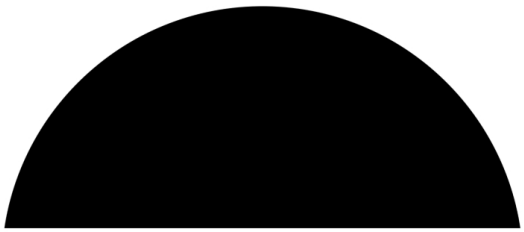
Independent Fire Engineering Review

XPS Panels In Protected Stair Enclosures

Royal Artillery Quays

Prepared by:

Thermal-Flow Consultants Ltd.



Date: September 2, 2026

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PROJECT DETAILS	
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LIST OF ABBREVIATIONS

Abbreviation	**Definition**
ADB	Approved Document B (Fire Safety)
BS	British Standard
BSI	British Standards Institution
FD30S	30-minute Fire Door incorporating Smoke Seals
FRA	Fire Risk Assessment
FRAEW	Fire Risk Appraisal of the External Walls
F.R.	Fire Resistance
NFCC	National Fire Chiefs Council
TFC	Thermal-Flow Consultants Ltd
WT3	Wall Type 3
XPS	Extruded Polystyrene Insulation

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Executive Summary

1.1 Overview

1.1.1 Thermal-Flow Consultants Ltd. was commissioned on behalf of residents of Royal Artillery Quays, to undertake an independent fire engineering review of the retained extruded polystyrene (XPS) insulation within the aluminium spandrel and infill panels of the principal stair enclosures serving the residential towers.

1.1.2 The review has been commissioned following concerns regarding the decision to retain combustible XPS insulation within parts of the stair enclosure external wall system.

1.1.3 This report provides an independent fire engineering opinion on if the continued retention of these combustible materials provides an acceptable level of life safety, when taking into account the building configuration, the function of the stair enclosure, the previous Fire Risk Appraisal of the External Walls (FRAEW), the completed remediation works, and observations made during a site inspection.

1.1.4 This report has therefore been prepared independently and represents the professional opinion of the author based upon the information available at the time of assessment.

1.2 Scope and Limitations

1.2.1 The scope of this review includes:

- Review of the original Fire Risk Appraisal of the External Walls (FRAEW) and associated technical documentation.
- Review of the remediation strategy and the rationale adopted for the partial replacement of combustible XPS-containing panels.
- Site inspection of the stair enclosures and adjacent façade construction.
- Assessment of the retained WT3 aluminium spandrel and infill panels containing XPS insulation.
- Consideration of the role of the protected stair as both the principal means of escape

and the firefighting stair.

- Review of relevant fire safety legislation, guidance and published technical information where applicable.
- Provision of an independent fire engineering opinion together with recommendations where considered appropriate.

1.2.2 No intrusive investigations, destructive opening-up works, material testing or laboratory analysis have been undertaken as part of this commission.

1.2.3 This report does not constitute a Fire Risk Appraisal of the External Walls (FRAEW) in accordance with PAS 9980, nor is it intended to replace the existing FRAEW or the statutory fire risk assessment for the building.

1.2.4 Where reference is made to previous reports, drawings, correspondence or historical information, such information has been accepted as being substantially correct unless evidence observed during the assessment indicates otherwise.

1.2.5 The opinions and conclusions presented within this report are based upon the available information, recognised fire engineering principles, current guidance where relevant, and the professional judgement of the author.

1.3 Summary of Independent Opinion

1.3.1 Having reviewed the available Fire Risk Appraisal of the External Walls (FRAEW), the proposed remediation strategy, supporting documentation, original design information, and following a site inspection of the building, it is my professional opinion that the continued retention of combustible extruded polystyrene (XPS) insulation within the remaining Wall Type 3 (WT3) aluminium spandrel and infill panels in the protected stair enclosures is not the most appropriate fire engineering solution for this development.

1.3.2 Whilst the original FRAEW has adopted a proportionate risk-based methodology in accordance with PAS 9980, I consider that the justification for retaining combustible XPS panels within the protected stair following remediation works is not sufficiently robust when the overall building configuration and life safety consequences are considered.

1.3.3 In reaching this opinion, particular consideration has been given to the fact that the HRB residential towers are served by a single protected stair which also functions as the firefighting stair. The resilience of this stair is therefore fundamental to both occupant evacuation and fire service intervention. Any increase in the likelihood of fire or smoke affecting this route has potentially significant consequences.

1.3.4 A number of features warrant consideration as part of the overall assessment, including the presence of extensive glazed elements forming part of the stair enclosure, the removal of XPS panels at some levels only (two storeys above the penthouse terrace) as part of the remediation works, and observations made during the site inspection regarding the ground floor stair arrangement. It is understood that the fire doors omitted from the ground floor stair enclosure are to be reinstated as part of the ongoing remedial works. Whilst these observations are not individually determinative, they collectively reinforce

the importance of maintaining the highest practicable level of protection to the sole means of escape route.

1.3.5 My opinion is not based solely upon the combustible nature of XPS insulation. Rather, it reflects the cumulative effect of the retained combustible material, the configuration of the protected stair enclosure, the consequences associated with loss or impairment of the only escape and firefighting route, and the engineering judgement that the residual risk is not adequately mitigated by the limited retention strategy adopted as recommended within the existing FRAEW.

1.3.6 Accordingly, it is my opinion that the remaining WT3 panels incorporating XPS insulation within the protected stair enclosure should be replaced with a suitable non-combustible construction as part of the ongoing remediation programme. In addition, the fire performance of the stair enclosure, including its glazed elements and associated compartmentation, should be reviewed to ensure that the protected stair continues to provide a robust means of escape and firefighting access throughout the life of the building.

1.4 Competence of Authors

Reviewer 1

1.4.1 This report has been prepared by Thermal-Flow Consultants Ltd, and quality assured by Dr. Patrick Okolo, CEng MIEI, MIFireE, a Chartered Engineer with a PhD in Engineering specialising in fire safety engineering and performance based modelling.

1.4.2 Dr. Okolo is the Managing Director of Thermal-Flow Consultants Ltd, he is also a Consultant at FR Consultants Ltd, and a visiting Lecturer of Engineering (Applied CFD) at Oxford Brookes University.

1.4.3 He has over 16 years of experience in fire engineering performance based applications, modelling, and compliance across fire safety, building physics, and thermal-fluid systems. Dr. Okolo has managed and delivered complex fire engineered CFD projects for residential, commercial, industrial, and high-risk buildings across the UK, Ireland, Europe, and Middle East.

1.4.4 His fire engineering work routinely involves performance-based design in accordance with BS 7974 framework, PD 7974-6, BS 9999, BS 9991, Approved Document B and relevant building regulations, including detailed analyses using validated tools such as Fire Dynamics Simulator (FDS), PyroSim and Pathfinder. He has also contributed as one of the contributors to the Smoke Control Association (SCA) Guidance on CFD Analysis for Smoke Control Design in Buildings.

1.4.5 Dr. Okolo regularly delivers specialist CFD training to Fire and Rescue Services, as well as in-house CFD teams across industry. He also supervises postgraduate research in fire safety engineering and applied fluid dynamics. His continuous professional development activities are rooted in current best practice and aligned with evolving industry standards.

Reviewer 2

1.4.6 This report has been subject to a second technical review by Adair Lewis, BSc (Hons), CEng, FIFireE, CChem, MRSC, CPhys, MInstP. Adair is a Chartered Engineer and Fellow of the Institution of Fire Engineers, with extensive professional experience in forensic fire investigation, fire-risk assessment, fire-safety management and technical fire-safety consultancy.

1.4.7 Adair's first 20 years career were spent at the Metropolitan Police Forensic Science Laboratory, including ten years as Head of the Fire Investigation Unit. His work involved investigating major fires, determining fire origin and cause, examining fire-damaged materials and providing expert evidence in criminal, civil, coroners' and magistrates' courts. Adair subsequently served as Technical Manager at the Fire Protection Association, where he undertook fire-risk assessments across a wide range of commercial, industrial and public-sector premises and prepared technical fire-safety guidance for insurers and other organisations.

1.4.8 Since 2015, Adair has worked as a fire-safety consultant, providing fire-risk assessments, fire-safety strategies, management advice and technical guidance. His experience includes reviewing intrusive investigations of façades on HRB's, advising on the need for external wall remediation and preparing EWS1 forms.

1.4.9 Adair is the author of *The Prevention and Control of Arson* and co-author of *Fire Risk Management in the Workplace*. He has written a number of Fire Protection Association publications and has served on fire-related BSI committees and groups preparing technical guidance.

1.4.10 Adair's fire investigation, façade assessment, product-certification and fire-safety experience provides the relevant competence to act as the second technical reviewer of the assessment and conclusions presented within this report.

Building Description

2.1 Building Overview

2.1.1 Royal Artillery Quays (RAQ) is a residential development located on Erebus Drive, London, comprising a number of multi-storey residential blocks constructed between 2002 and 2003. The development consists of a mixture of residential towers and apartment blocks of varying heights. This review principally relates to the taller residential towers where Wall Type 3 (WT3) aluminium spandrel and infill panels incorporating extruded polystyrene (XPS) insulation form part of the protected stair enclosure.

2.1.2 The development consists of the following buildings:

- Albert House (1–34 Albert House, SE28 0GN)
- Bendish Point (1–55 Bendish Point, SE28 0EJ)
- Cumberland House (1–57 Cumberland House, SE28 0GE)
- Granary Mansions (1–57 Granary Mansions, SE28 0GH)
- Sark Tower (1–66 Sark Tower, SE28 0GG)
- Tideslea Tower (1–66 Tideslea Tower, SE28 0GF)
- Tidlock House (1–30 Tidlock House, SE28 0GD)
- Wyatt Point (1–53 Wyatt Point, SE28 0GJ)

Means of Escape

2.1.3 Each residential tower is served by a single protected stair, which provides the principal means of escape for occupants. The protected stair also serves as the firefighting stair, providing access for fire and rescue service personnel during fire-fighting and rescue operations.

Protected Stair Enclosure

2.1.4 The protected stair is enclosed by a combination of reinforced concrete construction and curtain walling elements. The external enclosure incorporates Wall Type 3 (WT3) aluminium spandrel and infill panels, within which combustible XPS insulation has been identified.

2.1.5 The WT3 panels therefore form part of the enclosure to the protected stair rather than simply being located elsewhere on the façade. Their fire performance is consequently fundamental to maintaining the integrity of the sole means of escape and firefighting stair.

2.1.6 The protected stair enclosure incorporates extensive glazed elements forming part of the curtain wall system. During the course of this review, photographs were provided showing the glazing to be permanently marked as complying with BS 6206 Class A, confirming that the glazing is toughened safety glass. However, BS 6206 relates to impact performance and does not demonstrate fire resistance. No documentary evidence has been provided to verify the fire resistance performance of the glazed assembly, including the glazing system, framing and associated components, where these elements form part of the protected stair enclosure. Consequently, the contribution of the glazing to maintaining the fire-resisting enclosure of the protected stair has not been verified as part of this review.

2.1.7 Given that the building is served by a single protected stair, the integrity of the stair enclosure is of particular importance. Any uncertainty regarding the fire performance of the enclosing construction, including the glazed elements, should therefore be considered alongside the presence of combustible WT3 panels when assessing the overall resilience of the protected means of escape and firefighting route.

External Wall Remediation

2.1.8 Following completion of the Fire Risk Appraisal of the External Walls (FRAEW), a programme of remediation works was undertaken to address combustible materials within the external wall construction.

2.1.9 The adopted remediation strategy included replacement of selected WT3 XPS-containing panels located 2 level above the penthouse terrace levels, whilst retaining other WT3 panels incorporating XPS insulation elsewhere within the stair enclosure. The rationale for this selective replacement is discussed in later sections of this report.

Site Inspection

3.1 Observations

3.1.1 A site inspection of Royal Artillery Quays was undertaken to verify the current condition of the protected stair enclosure and to observe the remediation works that have been completed since publication of the original FRAEW.

3.1.2 The inspection comprised a visual examination of the external stair tower, the protected stair enclosure, the glazed curtain walling, the replacement wall panels and the remaining façade construction.



Figure 3.1: External view of the protected stair tower.

3.1.3 Protected Stair Enclosure The buildings are provided with a single protected stair that also serves as the firefighting stair.

3.1.4 The stair enclosure extends externally along the elevation and is enclosed by a combination of glazed curtain walling and opaque aluminium infill/spandrel panels.

3.1.5 The opaque infill panels form part of the side walls of the protected stair enclosure over multiple storeys.

3.1.6 The combination of opaque infill panels and large areas of glazing forms the principal enclosure to the protected stair over multiple storeys.



Figure 3.2: Typical landings and glazed curtain walling enclosing the protected stair.

3.1.7 Glazed Stair Enclosure The protected stair enclosure incorporates extensive glazed curtain walling extending over the full height of the stair tower.

3.1.8 No documentary evidence demonstrating the fire resistance performance of the glazing system was available during this review.

3.1.9 Consequently, the fire resistance of the glazed enclosure could not be verified.

3.1.10 Observed Remediation Works The inspection confirmed that replacement works have been undertaken to sections of the opaque façade panels adjacent to the stair enclosure.

3.1.11 Based on discussions during the inspection and the observed construction, the replacement panels are understood to comprise non-combustible construction in place of the original XPS-containing panels.

3.1.12 The completed works were consistent with the ongoing remediation programme displayed on site.



Figure 3.3: Panels and adjacent glazed curtain walling within the protected stair enclosure.

3.1.13 Summary of Site Observations The site inspection identified the following principal observations:

- The protected stair enclosure forms an external stair tower serving as the sole escape stair and firefighting stair.
- The side walls of the stair enclosure incorporate opaque façade panels that historically formed part of Wall Type WT3.
- Extensive glazed curtain walling forms a significant proportion of the protected stair enclosure.
- No documentary evidence demonstrating the fire resistance performance of the glazing was available during this review.
- Remediation works have been undertaken to replace sections of the original façade panels adjacent to the stair enclosure.
- The overall fire engineering significance of these observations is discussed in the following chapters.



Figure 3.4: Views of the protected stair and glazed enclosure.



Figure 3.5: Opaque replacement panels installed adjacent to the escape stair.



Figure 3.6: Further examples of opaque replacement panels within the protected stair enclosure.

Engineering Review

4.1 Assessment of the Protected Stair

4.1.1 Design Intent The building incorporates a single protected stair intended to provide the primary means of escape for residents and fire-fighting access in accordance with the Building Regulations applicable at the time of construction. The protected stair is required to remain substantially free from smoke, heat and fire for the duration necessary to facilitate occupant evacuation and fire service intervention.

4.1.2 Applicable Regulatory Requirements The building was designed under the Building Regulations in force at the time of construction together with Approved Document B (2000 Edition) and BS 5588-5:1991. Both documents require protected stairways and fire-fighting shafts to achieve an appropriate level of fire separation from adjoining accommodation through fire-resisting construction, protected openings and self-closing fire doors.

4.1.3 Observed Construction The site inspection identified that the protected stair enclosure incorporates extensive glazed curtain walling extending over the full height of the stair enclosure. The glazing forms a substantial proportion of the enclosure separating the stair from the external environment.

During the inspection, no documentary evidence was available demonstrating that the glazed curtain wall system achieves the required period of fire resistance. Similarly, no evidence was available confirming that the framing system, glazing units, seals and interfaces have been tested or assessed as a complete fire-resisting assembly.

In addition, opaque replacement panels have recently been installed immediately adjacent to the protected stair enclosure as part of the ongoing façade remediation works. These panels form portions of the side walls enclosing the stair and therefore contribute directly to the fire-resisting enclosure protecting the escape route.

4.1.4 Fire Engineering Assessment The protected stair represents the only means of escape for occupants of the tower and is also intended to facilitate firefighting operations. Consequently, maintaining the integrity of the stair enclosure throughout a fire incident is fundamental to the overall fire safety strategy of the building.

4.1.5 Where extensive glazing forms part of the enclosure to a protected stair, confidence in the performance of the enclosure relies upon suitable evidence demonstrating that the

glazing, framing system, interfaces and supporting construction collectively achieve the required fire resistance.

4.1.6 In the absence of appropriate certification or test evidence, it has not been possible to verify the fire resistance performance of the glazed assembly where it forms part of the protected stair enclosure.

4.1.7 This observation should not be interpreted as indicating that the glazing is inadequate or non-compliant. Rather, it reflects that the information made available for this review is insufficient to confirm the fire-resisting performance of the glazing system, including the glazing, framing and associated components.

4.1.8 Given that the building relies upon a single protected stair for both occupant evacuation and firefighter access, any uncertainty regarding the fire performance of the stair enclosure assumes greater significance than would typically be the case in a building provided with multiple independent escape stairs.

4.1.9 This uncertainty should therefore be considered alongside the retained combustible Wall Type 3 (WT3) panels incorporating XPS insulation when assessing the overall resilience of the protected stair enclosure.

4.2 Review of the Existing FRAEW

4.2.1 The original Fire Risk Appraisal of the External Walls (FRAEW), prepared by Urban Change in July 2022, has been reviewed as part of this assessment.

4.2.2 The FRAEW was undertaken in accordance with PAS 9980 and adopted a holistic, risk-based methodology, considering the fire performance of the external wall system together with the building configuration, occupancy characteristics, and existing fire safety measures.

4.2.3 The purpose of this review is not to reassess the methodology adopted by the original FRAEW, but rather to consider if the conclusions relating to the retention of combustible Wall Type 3 (WT3) aluminium spandrel and infill panels incorporating XPS insulation remain appropriate in light of the available evidence and the observations made during the site inspection.

4.2.4 Summary of FRAEW Findings: The FRAEW identified combustible materials within the external wall construction and concluded that remediation works were required to reduce the overall fire risk associated with the façade.

4.2.5 With respect to the WT3 aluminium spandrel and infill panels incorporating XPS insulation, the FRAEW recommended that, as a minimum, the panels over a two-storey height immediately above the southern roof terraces be replaced with panels constructed from materials achieving Class A2-s1,d0 (or better) in accordance with BS EN 13501-1. The FRAEW did not recommend wholesale replacement of all WT3 panels.

4.2.6 In accordance with this recommendation, the remediation works have included replacement of the WT3 panels above the penthouse terrace levels, whilst the remaining WT3 panels have been retained within the protected stair enclosure. This retained arrangement forms the basis of the independent fire engineering assessment presented in

this report.

4.2.7 Basis of the Original Recommendation: The rationale presented within the FRAEW for retaining the remaining WT3 panels appears to be based upon a number of factors, including:

- the relatively limited extent of the remaining combustible materials;
- the anticipated low probability of ignition in the retained locations;
- the protected nature of the stair enclosure;
- the application of proportionality in accordance with PAS 9980.

4.2.8 The FRAEW therefore concluded that replacement of all WT3 panels was not necessary to achieve an acceptable level of life safety.

4.2.9 Therefore, the original FRAEW represents a proportionate assessment undertaken in accordance with the principles of PAS 9980.

4.2.10 However, the recommendations relating to the retained WT3 panels are necessarily dependent upon the assumptions made regarding the likelihood of ignition, the expected performance of the stair enclosure, and the continued integrity of the protected means of escape.

4.2.11 These assumptions are reviewed further in the following sections of this report, taking account of the observations made during the site inspection and the wider fire engineering implications associated with the protected stair enclosure.

4.3 Fire Performance of XPS

4.3.1 Extruded polystyrene (XPS) is a combustible thermoplastic insulation material that is capable of contributing to fire growth when exposed to sufficient thermal insult.

4.3.2 The fire performance of XPS is well understood, and its behaviour under fire conditions differs significantly from that of non-combustible mineral-based insulation materials. Consequently, its continued presence within external wall construction requires careful consideration within the context of the overall building fire strategy.

4.3.3 The purpose of this review is not to reassess the inherent combustibility of XPS, which is already recognised within the FRAEW, but rather to consider whether its continued retention within the protected stair enclosure remains appropriate.

4.3.4 Fire Engineering Assessment

4.3.5 In fire engineering, both the probability of fire occurrence and the consequences of fire development should be considered when assessing overall risk.

4.3.6 Whilst the FRAEW places considerable emphasis on the relatively low probability of ignition adjacent to the retained WT3 panels, it is considered that greater weight should also be given to the consequences of compromise of the protected stair enclosure.

4.3.7 This consideration is particularly important where the building is reliant upon a single protected stair and where uncertainty remains regarding the fire performance of

other elements forming the stair enclosure, including the glazed curtain walling discussed in the previous chapter.

4.3.8 Accordingly, the continued retention of combustible WT3 panels should not be considered in isolation, but rather as one element contributing to the overall resilience of the protected stair enclosure.

Overall Fire Engineering Assessment

5.0.1 During the course of this review, it has been suggested that replacement of the remaining WT3 panels incorporating XPS insulation may not be practicable because non-combustible replacement panels would impose additional structural loading on the protected stair enclosure. However, no structural assessment, calculations or other technical evidence have been made available to substantiate this assertion.

5.0.2 If structural limitations are considered to preclude direct replacement of the existing WT3 panels, this should be demonstrated through a structural assessment undertaken by a suitably qualified structural engineer. Such an assessment should consider the capacity of the existing stair structure, the loading associated with any proposed replacement system, and whether modifications or strengthening works would be necessary.

5.0.3 Where it is demonstrated that direct replacement with an equivalent non-combustible panel system is not reasonably practicable, alternative engineered solutions should be explored. These may include the use of lightweight non-combustible panel systems, local structural strengthening, or other measures capable of achieving an equivalent or improved level of fire safety whilst maintaining the structural integrity of the stair enclosure.

5.0.4 In the absence of supporting structural evidence, it has not been possible as part of this review to conclude that structural considerations preclude replacement of the remaining WT3 panels.

5.0.5 Our overall fire engineering assessment will consider cumulative effect of observations made during the site inspection, available evidence, together with the findings of the original Fire Risk Appraisal of the External Walls (FRAEW).

5.0.6 In summary, this the fire engineering assessment will be based upon the interaction of multiple risk factors. Whilst individual deficiencies or uncertainties may not independently justify further remediation, their combined effect may materially influence the overall level of life safety provided in the building.

The Protected Stair

5.0.7 The protected stair is the most critical passive fire safety feature within the building.

5.0.8 Unlike buildings provided with multiple escape stairs, Royal Artillery Quays buildings rely upon a single protected stair for both occupant evacuation and firefighting access. The continued availability of this stair throughout a fire incident is therefore fundamental to the fire safety strategy of the building.

5.0.9 Any factor that has the potential to compromise the integrity of the protected stair should therefore be assessed with particular care.

Cumulative Risk Factors

The review has identified a number of building-specific factors that are considered relevant to the assessment of the protected stair enclosure.

- The protected stair is enclosed by extensive glazed curtain walling.
- The fire resistance performance of the glazing has not been verified from the information made available.
- Wall Type 3 aluminium spandrel and infill panels incorporating combustible XPS insulation remain within sections of the stair enclosure.
- The original remediation strategy involved only partial replacement of the WT3 panels.
- The building relies upon a single protected stair for both evacuation and firefighting operations.

5.0.10 Individually, these observations may not necessarily demonstrate that the protected stair enclosure fails to satisfy the functional requirements of the Building Regulations.

5.0.11 However, when considered collectively, they reduce confidence in the overall robustness and resilience of the sole protected stair enclosure.

Engineering Judgement & Professional Opinion

5.0.12 The FRAEW appropriately adopts a proportionate methodology in accordance with PAS 9980.

5.0.13 However, the acceptability of retaining combustible materials should always be considered in the context of the consequences should those materials become involved in a fire.

5.0.14 In our professional opinion, the consequences associated with compromise of the sole protected stair are sufficiently significant that a conservative approach to the enclosure of the stair is justified.

5.0.15 This opinion is not based solely upon the presence of combustible XPS insulation, nor solely upon the uncertainty regarding the fire performance of the glazing.

5.0.16 Rather, it reflects the cumulative interaction between these factors together with the critical life safety function performed by the protected stair.

5.0.17 Therefore, having reviewed the available documentation and undertaken a site inspection, it is my professional opinion that the retained WT3 aluminium spandrel and infill panels incorporating XPS insulation should not remain as part of the enclosure to the sole protected stair.

5.0.18 Furthermore, documentary evidence demonstrating the fire resistance performance of the glazed stair enclosure should be obtained.

5.0.19 In the absence of such evidence, further assessment should be undertaken to verify that the protected stair achieves the level of fire resistance necessary to fulfil its intended function throughout the duration of a fire incident.

Recommendations

6.0.1 Based upon the review of the available documentation, the site inspection and the fire engineering assessment presented within this report, the following recommendations are made.

6.0.2 Recommendation 1 – Remaining WT3 XPS Panels: It is recommended that the remaining Wall Type 3 (WT3) aluminium spandrel and infill panels incorporating extruded polystyrene (XPS) insulation, which form part of the protected stair enclosure, are replaced with a suitable non-combustible construction.

6.0.3 This recommendation is based upon the critical life safety function of the protected stair and the cumulative fire engineering considerations discussed within this report, rather than solely upon the combustibility of the XPS insulation.

6.0.4 Recommendation 2 – Fire Performance of the Glazed Stair Enclosure: Documentary evidence should be obtained to demonstrate the fire resistance performance of the glazed elements forming part of the protected stair enclosure.

6.0.5 Where such evidence cannot be produced, a detailed technical assessment should be undertaken to establish whether the glazing, framing system and associated interfaces provide the level of fire resistance required to maintain the integrity of the protected stair throughout the design fire scenario.

6.0.6 Recommendation 3 – Review of the Protected Stair Enclosure: A comprehensive review of the protected stair enclosure should be undertaken to verify that all elements contributing to its fire-resisting function remain consistent with the original fire strategy, or with any subsequently approved design changes and remediation works.

6.0.7 This review should include confirmation that all fire-resisting construction, doors, glazing, service penetrations and other components forming the enclosure have been installed, maintained and, where applicable, appropriately certified to achieve the required standard of fire resistance.

6.0.8 Recommendation 4 – Verification of Passive Fire Protection: Following completion of the external wall remediation works, a final inspection should be undertaken to verify that the protected stair enclosure, associated fire stopping and compartmentation have been completed in accordance with the approved design and provide a continuous fire-resisting enclosure.

6.0.9 Recommendation 5 – Update of Fire Safety Documentation: Following completion of any additional remedial works, the Fire Risk Assessment and associated building fire safety documentation should be reviewed and updated where necessary to reflect the completed construction and any changes to the protected stair enclosure.

Conclusion

7.0.1 This independent fire engineering review has been undertaken of the retained Wall Type 3 (WT3) aluminium spandrel and infill panels incorporating XPS insulation forming part of the protected stair enclosure at Royal Artillery Quays.

7.0.2 Whilst the original FRAEW adopted an appropriate risk-based methodology in accordance with PAS 9980, this review has identified a number of building-specific factors, including the single protected stair arrangement, the retained combustible XPS insulation, and the absence of verified fire performance information for the glazed stair enclosure.

7.0.3 In my professional opinion, these factors, when considered collectively, justify the replacement of the remaining WT3 XPS-containing panels and verification of the fire resistance performance of the glazed stair enclosure to provide greater confidence in the resilience of the sole means of escape and firefighting stair.

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