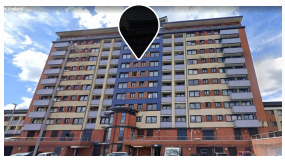
Cavity Barriers

No cavity barrier identified at this inspection location

Inspection Photos

Inspection: CPD5K5

Elevation • Location
East Elevation • Compartment Floor and Vertical Compartment Junction



Name/Summary

Wall Type 2 - Terracotta over mineral wool

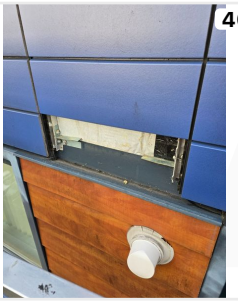
Build-Up

5 Elements	Thickness/Depth	Material	Photo Ref.	Rating (BS EN13501)
External Surface Material	15mm	Terracotta Tile		A1 - Non-Combustible
Framework	35mm	Aluminium L/T Rail		A2 - Limited Combustibility
Cavity	30mm			
Insulation	100mm	Mineral Wool Insulation		A1 - Non-Combustible
Substrate	102mm	Original brickwork		A1 - Non-Combustible

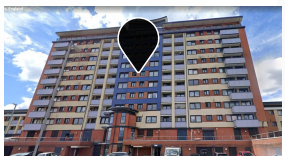
Cavity Barriers

No cavity barrier identified at this inspection location

Inspection Photos



Inspection: GDD9AZ



Elevation • Location
East Elevation • Compartment Floor and Vertical Compartment Junction

Name/Summary

Wall Type 3 - HPL

Build-Up

5 Elements	Thickness/Depth	Material	Photo Ref.	Rating (BS EN13501)
External Surface Material	9mm	HPL Material Brand: CEP Claddings Ltd high pressure laminate panels class B,s2,d0 (As per FRA)		B - Combustible
Framework	45mm	Timber Batten		D - Highly Combustible
Cavity	45mm			
Insulation	100mm	Mineral Wool Insulation		A1 - Non-Combustible
Substrate	102mm	Original brickwork		A1 - Non-Combustible

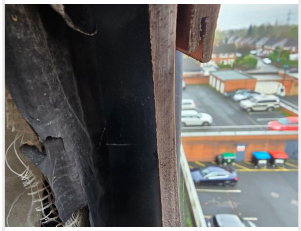
Cavity Barriers

No cavity barrier identified at this inspection location

Inspection Photos

42

43



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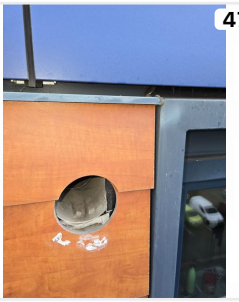
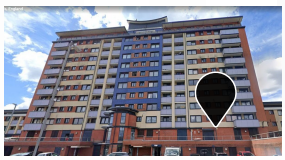


Inspection: 4ST7PZ



Elevation • Location
East Elevation • Compartment Floor and Vertical Compartment Junction

Name/Summary

Wall Type 1 - Render over mineral wool

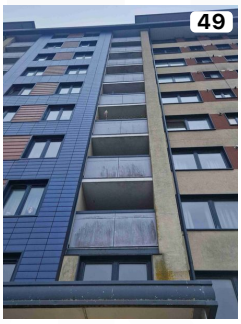
Build-Up

3 Elements	Thickness/Depth	Material	Photo Ref.	Rating (BS EN13501)
External Surface Material	6mm	Render		A2 - Limited Combustibility
Insulation	100mm	Mineral Wool Insulation		A1 - Non-Combustible
Substrate	102mm	Original brickwork		A1 - Non-Combustible

Cavity Barriers

No external cavity

Attachments & Balconies

Photo	Attachment
	**Cantilever Balcony (KU7X3S)** Configuration: Stacked Size: Private balcony spanning only a single compartment
	**Inset Balcony (NYVKYB)** Configuration: Stacked Size: Private balcony spanning only a single compartment
	**Brise Soleil (JD4G5D)** Size: Spans multiple compartments

Attachment: Cantilever Balcony

Attachment Reference
KU7X3S

Details

Configuration

Stacked

Size

Private balcony spanning only a single compartment

Framework/Structure

Reinforced concrete framework extension of the floor slab

Decking & Supports

Concrete

Handrail

Steel

Balustrade

Marley Eternit Cement Board (as per FRA)

Soffit

Concrete

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.

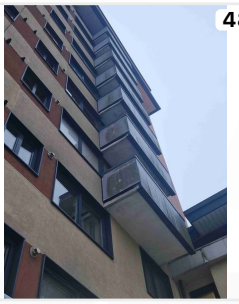
Fire Engineer Comments

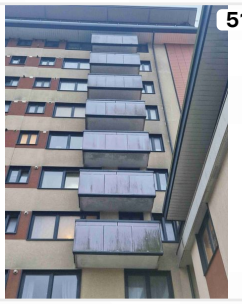
These cantilever balconies are aligned in a vertically stacked configuration. They extend from the 1st floor to the 9th floor on the front and rear elevations of the building. They are formed as an extension of the building's concrete floor slab, which provides a non-combustible soffit that will act to delay or prevent vertical fire spread between balconies.

No combustible decking was identified; however, there is a risk that occupants have individually decorated their balconies with materials that may not be of limited combustibility. A fire from, say, a barbecue, could not be totally discounted but was considered to be a remote possibility;

The face of the balcony was formed of Marley Eternit cement board (as detailed within the building's FRA). This product is detailed as achieving a Euroclass A2 rating, and as such, it would not be expected to support or contribute to fire spread across the external surface of the building.

Photos





Attachment: Inset Balcony

Attachment Reference
NYVKYB

Details

Configuration

Stacked

Size

Private balcony spanning only a single compartment

Framework/Structure

Reinforced concrete framework extension of the floor slab

Decking & Supports

Concrete

Handrail

Steel

Balustrade

Marley Eternit Cement Board (as per FRA)

Soffit

Concrete

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);
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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.

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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.

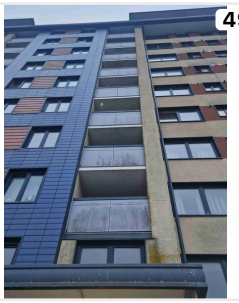
Fire Engineer Comments

These inset balconies are aligned in a vertically stacked configuration. They extend from the 1st floor to the 9th floor on the front and rear elevations of the building. They are formed as part of the building's concrete floor slab, which provides a non-combustible soffit that will act to delay or prevent vertical fire spread between balconies.

No combustible decking was identified; however, there is a risk that occupants have individually decorated their balconies with materials that may not be of limited combustibility. A fire from, say, a barbecue, could not be totally discounted but was considered to be a remote possibility;

The face of the balcony was formed of Marley Eternit cement board (as detailed within the building's FRA). This product is detailed as achieving a Euroclass A2 rating, and as such, it would not be expected to support or contribute to fire spread across the external surface of the building.

Photos



Attachment: Brise Soleil

Attachment Reference
JD4G5D

Details

Size

Spans multiple compartments

Framework/Structure

Steel

Fire Engineer Comments

This brise soleil is present on the ground floor above the commercial units. It is constructed of non-combustible materials and as such it is anticipated that its contribution to fire spread across the surface of the building would be minimal.

Photos

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External Windows

Photo	External Window
	Top, Mid, Side Hung Casements (PCGT8Y)

External Window: Top, Mid, Side Hung Casements

External Window Reference
PCGT8Y

Details

Surface Material

Aluminium

Frame Material

Timber

Infill / Panel Material

Glazing

Fire Engineer Comments

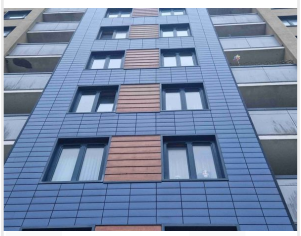
The window is composite in construction that incorporates an aluminium surface finish and a timber frame. The timber window frame exceeds 38mm in thickness, which may provide a level of fire resistance sufficient to delay the spread of fire originating internally, allowing time for external intervention.

This fire resistance can help to contain fire within the cavity for a limited period. The timber framing also plays a crucial role in sealing the cavity, thereby restricting the free flow of air. This limitation reduces the potential for fire spread and slows the growth of the fire within the cavity, contributing to improved fire safety performance.

The window infill has been identified as laminated glass, which consists of layers of glass bonded with a polymer interlayer, typically PVB or EVA. While these interlayers are combustible, they are generally slow to ignite. Under prolonged exposure to elevated temperatures or direct flame, the interlayers may degrade, and the glass may crack or shatter due to thermal stress.

Photos

53



External Doors

Photo	External Door
	**Single Leaf Entrance Doors (4NQ3MR)**

External Door: Single Leaf Entrance Doors

External Door Reference
4NQ3MR

Details

Surface Material

Aluminium

Frame Material

Aluminium

Infill / Panel Material

Glazing

Fire Engineer Comments

Aluminium is a non-combustible material and does not contribute to the spread of fire. However, its relatively low melting point (approximately 660°C) and high thermal conductivity mean that it may deform or fail when exposed to high levels of heat.

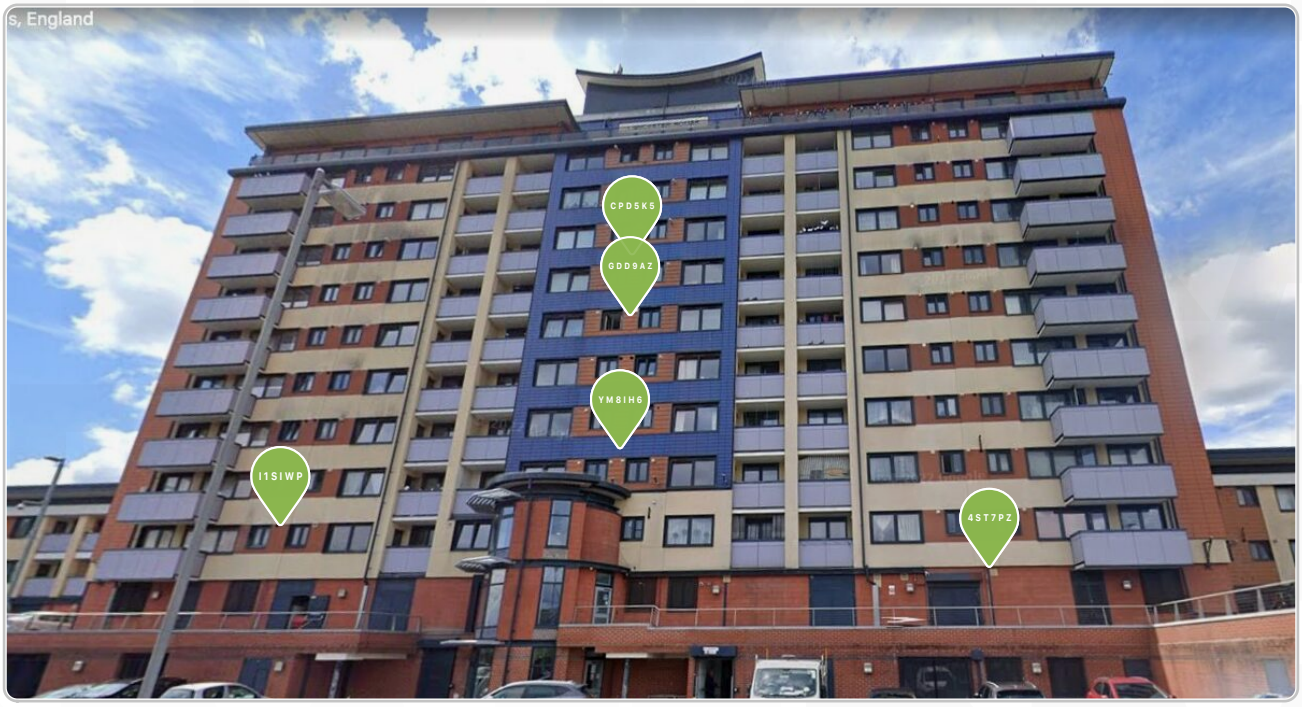
The door infill has been identified as laminated glass, which consists of layers of glass bonded with a polymer interlayer, typically PVB or EVA. While these interlayers are combustible, they are generally slow to ignite. Under prolonged exposure to elevated temperatures or direct flame, the interlayers may degrade, and the glass may crack or shatter due to thermal stress.

However, the aluminium door frames are likely to maintain integrity beyond flashover temperatures. This offers a temporary barrier to flame ingress within the cavity, potentially delaying fire spread and supporting occupant evacuation and external firefighting intervention.

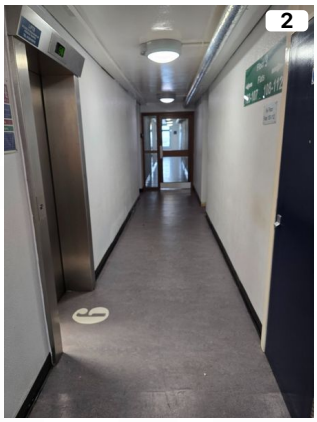
Photos

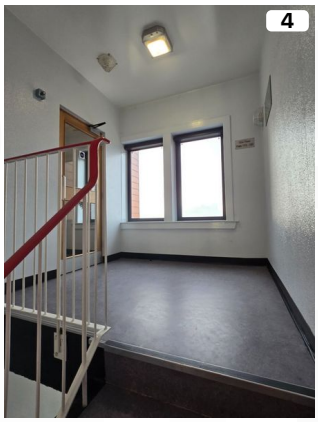
Plan: South Elevation

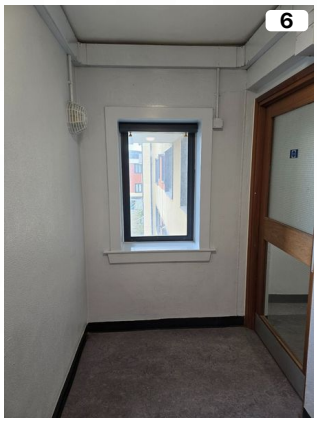
Plan: East Elevation

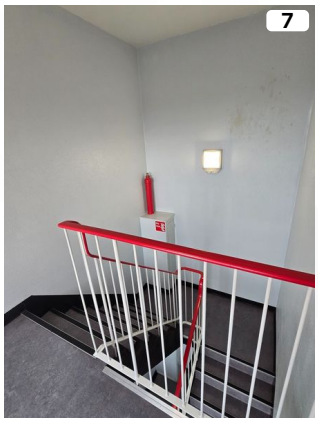


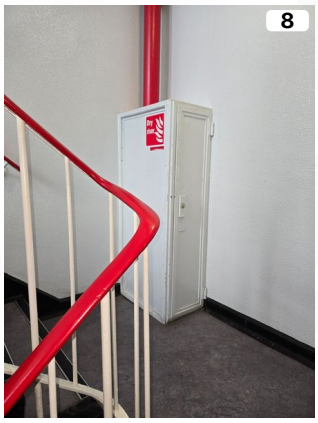
Photos

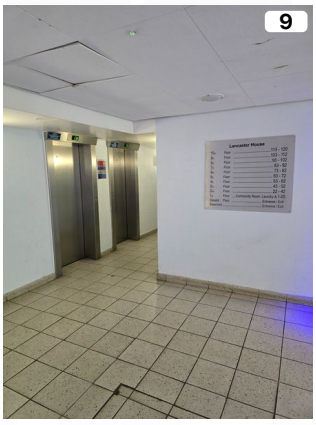


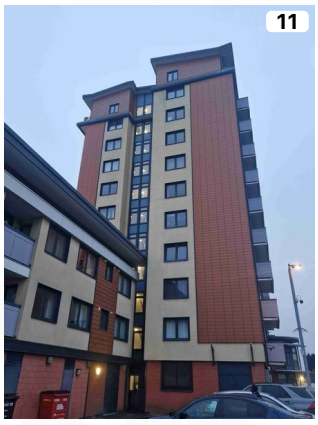












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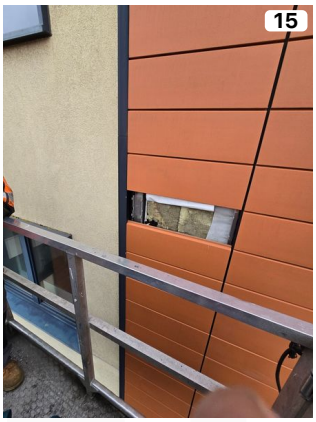
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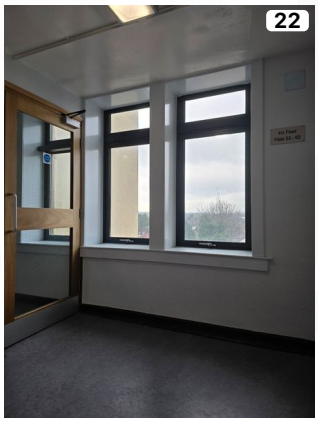
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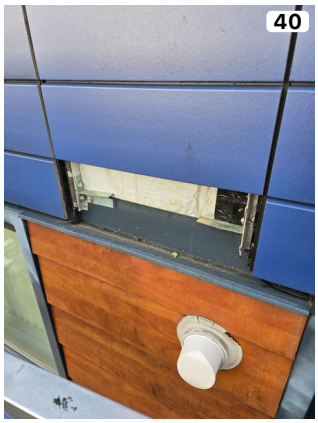

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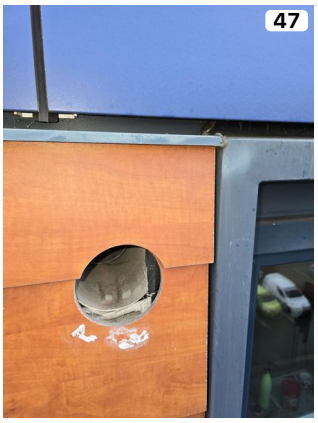

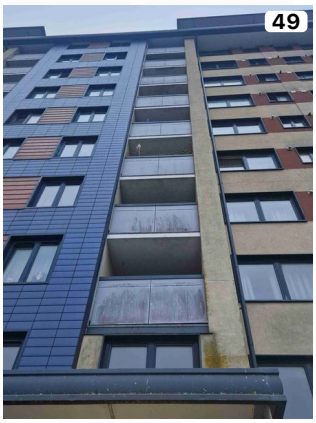

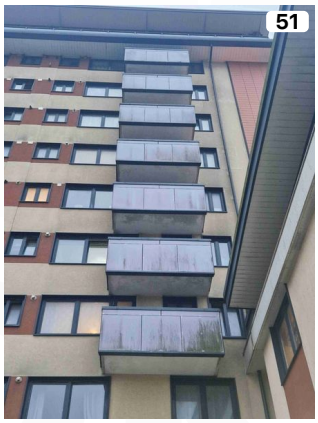

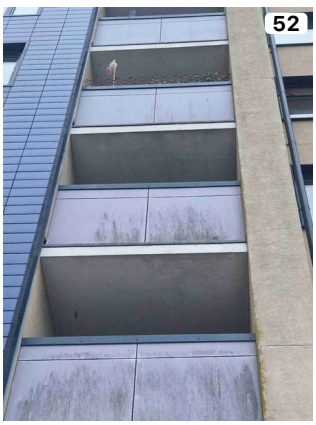

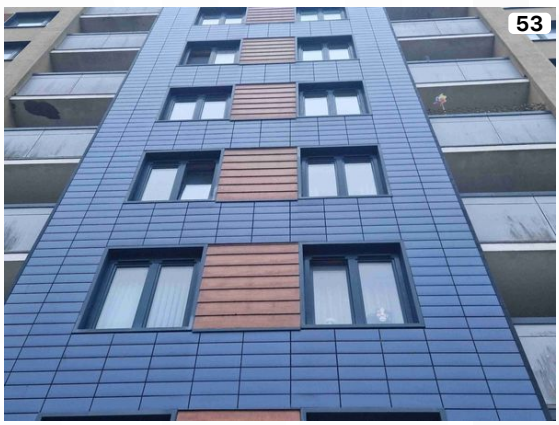

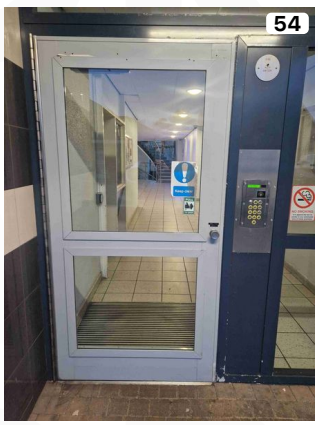

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