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Fire Risk Appraisal of External Walls

Queens Court, Holdbrook South, Waltham Cross Hertfordshire EN8 7SN.

B3Living Ltd.

Report Issued: February 2026

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Revision History

Issue Number	Date	Comments	Prepared By	Reviewed By
1.0	11/02/2026	Final Issue	Ivan Moore BSC MRICS IMaPS MIFSM	John Williams GRSC DipNEBOSH CChem MRSC CMIOSH MIFireE

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

Document Author

Name	Qualification	Professional Registration
Ivan Moore	BSc	MRICS IMaPS MIFSM

Ivan is a Chartered Building Surveyor (MRICS) with over 30 years' experience in the consultancy sector. Since becoming Chartered in 1995 Ivan has worked on numerous office, education, commercial and telephone exchanges and has acquired a sound understanding of multiple building types and modern methods of construction.

Ivan has extensive experience in undertaking fire door and fire compartmentation projects, including site investigations works, specifying remedial works and project management of the schemes.

Ivan has successfully completed the RICS EWS training programme assessment No. 1 and has passed the IFSM accredited Fire Risk Assessor course. Ivan is also a member of The Association for Project Safety and The Institute of Fire Safety Managers.

Over the past five years, Ivan has worked explicitly on external wall projects. Starting from detail/drawing reviews, construction monitoring for EWS1 appointments and external wall intrusive surveys following the PAS 9980 guidance for FRAEW appraisals which was released in January 2022. Ivan has written and peer-reviewed numerous PAS 9980 FRAEW reports.

I confirm that I have -

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

Document Reviewer

Name	Qualification	Professional Registration
John Williams	GRSC (Hons). NEBOSH Diploma. RICS External Wall Assessor. Cert. Fire Engineering Science.	CChem MRSC CMIOSH MIFireE
John has a wide breadth of fire safety knowledge having worked within the Fire Safety Industry for over 21 years with experience in High Hazard Industry, Industrial Firefighting and Fire Safety Consultancy. During this time, John has attained Chartered Status with the Institute of Occupational Safety and Health and with the Royal Society of Chemistry and also holds Member Status with the Institution of Fire Engineers. Over the past 3 years John has peer-reviewed numerous PAS 9980 FRAEW Reports, conducted site surveys following the PAS methodology, written FRAEW Reports and has a good understanding of construction methods and building types. John has successfully completed the RICS Level 6 EWS Assessment Programme.		

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Executive Summary

Oakleaf Surveying Ltd have carried out a PAS 9980[1] Fire Risk Appraisal of External Walls (FRAEW) for the following property.

Property assessed:

Table 1: Property identity details.

Client	B3Living Ltd
Client address	Turnford Place. Part First Floor Building A, Great Cambridge Road, Cheshunt EN10 6NH
Assessed property name	Queens Court
Property address	294-308 Queens Court. Holdbrook South, Waltham Cross, Hertfordshire EN8 7SN

Primary building characteristics:

Table 2: Primary building characteristics.

Building height (*m, to highest occupied floor level above lowest adjacent ground level*)	11.20m (based on a measured storey height of 2.80m)
No. Storeys	5 (Ground + 4)
Year of construction	1973 (advised by resident during survey.) Thermally upgraded and construction of

[1] PAS 9980 *Fire risk appraisal of external wall construction and cladding of existing blocks of flats - Code of Practice* provides a structured approach and methodology for the fire risk appraisal of external wall construction and cladding of multi-storey and multi-occupied residential buildings.

	ground floor flats in 1995.
Number external wall types	7
Number external wall types containing significant quantities of combustible materials	4
Attachments containing combustible materials	Access balcony walkways located along the north elevation at first, second and third floor levels.

The objective of this appraisal is to provide a professional opinion on the level of fire risk posed by the external wall construction only, to the occupants of the building from a fire spreading over or through the external wall of the building. This appraisal is intended to inform the Building's Fire Risk Assessor, to allow them to determine the overall building fire risk level.

This external wall appraisal considered whether the risk of fire spread is likely to be 'unduly rapid', the potential and consequence of secondary fires and the implications for escape of occupants; whilst considering the likely mitigation provided by existing fire safety features of the building and the ability of the Fire and Rescue Service (FRS) to intervene.

External wall types:

Table 3: External wall types.

External wall type	Outer face material
1	Wall Type #1 – Steni Glass Reinforced Polymer (GRP) Rainscreen Cladding Panels on Wimpey No Fines Concrete. 38mm Paramount plasterboard partition with skim finish, 40mm void, 230mm Wimpey no fines concrete, 20mm pebble dash render, 50mm mineral wool non-combustible insulation, 15mm cavity void and 8mm Steni Nature GRP combustible rainscreen cladding panels. This external wall type applies to the east, south and west elevations at first, second, third and fourth floor levels and fourth floor level to the south elevation.

2	Wall Type #2 - Steni GRP Rainscreen Cladding Panels on Concrete Blockwork. 38mm Paramount plasterboard partition with skim finish, 10mm void, 200mm concrete block, 20mm pebble dash render, 45mm mineral wool non-combustible insulation and 8mm Steni Nature GRP combustible rainscreen cladding panels. This external wall type applies to the north elevation at first, second and third floor levels along the open access balconies.
3	Wall Type #3 - Steni GRP Rainscreen Cladding Panels on Wimpey No Fines Concrete. 20mm pebble dash render, 263mm Wimpey no fines concrete, 20mm pebble dash render, 50mm mineral wool non-combustible insulation at compartment floor locations, 40mm cavity void and 8mm Steni Nature GRP combustible rainscreen cladding panels. This external wall type applies to the north elevation at first, second and third floor levels.
4	Wall Type #4 – Solid uPVC Panels. 38mm Paramount plasterboard partition with skim finish, 10mm void, 200mm concrete blockwork, 2mm void with 20mm solid white uPVC panel retained in a uPVC frame. This external wall type applies to the north elevation at first, second, third floor levels along the open access balconies and at fourth floor level and to the south elevation at fourth floor level.
5	Wall Type #5 – Traditional Masonry Cavity Wall. Painted 100mm brickwork internal leaf with 60mm clear cavity and 100mm facing brickwork to the external leaf. This external wall type applies to the two escape staircases, located to the east and west elevations.
6	Wall Type #6 – Traditional Masonry Cavity Wall. Plastered internally unknown internal leaf with unknown cavity / insulation, external leaf comprising of 100mm facing brickwork. This external wall applies to the 3 No. ground floor flats that were constructed in 1995 located along the south elevation.

7	Wall Type #7 – Reinforced Concrete Wall. 300mm Solid concrete wall. This external wall is visible adjacent to the garages at ground floor level to the north elevation.

Balconies present:

Table 4: Balcony types.

Elevations	Balcony material(s)
North	Open access balconies located at first, second and third floor levels.
South	None.
East	None.
West	None.

Conclusion.

The findings within this appraisal consider the level of fire risk posed by the external walls and determined following a review of their fire performance, façade configuration and fire strategy factors.

The overall risk rating is determined to be:

Low	Medium (Tolerable)	Medium (Further assessment required)	High
			YES

Recommendations.

Table 5: Recommendations.

	Recommendations	Priority	Time frame
1.	It is recommended that this appraisal report is provided to the building's fire risk assessor, to assist those persons in concluding the overall fire risk level within the building.	High	1 month.
2.	Remove the combustible Steni GRP rainscreen cladding panels and replace them with a cladding system using materials which are non-combustible or of limited combustibility (Euroclass A2-s1, d0 or better). The applicable areas for removal are all elevations.	High	Aim to commence the works within 9 -12 months.
3.	Remove the combustible solid white uPVC cladding panels and replace them with a cladding system using materials which are non-combustible or of limited combustibility (Euroclass A2-s1, d0 or better). The applicable areas for removal are the first, second, third and fourth floor levels to the north elevation and at fourth floor level to the south elevation.	High	Aim to commence the works within 9 -12 months.
4.	Where cavities are present in any replacement cladding system, ensure suitable cavity barriers are installed at floor & wall compartment lines, wall edges, around vent penetrations and around window openings.	High	During remediation.
5.	If not already in place, it is suggested to document a Fire Safety Management Plan for Queens Court.	Medium	6 months

See Section 10 for the considerations made in determining the above recommendations are a proportionate response.

1 Introduction

A fire risk appraisal of the external wall and associated attachments (FRAEW) seeks to assess the level of risk to building occupants from a fire spreading over or within the external walls of the building, and to determine if the extent of fire risk is tolerable or is of such significance that risk-proportionate remediation or further mitigation measures are considered necessary.

The type of buildings, of any height, expected to be within scope of such assessment are multistorey blocks of flats and include student accommodation, specialised housing, residential care and buildings converted into flats. Additionally, an FRAEW may be considered appropriate for other building types, such as hotels.

The approach of the FRAEW is risk-based, not compliance-based; therefore, it is not possible to establish absolute safety but to categorise risk on a relative basis by taking into account whether the rate of fire spread is likely to be 'unduly rapid', consideration for the potential consequences of secondary fires and the implications for escape of occupants, against the likely mitigation provided by existing fire safety features of the building and the ability of the Fire and Rescue Service to intervene effectively. The appraisal is reliant upon professional judgement in the assessment of risk and in the conclusions drawn.

Risks identified within the process of a FRAEW will be scored on a relative scale from 'low' to 'high'.

A **low risk** indicates rapid external fire spread is not expected due to appropriate construction standards for the external wall (e.g., having correctly installed fire barriers at compartment floor and wall junctions), and / or the external wall construction consists primarily of non-combustible materials (or of limited combustibility).

A **high risk** is considered where there is likely to be rapid external fire spread due to the presence of significant quantities of combustible cladding or insulation, and significant deficiencies in the fire safety features of the external wall construction.

Our methodology for undertaking the FRAEW follows the five-step basic level assessment approach detailed within PAS 9980:2022, as detailed below.

Step 1 - Confirmation that a full FRAEW is required.

Step 2 - Gather necessary building information.

Step 3 – Determine significant risk factors.

Step 4 – Evaluate risk factors against benchmark risk criteria.

Step 5 – Risk factor analysis to give overall risk level.

In some circumstances, the FRAEW conclusion may recommend a further technical assessment be undertaken to determine whether the fire risk posed by the external wall construction is tolerable. Such recommendation is expected where there is significant complexity or uncertainty as to the fire risk posed by material(s) on the specified building.

1.1 Scope

Oakleaf Surveying Ltd have been appointed by B3Living Ltd to undertake a fire risk appraisal of the external walls and attachments at Queens Court. Holdbrook South, Waltham Cross, Hertfordshire EN8 7SN ; this report applies only to these premises.

The scope of this commission is limited to the risk to life from fire spread via the external wall only and does not include the assessment of other fire risk(s) arising within or around the building and does not provide a review of the adequacy of the other installed fire precautions within the building.

To evaluate the fire risk(s) posed by the external wall, a subjective appraisal is undertaken, and risk ratings are scored on a subjective basis to describe the anticipated likelihood of fire spread and the potential consequence of such fire development. These risk ratings are assigned using professional judgement and should not be considered as absolute.

1.2 PAS 9980 Step 1

The FRAEW 1 Report previously referenced and intrusive survey carried out in August 2021 indicated the presence of sufficient combustible materials within the external walls to justify the need for a full FRAEW appraisal.

1.3 Limitations

It is important to note that an FRAEW does not provide evidence of compliance with Building Regulations (at the time of construction or currently) and does not constitute a fire risk assessment, as required under the Regulatory Reform (Fire Safety) Order 2005; the intention of the FRAEW, as stated within PAS 9980, is to assist the building's fire risk assessor in determining the overall fire risk level within the premises, and when considering the fire safety precautions for the building as a whole, whether additional mitigating actions or interim measures are required.

The FRAEW considers matters relating to life safety only, and those which specifically relate to the spread of fire via the external walls of the building.

Where intrusive inspections are undertaken, for the confirmation of materials and construction, the findings are limited to the sample areas surveyed only and which may not reflect the entire construction of the external wall, including standards of workmanship.

Due to access restrictions within the Holdbrook South development (consisting of Harold Court, Albert Court, Alexandra Court & Queens Court) the only available vacant flat was located in Harold Court (Flat No. 354); therefore the detailed intrusive and internal investigations were undertaken on Harold Court, in addition the intrusive external wall survey findings carried out in August 2021 have been referenced. As the 4 No. buildings forming the 'Holdbrook South' development were constructed and refurbished at the same time and the external wall materials are the same for each building (confirmed from our intrusive and visual surveys), the Harold Court findings have also been used for this assessment.

It should be noted that this assessment is based on material characteristics and performance data currently available, 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 this FRAEW, such information will be expected to take precedence.

Fire risk is only considered in relation to the threat to occupants within the building and not in terms of property damage or other potential objectives, such as the safety of firefighters and / or other responding personnel.

This report is based upon the Client's description of their requirements and is subject to assumptions that Oakleaf Surveying Ltd can reasonably be expected to make in accordance with sound professional principles and experience.

Oakleaf Surveying Ltd accepts no liability for the accuracy of the information provided by the Client or other Third Parties.

Oakleaf Surveying Ltd shall not be held responsible or liable for designs or information provided by any other consultants, sub-consultants or sub-contractors, including original designs produced by Others which may have been adapted, modified or developed in the carrying out of services.

This report has been developed with reliance upon drawings and information provided by the Client. Any subsequent changes to the premises, including occupants and use of, which are not agreed with Oakleaf Surveying Ltd, may invalidate this report.

Any recommendation made within this report is not to be considered as absolute; with any fire safety consideration, there may be alternate ways to reach the same objective.

2 Legislation

2.1 Building Regulations (Fire Safety)

The first building regulations date back to 1667 (London Building Act), then nationally the Public Health Act 1875 was introduced. Then Building Regulations 1965 were formed and continually amended, until the introduction of the Building Act in 1984, which consolidated all building regulations under one piece of legislation.

With regards to fire safety, there has been little change in the *functional requirements* made under Part B, Schedule 1, of the Building Regulations, since their introduction in 1985; the most recent significant amendment was the combustible ban (Regulation 7) for high-rise buildings, as made in 2018.

The fire safety functional requirements of the Building Regulations, directly relating to external walls, require adequate resistance of the spread of fire over the external walls and from one building to another, having regard to the height, use and position of the building.

Additionally, the Regulations require that the building be designed and constructed so that the unseen spread of fire and smoke within concealed spaces in its structure and fabric is inhibited, this includes cavities formed in the external wall.

2.2 Regulatory Reform (Fire Safety) Order 2005

The primary fire safety legislation, applicable to these premises, is the Regulatory Reform (Fire Safety) Order 2005 (FSO). The FSO is enforced by the local Fire Authority and places duties on Responsible Persons to ensure the premises are safe from fire, so far as is reasonably practicable.

The Fire Safety Act 2021 was introduced to clarify the scope of the FSO, making it clear that it applies to the structure, external walls and individual flat entrance doors between domestic premises and the common parts of multi-occupied residential buildings.

The Fire Safety (England) Regulations were laid under article 24 of the FSO and came into force in January 2023. These specific regulations, relating to external walls only, require the Responsible Person to provide their local FRS with information about:

a) the design and materials of a high-rise building's external wall system,

b) the level of fire risk posed by that system, and

c) any mitigation steps taken.

The FSO requires the Responsible Person to undertake a suitable and sufficient Fire Risk Assessment (FRA) of the building, which considers the general fire hazards, and the fire precautions taken, in order to determine the overall level of fire risk. This FRAEW will assist those persons instructed to undertake the FRA and will provide information related to the fire risk resulting from the design and materials of the external walls.

3 PAS 9980 Step 2 – Building Information

3.1 Construction

3.1.1 Building characteristics

Figure 1: Front (North) elevation of the building.

Figure 2: Side (East) elevation of the building.

Figure 3: Rear (South) elevation of the building.

Figure 4: Side (West) elevation of the building.

Imagery © Google 19/12/2025.

Figure 5: Arial view of the building.

Table 6: Building characteristics - Structure.

Building Characteristics - Structure	
Current principal use(s)	Residential (dwellings), Purpose Group 1(a).
Resident profile	General needs occupancy.
Evacuation strategy	Stay-put / Defend in place.
Building height (m, to highest occupied floor level above lowest adjacent ground level)	11.20m based on site measurement of individual storey height.
Number storeys above ground floor:	5 (Grd, 1, 2,3 & 4).
Number storeys below ground level.	None.
Ground floor use(s)	Residential.
Number of residential flats (total)	18 No. flats in total, 3 No. flats at ground level (no access to communal areas) and 12 No. garages, 6 No. flats at first floor level, 3 No. flats at second floor level and 6 No. flats at third floor level which are duplex flats.
Number of staircases and number of final exits	Open plan access balcony at first, second and third floor levels with 2 No. escape staircases and 2 No. final exits at ground floor level.
Number of single staircases serving ground floor and all the storeys immediately above	2 No. escape staircases located at either end of the block with entrance / exit doors with electronic access control (EAC).
Type of building construction (structural design)	Reinforced Concrete frame with Wimpey no fines concrete external walls.
Original construction date	1973 and thermally upgraded/refurbishment in 1995, which included construction of the ground floor flats.
External features (description and materials used) other than balconies described above.	Steel frame decorative features at third and fourth floor levels on the north elevation and at second, third and fourth floor levels to the south elevations.

	Steel cable ducting running along the south elevation at second floor level.
Ancillary accommodation areas	N/A.
External surroundings, provisions & site access	Residential area, internal bin stores and street parking.
Fuel supplies (Gas, LPG, Biomass etc.)	Gas. The mains gas supply pipework runs along the length of the open access balconies.

Table 7: Building characteristics - Fire & Smoke Protection Systems.

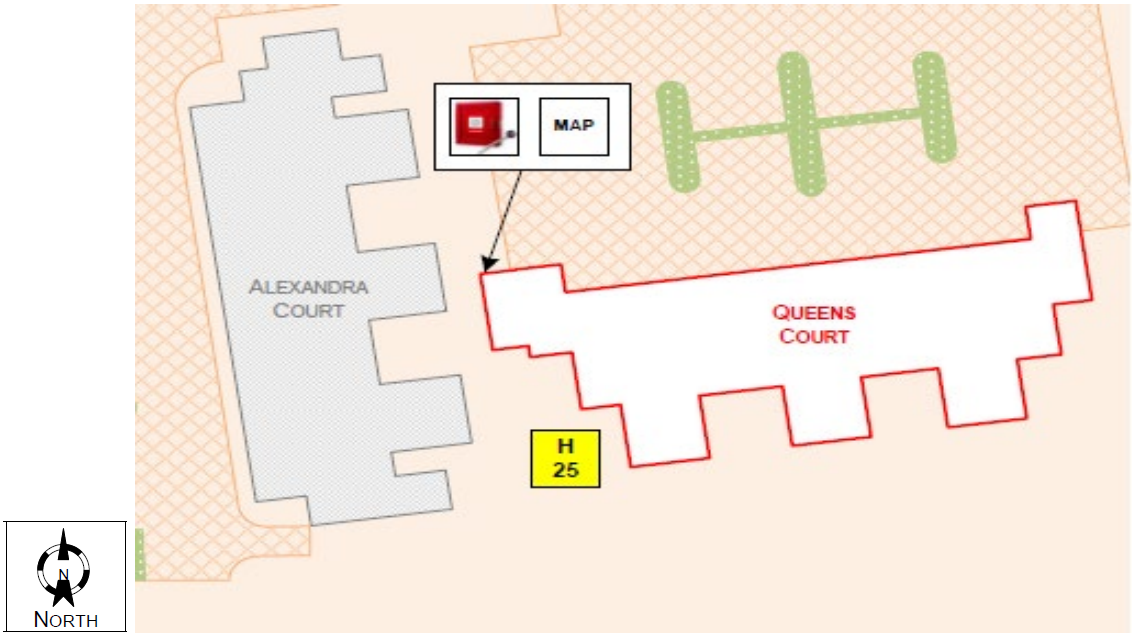
Building Characteristics – Fire & Smoke Protection Systems	
Fire detection and alarm system installed?	The Fire Risk Assessment (FRA) denotes that no fire alarm system is provided or considered as required for the common parts of this purpose-built property with a Stay Put evacuation policy. The flat that was sampled during the FRA inspection is provided with a Grade D:LD3 system as required. The flats owned and leased by B3Living Ltd have a minimum of a category Grade D – LD3, alarm installed.
Smoke control system installed (natural ventilation)?	No.
Smoke control system installed (mechanical ventilation)?	No.
Smoke or fire curtain installed?	No.
Fire or smoke dampers installed?	No.
Domestic water sprinkler system (e.g. BS 9251) installed?	No.

Non-domestic water sprinkler system (e.g. BS EN 12845) installed?	No.
Water-mist fire protection system installed?	No.
Lightning protection system installed?	No.
Number of Firefighting shafts?	No.
Number of Dry Riser fire mains installed?	No.
Number of Wet Riser fire mains installed?	No.
Number of Firefighting lifts installed?	No.

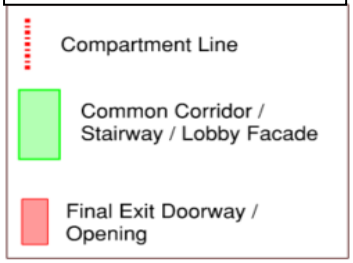
3.1.2 Building Features

The relevant external wall building features (e.g., compartment lines, escape route facades etc.) are shown on the following figures.

Figure 6: Queens Court Orientation Plan.



Building Features Key
(For diagrams below)



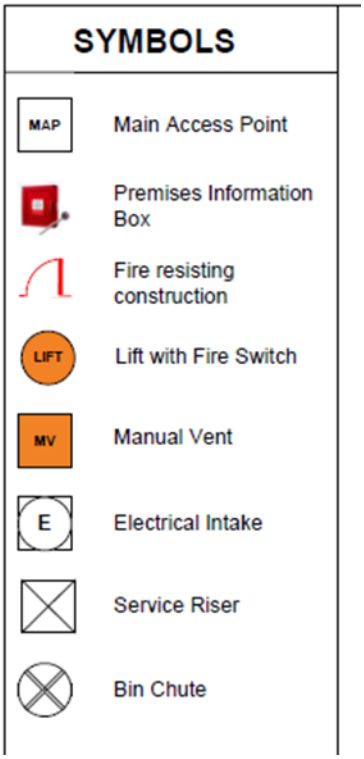


Figure 7: Queens Court Ground Floor Plan.

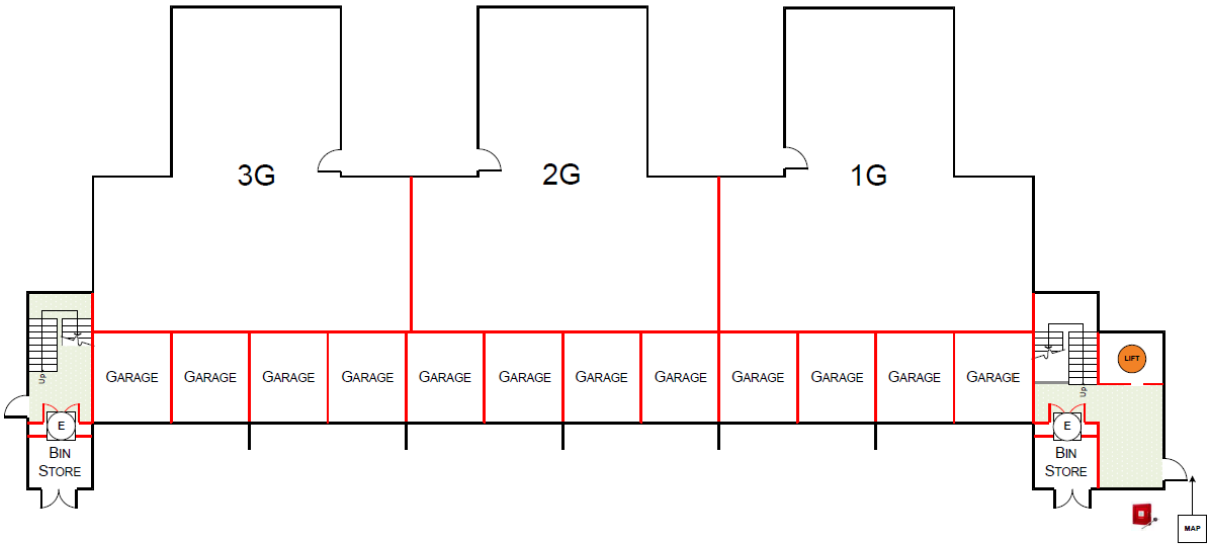


Figure 8: Queens Court First Floor Plan.

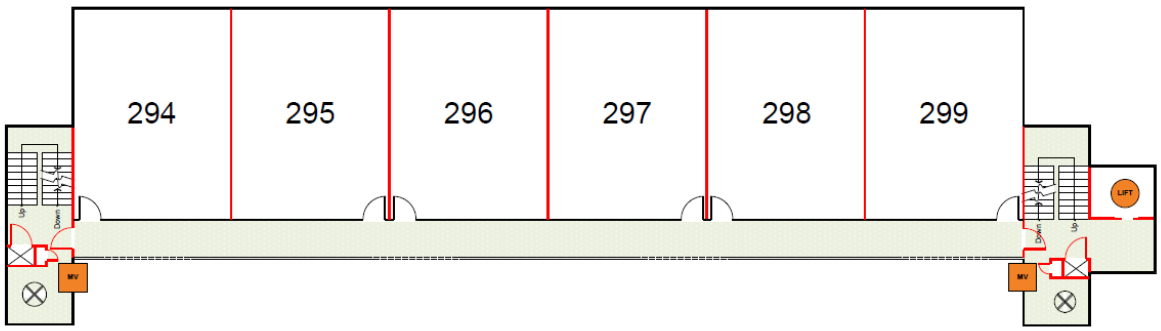


Figure 9: Queens Court Second Floor Plan.

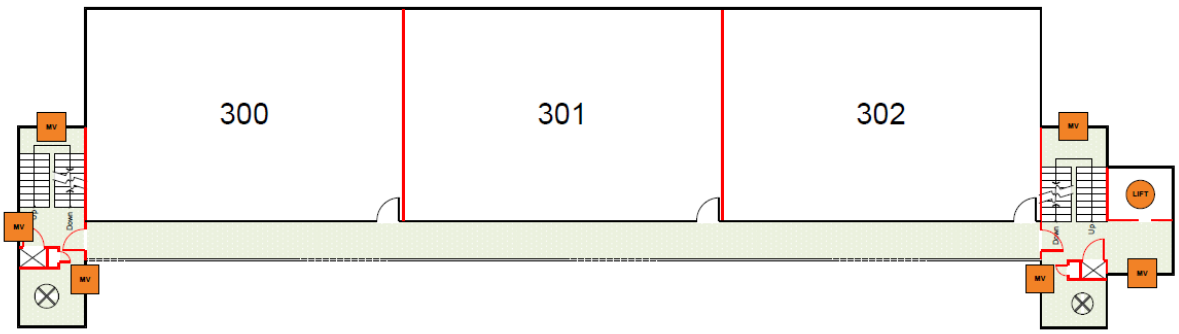


Figure 10: Queens Court Third Floor Plan.

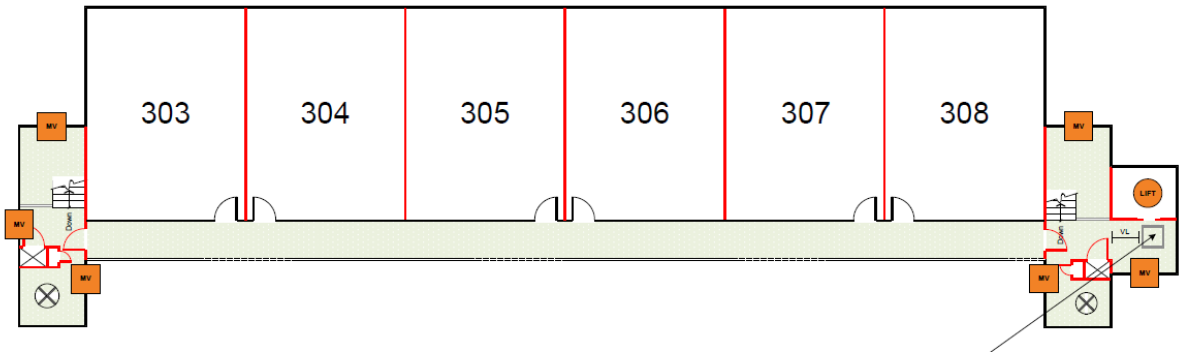


Figure 11: Queens Court Fourth Floor Plan.

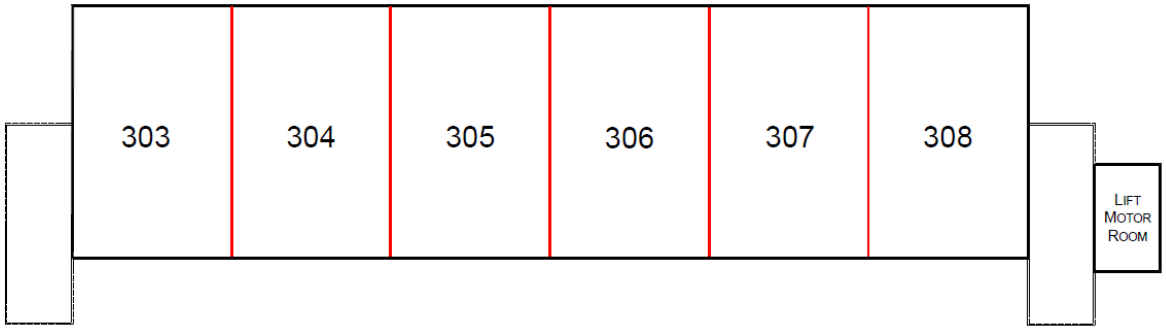


Figure 12: Queens Court North Elevation.

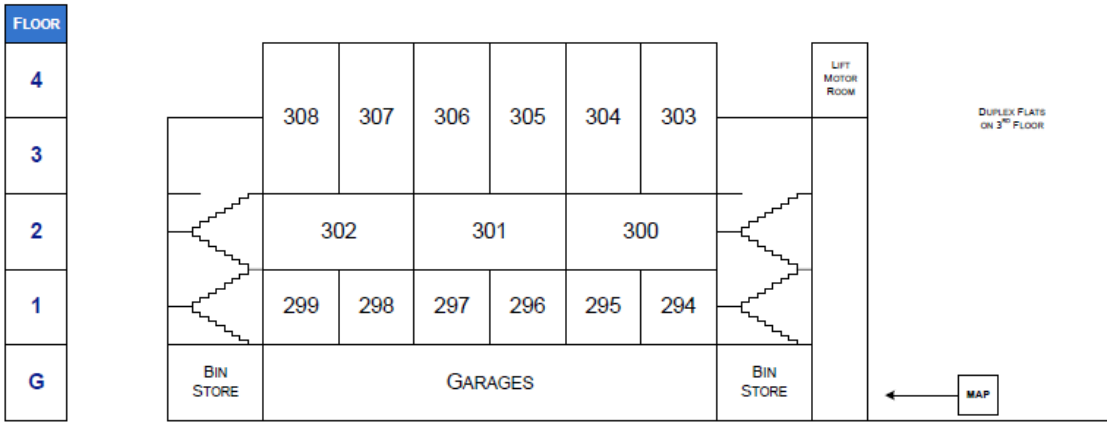
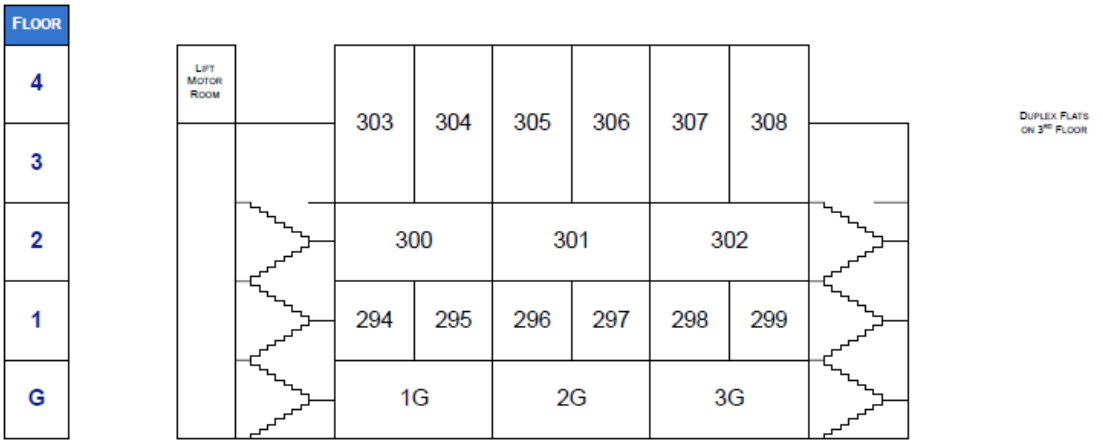


Figure 13: Queens Court South Elevation.



3.1.3 Internal Fire Separation

According to the requirements of guidance at time of design & construction, the fire resisting compartmentation is required to be 30 minutes around the protected hallways within the apartments and 60 minutes between apartments.

The FRA denotes that the compartmentation of the common areas and means of escape as being adequate. It was noted during our survey that redundant core holes, which pass through the concrete floor slab along the open access balconies, where the old gas pipe ran, have not been fire stopped when the pipe was removed, see Figures 57 & 58.

It is recommended that the redundant core holes are fire stopped by a suitably Accredited FIRAS Contractor ASAP.

There is no sprinkler protection present within the building, as this was not a requirement when the building was originally constructed or refurbished in 1995.

In addition, we have not considered the installation of a sprinkler system as part of our appraisal as we have followed the five-step basic level assessment approach detailed within PAS 9980:2022. Due to the structural layout of the building and the external open access balconies any pipework would have to be run externally and would be susceptible to frost damage. These constraints make retrofitting a sprinkler system unlikely to be feasible.

However, when undertaking any significant refurbishment of Queens Court in the future consideration should be given by B3Living Ltd to the feasibility of installation of a sprinkler system designed and installed in accordance with BS 9251: 2021.

3.1.4 External Fire Spread

Ignition of external walls can be caused via windows or other openings in adjacent or abutting neighbouring buildings that are sufficiently close that direct flame impingement from a fire in the neighbouring building occurs. The closest neighbouring building is approximately 2.42m away to the west elevation (Melbourne Court) at ground floor level. The upper floors which have the Steni GRP rainscreen cladding panels are approximately 14.00m away and therefore will not present a significant risk.

3.1.5 Fire Service Access and Facilities

Vehicular access to the building perimeter is available only to the north elevation. Access to the south elevation is restricted due to the fenced gardens to the ground floor flats.

The facilities provided appear to meet the requirements set out for a building of this type & height within Statutory Instrument 1972/317.
There are 3 No. fire hydrants located within close proximity of Queens Court. The fire hydrants are located on Eleanor Cross Road, What3words ///pigs.cling.social. To the rear elevation of Queens Court, What3words///bunch.notes.lanes and adjacent to Albert Court car park, What3words ///woke.drops.enjoyable.

3.2 Fire Strategy Factors

Risk factors arising from fire strategy or fire hazards are considered with respect to the ability of occupants being able to escape the premises, should a fire occur and spread via the external wall only.

Consideration is given to the ability of the Fire and Rescue Service (FRS) to intervene, but does not attempt, or imply knowledge of, the tactics and techniques which may be employed by the FRS in their operational undertaking.

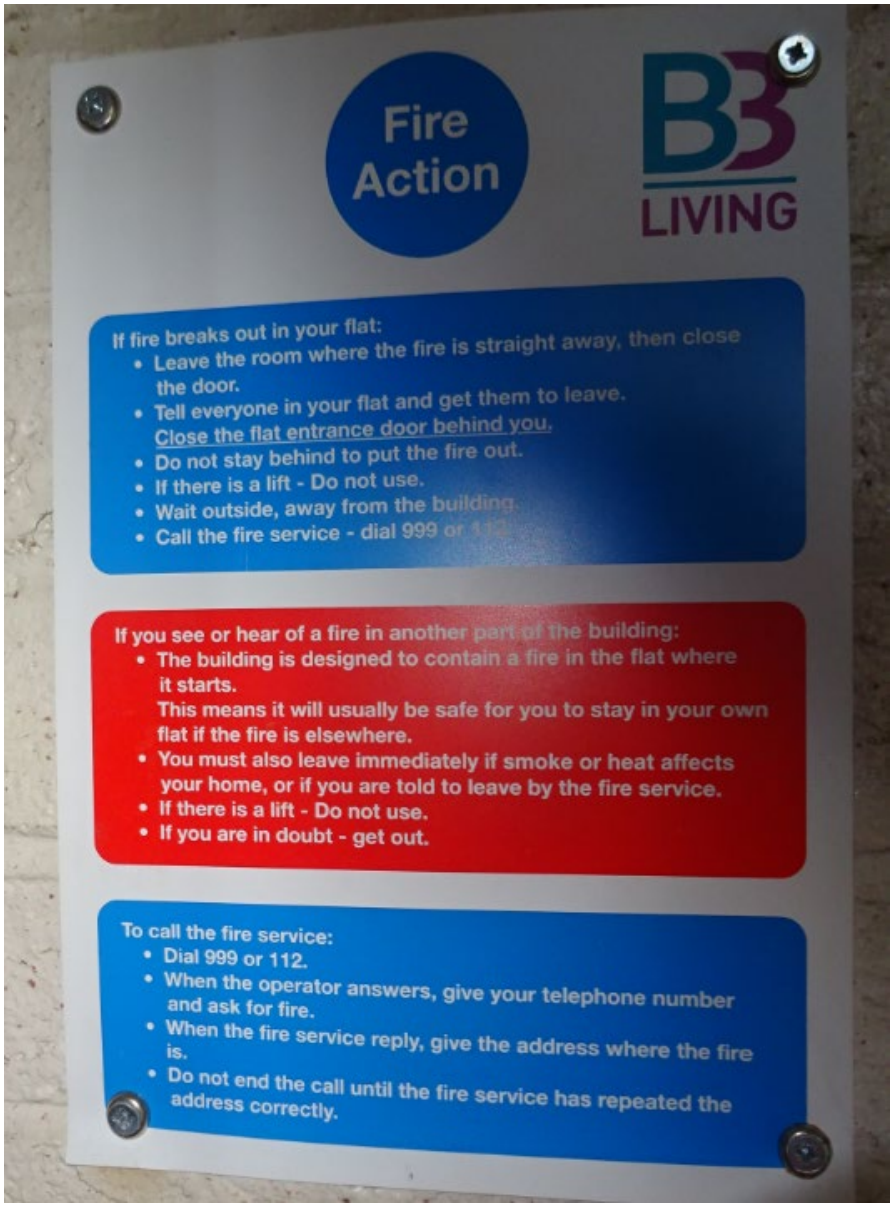
No documented fire strategy has been made available in respect of the premises.

3.2.1 Occupants

Occupants are assumed to fit a general needs profile as indicated within the current FRA. Oakleaf have requested confirmation from B3Living Ltd if any residents have any Personal Emergency Evacuation Plans (PEEPs) in place, at the time of writing our report no confirmation has been received.

3.2.2 Evacuation Strategy

The evacuation strategy for Queens Court is currently a Stay Put policy with Fire Action instructions displayed in the staircase lobbies.



3.2.3 Means of Warning & Escape

The Fire Risk Assessment (FRA) denotes that no fire alarm system is provided or considered as required for the common parts of this purpose-built property with a Stay Put evacuation policy.
The flat that was sampled during the FRA inspection is provided with a Grade D:LD3 system as required.
The flats owned and leased by B3Living Ltd have a minimum of a category Grade D – LD3, alarm installed.

The ground floor flats exit direct to external fresh air. Flats to the upper floors escape via an open access balcony along the north elevation with two staircases, one located at either end of the building and two final exits at ground floor level, one final exit to the east staircase, and a single final exit to the west staircase. The open access balconies have an FD30S fire door located at either end of the balcony prior to entering the staircases.

3.2.4 Fire Safety Management

No Fire Safety Management Plan was provided, if one does not exist it is recommended that one is produced by a competent person.
From visual observations, the level of routine fire safety management appears acceptable with no waste materials observed adjacent to the external façade when assessed.

4 External Wall Systems

Summary descriptions of external wall systems.

Table 8: External Wall Types.

Wall type #	Description	Locations	Approx. % area
1.	Steni GRP rainscreen cladding panels on Wimpey no fines concrete.	Queens Court	42%
2.	Steni GRP rainscreen cladding panels on concrete blockwork (Open access balconies).	Queens Court	10%
3.	Steni GRP rainscreen cladding panels on Wimpey no fines concrete (Open access balconies).	Queens Court	15%
4.	Solid uPVC panels (Open access balconies).	Queens Court	10%
5.	Traditional masonry cavity wall (Escape staircases).	Queens Court	11%
6.	Traditional masonry cavity wall (Ground floor flats).	Queens Court	9%
7.	Reinforced concrete wall.	Queens Court	3%

4.1 Requirement for a full FRAEW

The preliminary assessment of the existing information pertinent to the external walls indicated that a substantial proportion of the external walls are constructed using combustible materials. Although the height of this building (11.20m, taken from site measurements) does not necessarily place it in the higher risk category but when combined with the combustible nature of the Steni Glass Reinforced Polymer (GRP) rainscreen cladding panels applied to all elevations of the building increases the risk to occupants in the case of a fire affecting the external walls.

The combustible Steni GRP rainscreen cladding panels partially covering the open access balconies and solid white uPVC panels surrounding the windows along the north elevation could act as a medium for the rapid spread of fire and potentially impact the means of escape.

In order to confirm the types of materials used in the construction and the wall build-up for Queens Court, an intrusive inspection survey was carried out by Oakleaf Surveying on 30th October & 25th November 2025.

The intrusive survey identified seven main external wall build-ups; these are described in Section 5.

As some of these wall types incorporated significant quantities of combustible components, further detailed consideration of their impact on the risk of rapid external wall fire spread was considered necessary, and hence a PAS 9980 FRAEW has been undertaken.

4.2 Building Regulations

At the time of building design / construction, the relevant regulation in force was The Building Regulations 1970, and the applicable fire safety guidance in force is likely to have been The Building Regulations 1970 Part B namely part B2.

The Building Regulations define the following functional requirement:

Figure 14: Building Regulations Requirement B2 1970.

Deemed-to-satisfy provisions regarding the fitness of materials

B2. *The use of any material or any method of mixing or preparing materials or of applying, using or fixing materials which conforms with a British Standard or a British Standard Code of Practice prescribing the quality of material or standards of workmanship shall be deemed to be a sufficient compliance with the requirements of regulation B1 if the use of that material or method is appropriate to the purpose for and conditions in which it is used.*

External Wall Surfaces.

At the time of construction, Building Regulations 1970 primarily addressed the weathering of materials rather than the spread of flame across their surfaces. Purely for comparison purposes, if built today, ADB B4 would be applied to mitigate external fire spread risks and would place restrictions on the surface spread of flame characteristics.

External Wall Construction.

Again, purely for comparison purposes, the current wall construction would not meet the standards of the current version of Approved Document B (ADB) which restricts the use of combustible materials within the external walls of residential buildings over 11m in height. Queens Court was thermally upgraded in 1995, which included the installation of the Steni GRP rainscreen cladding panels, likely introduced to reduce mould growth and minimise heat and energy loss from the flats to improve/achieve Part L of the Building Regulations compliance and improve the aesthetics of the building.

This appraisal does not consider the functional requirement for resisting fire spread between the building in question and the adjacent buildings, i.e., no consideration is given to limitation of unprotected openings for resisting fire spread to adjacent buildings. The risk of fire spread from neighbouring buildings to Queens Court is discussed in section 3.1.4.

5 Initial Wall Types Assessment

This initial assessment reviews the results from the intrusive survey, together with the relevant fire performance data, to determine if each individual wall build-up is sufficiently low risk to not require any further assessment, or if the complete 'Basic' PAS 9980 assessment (Steps 3 to 5) is required. This process will then determine the risk rating for individual wall build-ups, and subsequently for the building as a whole.

As a comparative indicator of the fire hazard for each wall type, the fire load per unit area (MJ/m^2) is determined using calorific values, density and thickness data, this is given in the assessment tables below.

Due to access restrictions and the only available vacant flat being located in Harold Court (Flat No. 354) our detailed intrusive and internal investigations were undertaken on Harold Court, in addition the intrusive external wall survey findings carried out in August 2021 were reviewed. As the other 3 No. buildings located in the 'Holdbrook South' development were constructed and refurbished at the same time and the external wall materials are the same for each building, which has been confirmed from our intrusive and visual surveys, these findings have also been for our assessment.

5.1 Wall type #1 - Steni GRP Rainscreen Cladding Panels on Wimpey No Fines Concrete.

This wall type is present to the east, south and west elevations of Queens Court at first, second, third and floor levels and to the fourth-floor level to the north elevation approx. 42% of the surface area (Estimate).

The wall type consists of Steni GRP rainscreen cladding panels, a cavity void, mineral wool insulation batts, a pebble dash cement render with a Wimpey no fines concrete substrate wall with an internal cavity void and a Paramount partition board lining with a plaster skim finish.

No As-built design or documents were available for Oakleaf to review. Based on manufacturer's technical data sheet, see extract in Table 9 below, obtained during the cladding investigations undertaken in 2021, the outer panel surface reaction to fire is B-s1,d0, which is relevant when considering fire spread from adjacent building. It is noted that the inner surface of the Steni cladding panels is GRP and is without the surface coating of crushed aggregate that may be necessary to achieve a B-s1, d0 surface reaction to fire rating for the inner surface. The Technical Approval document states that the fire rating only applies if A1 / A2 mountings of at least 9mm thick are used. The stainless-steel helping hand brackets are less than 9mm thick.

Table 9: Reaction to Fire for Steni GRP Panels (SINTEF Technical Approval – No. 2165).

Table 3 Reaction to fire for Steni panels.

Product	Classification
Steni Colour1), Steni Vision1) Steni Nature type FM2), F2) og M3)	B-s1,d0
Steni Nature type C (Tested weight 21,2 kg/m^2)	A2-s1,d0

The comments made regarding the fire performance of the Steni cladding panels also apply to the other wall types incorporating this product.

Table 10: External wall system #1 build-up (Outside to inside).

Wall Type A - Steni GRP Rainscreen Cladding Panels on Wimpey No Fines Concrete.	mm	Density* (kg/m^3)	Gross Calorific Value* (MJ/kg)	Surface reaction to fire class	Material volume (m^3/m^2)	Material mass (kg/m^2)	Fire load (MJ/m^2)
Steni Nature type F2 GRP rainscreen cladding panels	8	1960	11.8	B-s1,d0	0.008	15.68	185
Cavity void	15	0	0	-	0.015	0	0
Mineral Wool (Block)	50	140	0	A1	0.05	7	0
Cement Render	20	1650	0	A1	0.02	33	0
No-fines concrete slab	230	1750	0	A1	0.23	402.5	0
Cavity void	40	0	0	-	0.04	0	0
Paramount Partition board (Thickness = 1)	1	1528	16.1	A2-s1, d0	0.001	1.528	25
Plaster	1	1350	0	A1	0.001	1.35	0
Note: ** - Indicates values may be actual or indicative.*						**Total fire load (MJ/m^2)**	210

5.1.1 Junctions, Cavities and Openings

The intrusive survey identified that a cavity exists behind the Steni GRP rainscreen facade, this cavity was partially filled with mineral wool insulation batts mechanically fixed to the original pebble dash render. Stainless steel helping hand brackets support the Steni GRP rainscreen cladding panels. The substrate behind the pebble dash render comprises of a Wimpy no fines concrete wall.

The cavity to the Steni GRP rainscreen cladding panels is continuous vertically with no cavity barriers installed at compartment floor locations observed during our inspections. Vertical cavity barriers, in the form of a solid mineral wool batt, had been installed in some compartment wall locations but these are unsuitable as they are not fully in compression to the pebble dash render and the rear of the Steni GRP rainscreen cladding. In the event of a fire, fire and smoke would be able to pass along the cavity to the rainscreen cladding. Voids were noted to be present behind the insulation installed around the window reveal cladding panels.

In some locations insulation had been omitted and penetrations through the external wall had not been suitably fire stopped.

5.1.2 Initial Assessment Findings

The presence of the combustible Steni GRP rainscreen cladding panels results in this wall type having an indicative fire load value of 210 MJ/m^2 and together with the construction defects found indicate that a complete 'Basic' PAS 9980 assessment (Steps 3 to 5) is necessary for this wall type.

Figure 15: General view of External Wall Type #1.

Figure 16: Close up view to show mineral wool insulation.

Figure 17: General view to show pebble dash render finish.

Figure 18: General view to show Wimpey no fines concrete.

Figure 19: General view to show loose mineral wool insulation at compartment floor location to south elevation. NB. Unsuitable cavity barrier installed at compartment floor location.

Figure 20: General view to show the Steni GRP rainscreen cladding panel and mineral wool insulation. NB. Some insulation is loose fixed and not mechanically fixed to concrete wall.

Figure 21: Close up view to show pebble dash render with Wimpey no fines concrete located behind render finish.

Figure 22: General view to missing insulation to window jamb.

Figure 23: General view to show Steni GRP rainscreen cladding panel, stainless steel helping hand brackets and mineral wool insulation.

Figure 24: General view to show mineral wool insulation, pebble dash render with Wimpey no fines concrete.

Figure 25: General view to show no horizontal cavity barrier installed at compartment floor location.

Figure 26: General view to show insulation mechanically fixed.

Figure 27: General view of internal sample location inside first floor Flat No. 354 (Harold Court).

Figure 28: Close up view of the internal Paramount partition lining to the external wall.

Figure 29: General view to show void between inner blockwork leaf and Paramount partition lining board – 40mm.

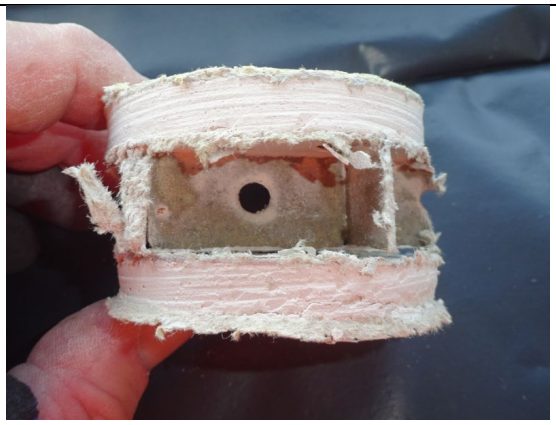


Figure 30: Close up view of Paramount partition lining board which comprises of two layers of 10mm plasterboard with an 18mm honeycomb cardboard core.

Figure 31: Alternative view of Paramount partition lining board which comprises of two layers of 10mm plasterboard with an 18mm honeycomb cardboard core.

Figure 32: Alternative view of Paramount partition lining board which comprises of two layers of 10mm plasterboard with an 18mm honeycomb cardboard core.

Figure 33: General view to confirm thickness of the Paramount partition lining board – 38mm.

Figure 34: General view to confirm thickness of the plasterboard – 10mm.

5.2 Wall type #2 - Steni GRP Rainscreen Cladding Panels on Concrete Blockwork.

This wall type is present on the north elevation of Queens Court at first, second and third floor levels along the open access balconies approx. 10% of the surface area (Estimate). The assessment for this wall type is based on visual product identification at Queens Court and the intrusive survey findings obtained from the visually identical sister block Harold Court.

The wall type consists of Steni GRP rainscreen cladding panels, mineral wool insulation batts, a pebble dash cement render with a concrete block substrate, an internal cavity void and a Paramount partition board lining with a plaster skim finish.

Table 11: External wall system #3 build-up (Outside to inside).

Wall Type 2 – Steni GRP Rainscreen Cladding Panels on Concrete Blockwork	mm	Density* (kg/m^3)	Gross Calorific Value* (MJ/kg)	Surface reaction to fire class	Material volume (m^3/m^2)	Material mass (kg/m^2)	Fire load (MJ/m^2)
Steni Nature type F2 GRP rainscreen cladding panels	8	1960	11.8	B-s1,d0	0.008	15.68	185
Mineral Wool (Block)	45	140	0	A1	0.045	6.3	0
Cement Render	20	1650	0	A1	0.02	33	0
Concrete block	200	1450	0	A1	0.2	290	0
Cavity void	10	0	0	-	0.01	0	0
Paramount Partition board (Thickness = 1)	1	1528	16.1	A2-s1, d0	0.001	1.528	25
Plaster	1	1350	0	A1	0.001	1.35	0
Note: ** - Indicates values may be actual or indicative.*						**Total fire load (MJ/m^2)**	210

5.2.1 Junctions, Cavities and Openings

The intrusive survey identified that non-combustible mineral wool insulation batts have been installed between the existing pebble dash render and Steni GRP rainscreen cladding panels. As the insulation material is non-combustible no further cavity barriers are required.

It should be noted that the mains gas supply pipework runs along the length of the open access balconies, see Figure 56. Any potential damage to the pipework could lead to an escalation of a fire affecting the open access balconies.

5.2.2 Initial Assessment Findings

The presence of the combustible Steni GRP rainscreen cladding panels results in this wall type having an indicative fire load value of 210 MJ/m^2 indicates that a complete 'Basic' PAS 9980 assessment (Steps 3 to 5) is necessary for this wall type.

Figure 35: General view of the Steni GRP panels installed along the open access balconies along the north elevation at first floor level.

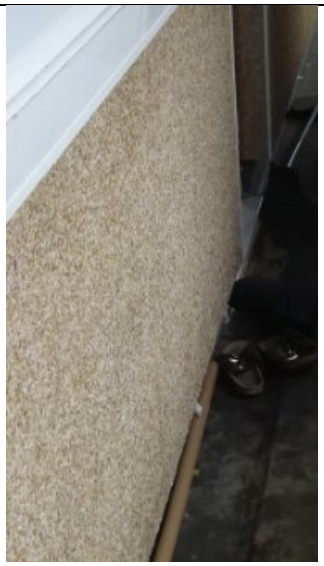


Figure 36: Close up view of the Steni GRP panels installed along the open access balconies.

Figure 37: Close up view of the Steni GRP panels installed along the open access balconies.

Figure 38: General view of sample location located outside first floor Flat No. 354 (Harrold Court).

Figure 39: General view of Steni GRP rainscreen cladding panel.

Figure 40: General view to confirm thickness of Steni GRP rainscreen cladding panel – 8mm.

Figure 41: General view to show mineral wool insulation batt installed behind Steni GRP rainscreen cladding panel, with pebble dash render finish in the background.

Figure 42: General view to show mineral wool insulation batt.

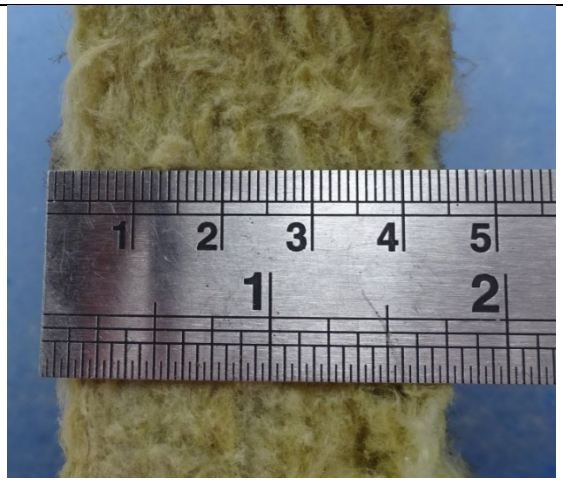


Figure 43: General view to confirm thickness of mineral wool insulation batt – 45mm.

Figure 44: General view to show pebble dash render finish with blockwork inner leaf.

Figure 45: Alternative view to show pebble dash render finish with blockwork inner leaf.

Figure 46: General view of a section of the blockwork inner leaf.

Figure 47: General view to show core hole drill bit at maximum depth drilling into blockwork inner leaf.

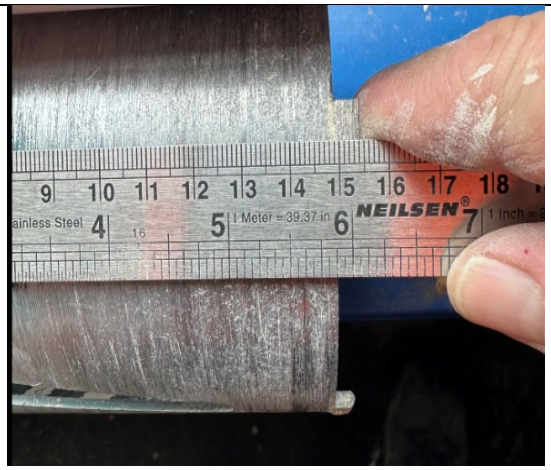


Figure 48: General view to show total depth of core hole drill bit – 150mm. Based upon the overall wall thickness and dimension of the other wall materials identified, the inner blockwork leaf is 200mm thick.

Figure 49: General view of internal sample location inside first floor Flat No. 354.

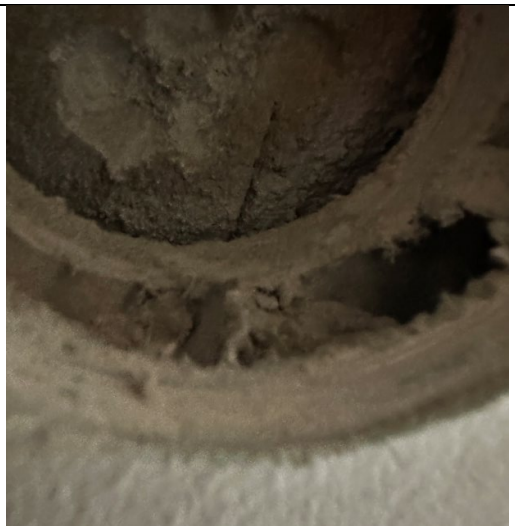


Figure 50: Close up view of the internal Paramount partition lining to the external wall.

Figure 51: General view to show void between inner blockwork leaf and Paramount partition lining board – 10mm.

Figure 52: Close up view of Paramount partition lining board which comprises of two layers of 10mm plasterboard with an 18mm honeycomb cardboard core.

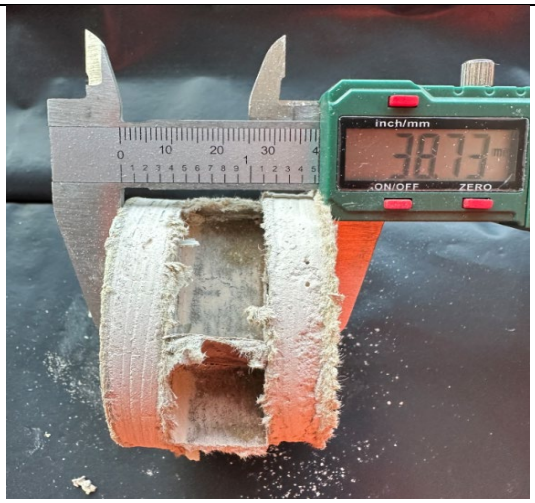


Figure 53: General view to confirm thickness of the Paramount partition lining board – 38mm.

Figure 54: General view to confirm thickness of internal window reveal – 155mm.

Figure 55: General view of Fire Door installed at the end of the open access balcony prior to entering the escape staircase.

Figure 56: General view to show Fire Door installed at the opposite end of the open access balcony prior to entering the escape staircase and the concrete soffit to the open access balcony.

	
Figure 57: General view of redundant core holes through concrete floor slab to the open access balconies, which require fire stopping works to be completed.	*Figure 58: General view of redundant core holes through concrete floor slab to the open access balconies, which require fire stopping works to be completed.*

5.3 Wall type #3 - Steni GRP Rainscreen Cladding Panels on Wimpey No Fines Concrete.

This wall type is present on the north elevation of Queens Court at first, second and third floor levels along the open access balconies approx. 15% of the surface area (Estimate).

The wall type consists of Steni GRP rainscreen cladding panels, a cavity void, mineral wool insulation batts at compartment floor locations, and a pebble dash cement render with a Wimpey no fines concrete substrate wall with a pebble dash cement render finish to the internal elevation along the open access balconies.

Table 12 :External wall system #4 build-up (Outside to inside).

Wall Type 3 - Steni GRP Rainscreen Cladding Panels on Wimpey No Fines Concrete	mm	Density* (kg/m^3)	Gross Calorific Value* (MJ/kg)	Surface reaction to fire class	Material volume (m^3/m^2)	Material mass (kg/m^2)	Fire load (MJ/m^2)
Steni Nature type F2 GRP rainscreen cladding panels	8	1960	11.8	B-s1,d0	0.008	15.68	185
Cavity void	40	0	0	-	0.015	0	0
Mineral Wool (Block)	50	140	0	A1	0.05	7	0
Cement Render	20	1650	0	A1	0.02	33	0
No-fines concrete slab	263	1750	0	A1	0.288	504	0
Cement Render	20	1650	0	A1	0.02	33	0
Note: ** - Indicates values may be actual or indicative.*						**Total fire load (MJ/m^2)**	185

5.3.1 Junctions, Cavities and Openings

The intrusive survey identified that a cavity exists behind the Steni GRP rainscreen facade, this cavity was partially filled with mineral wool insulation batts mechanically fixed to the concrete floor slab. Stainless steel helping hand brackets support the Steni GRP rainscreen cladding panels. The substrate behind the pebble dash render comprises of a Wimpy no fines concrete wall.

The cavity to the Steni GRP rainscreen cladding panels is continuous vertically and horizontally. A horizontal strip of mineral wool insulation batts has been mechanically

fixed to the concrete floor slab at compartment floor locations, but this is not fully in compression between the concrete floor slab and the rear of the GRP rainscreen cladding panels and therefore not suitable. In the event of a fire, fire and smoke would be able to pass up through the cavity to the rainscreen cladding.

In some locations, mainly to the external wall areas of the open access balconies, insulation had been omitted.

5.3.2 Initial Assessment Findings

The presence of the combustible Steni GRP rainscreen cladding panels results in this wall type having an indicative fire load value of 185 MJ/m2 indicates that a complete 'Basic' PAS 9980 assessment (Steps 3 to 5) is necessary for this wall type.

Figure 59: General view of External Wall Type #3

Figure 60: General view of compartment floor location to show no horizontal cavity barrier at compartment (Taken from Queens Court 2021).

Figure 61: Close up view of compartment floor detail, which shows mineral wool insulation installed at compartment floor location, but this does not fully fill the void behind the Steni GRP rainscreen cladding panel (Taken from Queens Court 2021).

Figure 62: Alternative view of compartment floor detail, which shows mineral wool insulation installed at compartment floor location, but this does not fully fill the void behind the Steni GRP rainscreen cladding panel and the concrete floor slab (Taken from Queens Court 2021).

Figure 63: Close up view to show pebble dash render, Wimpey no fine concrete, concrete floor slab and mineral wool insulation installed at compartment floor location (Taken from Queens Court 2021).

Figure 64: Alternative view to show pebble dash render, Wimpey no fine concrete, concrete floor slab and mineral wool insulation installed at compartment floor location (Taken from Queens Court 2021).

Figure 65: Close up view at compartment floor location to show that the mineral wool insulation does not fully fill the void and therefore does not form a suitable cavity barrier at compartment floor location (Taken from Queens Court 2021)

Figure 66: General view to show clear cavity between pebble dash render and the Steni GRP rainscreen cladding panel (Taken from Queens Court 2021).

Figure 67: General view of sample locations to open access balcony wall reveals at first floor level (Harold Court).

Figure 68: Close up view of Steni GRP rainscreen cladding panel installed over pebble dash render finish.

Figure 69: Close up view to show pebble dash render finish installed over Wimpey no fines concrete (Harold Court).

Figure 70: General view of pebble dash render finish to external wall of second floor open access balcony along the north elevation.

5.4 Wall type #4 – Solid uPVC Panels

This wall type is present on the north elevation of Queens Court at first, second and third floor levels along the open access balconies and at fourth floor level and to the south elevation at fourth floor level approx. 10% of the surface area (Estimate). The assessment for this wall type is based on visual product identification at Queens Court and the intrusive survey findings obtained from the visually identical sister block Harold Court.

The wall type consists of a solid white uPVC panel, a cavity void, a concrete block substrate with an internal cavity void and a Paramount partition board lining with a plaster skim finish.

Table 13: External wall system #5 build-up (Outside to inside).

Wall Type 4 - Solid White uPVC Panels	mm	Density* (kg/m^3)	Gross Calorific Value* (MJ/kg)	Surface reaction to fire class	Material volume (m^3/m^2)	Material mass (kg/m^2)	Fire load (MJ/m^2)
Solid uPVC Panel	20	1380	19.9	D-s3, d2	0.02	27.6	549
Cavity void	2	0	0	-	0.002	0	0
Concrete block	200	1450	0	A1	0.2	290	0
Cavity void	10	0	0	-	0.01	0	0
Paramount Partition board (Thickness = 1)	1	1528	16.1	A2-s1, d0	0.001	1.528	25

Plaster	1	1350	0	A1	0.001	1.35	0
Note: ** - Indicates values may be actual or indicative.*						**Total fire load (MJ/m^2)**	574

5.4.1 Junctions, Cavities and Openings

The intrusive survey identified that the solid uPVC panels are located between the kitchen windows and bathroom windows of the individual flats located along the open access balconies, which forms the main escape route from the flats.

5.4.2 Initial Assessment Findings

The presence of the combustible solid uPVC panels results in this wall type having an indicative fire load value of 574 MJ/m2 indicates that a complete 'Basic' PAS 9980 assessment (Steps 3 to 5) is necessary for this wall type.

Figure 71: General view of the solid uPVC panels installed along the open access balconies located along the north elevation.

Figure 72: General view of the sample location at first floor level (Harold Court).

Figure 73: Close up view of the sample location (Harold Court).

Figure 74: Close up view of the sample location (Harold Court).

Figure 75: Close up view to show 20mm solid uPVC panel (Harold Court).

Figure 76: General view to show EPS insulated panel installed at low level to flat entrance door to Flat No. 354 (Harold Court).

Figure 77: General view to show solid uPVC panels installed at fourth floor level along the north elevation.

Figure 78: Close up view of the solid uPVC panels installed at fourth floor level along the north elevation.

Figure 79: General view to show solid uPVC panels installed at fourth floor level along the south elevation.

Figure 80: Close up view of the solid uPVC panels installed at fourth floor level along the south elevation.

5.5 Wall type #5 -Traditional Masonry Cavity Wall.

This wall type applies to the two escape staircases located to the east and west elevations approx. 11% of the surface area (Estimate).

The wall type consists of two leaves of solid masonry construction with a clear cavity.

Table 14: External wall system #6 build-up (Outside to inside).

Wall Type 5 - Traditional Masonry Cavity Wall	mm	Density* (kg/m^3)	Gross Calorific Value* (MJ/kg)	Surface reaction to fire class	Material volume (m^3/m^2)	Material mass (kg/m^2)	Fire load (MJ/m^2)
Brick	100	1700	0	A1	0.1	170	0
Cavity void	60	0	0	-	0.07	0	0
Brick	100	1700	0	A1	0.1	170	0
Note: ** - Indicates values may be actual or indicative.*						**Total fire load (MJ/m^2)**	0

5.5.1 Junctions, Cavities and Openings

The intrusive survey identified that a clear cavity exists between the two leaves of masonry construction. The cavity is continuous vertically and horizontal with no cavity barriers observed during the inspection. However, the window openings are closed with the brickwork returning to close the cavity.

5.5.2 Initial Assessment Findings

As this wall type contains two leaves of masonry at least 100mm thick, with no combustible insulation, the resulting risk of fire spread is very low and therefore PAS 9980 Steps 3 to 5 are not applicable, and no further assessment of this wall type is required.

Therefore, the risk rating for external wall type #5 Is Low.

Figure 81: General view of the traditional masonry cavity wall construction to the escape staircase located on the east elevation.

Figure 82: Alternative view of the traditional masonry cavity wall construction to the escape staircase located on the east elevation.

Figure 83: General view of the wall construction to show brick inner leaf and brick outer leaf.

Figure 84: General view of the traditional masonry cavity wall construction to the escape staircase located on the west elevation.

Figure 85: Alternative view of the traditional masonry cavity wall construction to the escape staircase located on the west elevation.

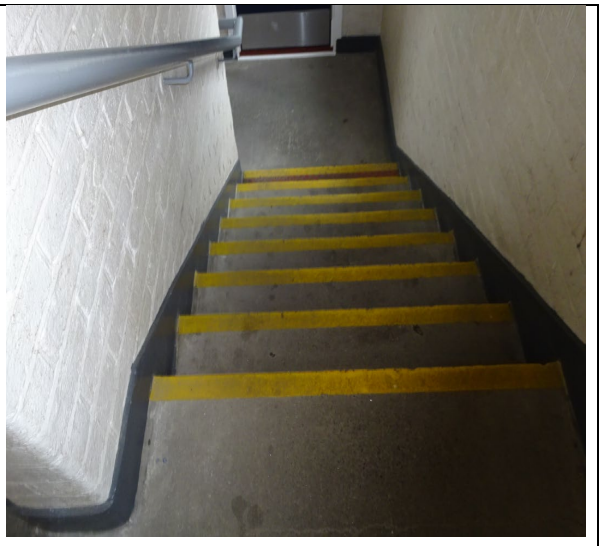


Figure 86: General view to show inner brick leaf and concrete escape staircase.

Figure 87: General view to show fire stopping works including ID labels completed to riser cupboards located in escape staircases (Albert Court).

Figure 88: Close up view to show fire stopping works including ID labels completed to riser cupboards located in escape staircases (Albert Court).

Figure 89: General view of sample location at compartment floor location located on north elevation.

Figure 90: Close up view to show concrete floor slab.

Figure 91: General view to show clear cavity below floor slab.

Figure 92: General view to confirm thickness of outer brickwork leaf – 100mm.

Figure 93: General view of window cill sample location to confirm that masonry wall closes the cavity.

Figure 94: General view to confirm thickness of clear cavity – 80mm.

	
Figure 95: General view to confirm thickness outer brickwork leaf to window cill – 100mm.	*Figure 96: General view to show clear cavity.*

5.6 Wall type #6 – Traditional Masonry Cavity Wall.

This wall type is present only along the south elevation to the 3 No. ground floor flats that were constructed in 1995 when the building was thermally upgraded approx. 9% of the surface area (Estimate).

No internal access was available to the ground floor flats; it is therefore assumed that the internal leaf is concrete blockwork with an unknown cavity insulation with an external leaf comprising of facing brickwork. As this wall type is only single storey at ground level the wall build-up is not critical and does not justify further intrusive inspections.

Table 15: External wall system #7 build-up (Outside to inside).

Wall Type 6 - Traditional Masonry Cavity Wall (Ground Floor Flats)	mm	Density* (kg/m^3)	Gross Calorific Value* (MJ/kg)	Surface reaction to fire class	Material volume (m^3/m^2)	Material mass (kg/m^2)	Fire load (MJ/m^2)
Brick	100	1700	0	A1	0.1	170	0
Cavity void	75	0	0	-	0.075	0	0
Concrete block	125	1450	0	A1	0.125	181.25	0
Plaster	15	1350	0	A1	0.015	20.25	0
Note: ** - Indicates values may be actual or indicative.*						**Total fire load (MJ/m^2)**	0

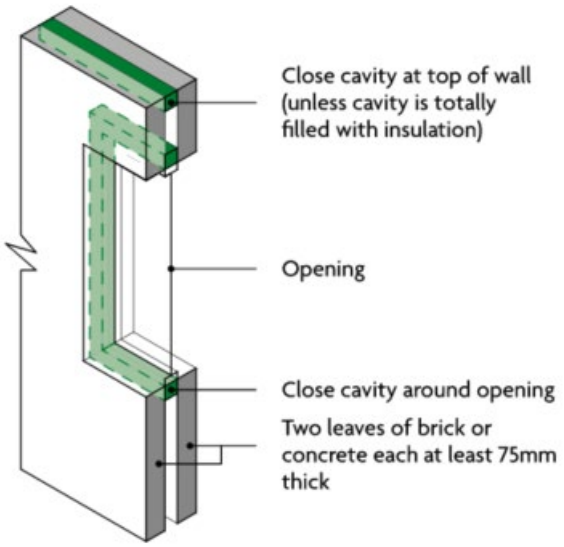
5.5.3 Junctions, Cavities and Openings

No intrusive survey was undertaken of this wall type, only a visual external inspection. The cavity wall appeared to be closed off around window openings by the brickwork returning to the window reveals.

5.5.4 Initial Assessment Findings

The presence of combustible insulation within this wall type is permitted within the ADB guidance document both at the time of construction and today by virtue of an exception for double skin masonry walls:

10.7 In buildings that include a 'residential' purpose (purpose groups 1 and 2) with a storey 11m or more in height (see Diagram D6 in Appendix D) any insulation product, filler material (such as the core materials of metal composite panels, sandwich panels and window spandrel panels but not including gaskets, sealants and similar) etc. used in the construction of an external wall should be class A2-s1, d0 or better (see Appendix B). This restriction does not apply to masonry cavity wall construction which complies with Diagram 8.2 in Section 8. Where regulation 7(2) applies, that regulation prevails over all the provisions in this paragraph.



If this wall type did contain combustible insulation enclosed within two leaves of masonry at least 100mm thick, the resulting risk of fire spread is very low and therefore PAS 9980 Steps 3 to 5 are not applicable, and no further assessment of this wall type is required.

Therefore, the risk rating for external wall type #6 Is **Low.**

Figure 97: General view of the traditional masonry cavity wall construction to the ground floor flats along the south elevation.

Figure 98: Alternative view of the traditional masonry cavity wall construction to the ground floor flats along the south elevation.

Figure 99: Alternative view of the traditional masonry cavity wall construction to the ground floor flats along the south elevation.

Figure 100: Alternative view of the traditional masonry cavity wall construction to the ground floor flats along the south elevation.

5.6 Wall type #7 - Reinforced Concrete Wall.

This wall type is present to the north elevation at ground floor level and covers approx. 3% of the surface area and is in the form of a non-combustible Reinforced Concrete (RC) frame and as such is low risk.

Table 16: External wall system #8 build-up (Outside to inside).

Wall Type 7 - Reinforced Concrete Wall	mm	Density* (kg/m^3)	Gross Calorific Value* (MJ/kg)	Surface reaction to fire class	Material volume (m^3/m^2)	Material mass (kg/m^2)	Fire load (MJ/m^2)
Concrete slab	300	2400	0	A1	0.3	720	0
Note: ** - Indicates values may be actual or indicative.*						**Total fire load (MJ/m^2)**	0

5.6.1 Junctions, Cavities and Openings

The intrusive survey identified the nature of the wall build-up as being a solid Reinforced Concrete frame, this build-up separates the garages underneath, the middle dividing wall between a “pair” of garages is a solid masonry wall.

5.6.2 Initial Assessment Findings

The presence of no combustible insulation and the fact the wall built-up is reinforced concrete. There is no risk of the system acting as a medium for fire. The configuration results in this wall type having an indicative fire load value of 0 MJ/m2 and indicates that

a complete ‘Basic’ PAS 9980 assessment (Steps 3 to 5) is not necessary for this wall type.

Therefore, the risk rating for external wall type #7 Is **Low.**

Figure 101: General view of the reinforced concrete wall to the north elevation at ground floor level, showing sample location.

Figure 102: Close up view of the sample location to confirm solid concrete shear wall (Harold Court).

Figure 103: General view of the reinforced concrete frame and concrete floor to the north elevation. NB. that the garages are recessed back from the main elevation.

Figure 104: Alternative view of the reinforced concrete frame and concrete floor to the north elevation. NB. that the garages are recessed back from the main elevation.

Figure 105: General view of the reinforced concrete wall to the north elevation at ground floor level.

Figure 106: General view to show solid masonry wall located between garages.

5.7 External Wall Attachments

Queens Court has decorative architectural steel attachments – These attachments are made from non-combustible materials and should not contribute to the spread of fire.

The decorative steel attachments are present to the north elevation at third and fourth floor levels and to the south elevation at second, third and fourth floor levels.

5.7.1 Initial Assessment Findings

The decorative architectural steel attachments are of powder coated steel construction, measuring 50mm x 50mm.

Therefore, the risk rating for the decorative steel attachments is **Low.**

Figure 107: General view of the decorative architectural steel attachments installed to the north elevation.

Figure 108: Alternative view of the architectural decorative steel attachments installed to the north elevation.

Figure 109: General view of the decorative architectural steel attachments installed to the south elevation.

Figure 110: Alternative view of the decorative architectural steel attachments installed to the south elevation.

Figure 111: Close up view of the decorative architectural steel attachments installed (Albert Court).

Figure 112: Close up view of the decorative architectural steel attachments installed (Albert Court).

6 PAS 9980 Step 3 - Identify and group factors that are significant in determining the risk.

The presence of combustible rainscreen cladding, uPVC panels and the omission of suitable cavity barriers at compartment floor and wall locations within the external wall system present on the majority of the building, means that the resulting risk of fire spread requires further consideration using the full PAS 9980 FRAEW process.

Using the Risk Factors guidance in Annexes K, N & F of PAS 9980, the following relevant risk factors were identified for the Steni GRP rainscreen cladding panel and solid uPVC panel wall types. Consideration of the Risk Factors for each Risk Factor Group is given in the tables below.

Note: Those risk factors that have been omitted from the tables below have been considered as not relevant to the wall type being assessed.

6.1 Risk Factor Rating – Steni GRP Rainscreen Cladding Panels on Wimpey No Fines Concrete.

Table 17: Fire Performance Risk Factors – Steni GRP Rainscreen Cladding Panels on Wimpey No Fines Concrete.

Wall Type 1 - Steni GRP Rainscreen Cladding Panels on Wimpey No Fines Concrete.		**Rating**	**Comments / justification**
Fire performance Risk Factors (Annex K, Table K1)		-	
Section K1	**Calorific Value (MJ/kg), or Fire load per unit area (MJ/m2)**	Strongly negative	Indictive Fire load per unit area of 210 MJ/m2
Section K2	**External Surfaces: Reaction to fire class**	Slightly Positive	The Steni GRP rainscreen cladding panels have a surface reaction to fire of B-s1, d0.
Section K3	**Facings/cladding panels**	-	-
	Fixings	Positive	The Steni GRP rainscreen cladding panels are mechanically fixed (riveted) to stainless steel helping hands which are bolted to the Wimpey no fines concrete walls.

	Other materials	Neutral	The Steni GRP rainscreen cladding panels have a surface reaction to fire of B-s1, d0.
Section K4	**Panel Construction**	Negative	Gaps in the GRP panels are generally > 10mm.
Section K5	**Cavities**	Negative	The Steni GRP rainscreen cladding panels have a surface reaction to fire of B-s1, d0. However, the Class B rating applies only to the outer stone chip covered surface, the facing in the cavity is GRP and likely to be more combustible.
		Negative	A cavity is present behind the Steni GRP rainscreen cladding panels with no horizontal cavity barriers at compartment floor locations, vertical cavity barriers have been installed in some locations at compartment wall locations, but these are not fully in compression and therefore are unsuitable.
Section K6	**Insulation**	Positive	Insulation within the cavity is mineral wool batt.
Section K7	**Substrate**	Strongly positive	Substrate comprises of a 20mm cement pebble dash render with a masonry Wimpey no fines concrete wall.

Table 18: Façade Configuration Risk Factors – Steni GRP Rainscreen Cladding Panels on Wimpey No Fines Concrete.

Façade Configuration Risk Factors (Annex N, Table N1)		-	-
Section N1	**Building height**	Neutral	Building height is approx.11.20m to the uppermost occupied floor level.
Section N2	**Height of base of cladding above ground**	Neutral	Steni GRP rainscreen cladding commences at first floor level.

Section N3	**Extent of cladding**	Negative	All of the façade is covered with the Steni GRP rainscreen cladding except ground floor level and the escape staircases.
Section N4	**Cavities**		-
		Negative	Cavities are vertically and horizontally open with no horizontal cavity barriers present and where vertical cavity barriers have been installed at compartment wall locations, these are unsuitable due to not being fully in compression or missing.
Section N8	**Proximity to windows and other openings to the accommodation**	Negative	Windows are vertically in line and horizontally adjacent to the Steni GRP rainscreen cladding.
Section N9	**Presence of vents or other openings for services in the façade**	Negative	Vents which pass through the cavity have not been fire stopped in some locations.
Section N11	**Attachments**	Neutral	The decorative architectural attachments are non-combustible.

Table 19: Fire Strategy and Hazards Risk Factors – Steni GRP Rainscreen Cladding Panels on Wimpey No Fines Concrete.

Fire Strategy and Hazards Risk Factors (Annex F, Table F1)		-	-
Section F1	**Occupancy**	Neutral	General needs housing.
Section F2	**Evacuation strategy**	Neutral	Stay put evacuation policy.
Section F3	**Escape route design**	Negative	Two escape staircases located at either end of the building. Both staircases are constructed with two leaves of solid masonry construction. However, the open access balconies contain significant amounts of combustible cladding materials.

Section F4	**Compartmentation**	Neutral	FRA denotes compartmentation as adequate.
Section F6	**Fire detection and fire alarm system**	Neutral	FRA denotes that flats are provided with a Category LD3 system.
Section F8	**Firefighting facilities**	Neutral	Adequate access for the Fire & Rescue Service to the elevation where the open access balconies are located.
Section F11	**Specific fire hazards**	Slightly negative	Vehicles park under the combustible Steni GRP rainscreen cladding panels.

6.2 Risk Factors Rating – Steni GRP Rainscreen Cladding Panels on Concrete Blockwork.

Table 20: Fire Performance Risk Factors – Steni GRP Rainscreen Cladding Panels on Concrete Blockwork.

Wall Type 2 - Steni Rainscreen Cladding Panels on Concrete Blockwork		**Rating**	**Comments / justification**
Fire performance Risk Factors (Annex K, Table K1)		-	
Section K1	**Calorific Value (MJ/kg), or Fire load per unit area (MJ/m2)**	Strongly negative	Indictive Fire load per unit area of 210 MJ/m2
Section K2	**External Surfaces: Reaction to fire class**	Slightly Positive	The Steni GRP rainscreen cladding panels have a surface reaction to fire of B-s1, d0.
Section K3	**Facings/cladding panels**	-	-
	Fixings	Positive	The Steni GRP rainscreen cladding panels are mechanically fixed (riveted) to stainless steel helping hands which are bolted to the blockwork walls.
	Other materials	Neutral	The Steni GRP rainscreen cladding panels have a surface reaction to fire of B-s1, d0.

Section K4	**Panel Construction**	Neutral	Gaps in the GRP panels are typically 10mm.
Section K5	**Cavities**	Negative	The Steni GRP rainscreen cladding panels have a surface reaction to fire of B-s1, d0. However, the Class B rating only applies to the outer stone chip covered surface, the facing into the cavity is GRP and likely to be more combustible.
		Neutral	The non-combustible insulation fully fills the void; therefore, no cavity barriers are required.
Section K6	**Insulation**	Positive	Insulation within the cavity is mineral wool batt.
Section K7	**Substrate**	Strongly positive	Substrate comprises of a 20mm cement pebble dash render with a 200mm masonry blockwork wall.

Table 21: Façade Configuration Risk Factors – Steni GRP Rainscreen Cladding Panels on Concrete Blockwork.

Façade Configuration Risk Factors (Annex N, Table N1)		-	-
Section N1	**Building height**	Neutral	Building height is approx.11.20m to the uppermost occupied floor level.
Section N2	**Height of base of cladding above ground**	Slightly negative	Steni GRP rainscreen cladding is installed at low level below the kitchen & bathroom windows.
Section N3	**Extent of cladding**	Neutral	Steni GRP rainscreen cladding is installed at low level below the kitchen & bathroom windows along the open access balconies.
Section N4	**Cavities**	Positive	The void between the pebble dash render and Steni GRP rainscreen cladding panel is fully filled with mineral wool insulation batt.
Section N8	**Proximity to windows and other openings to the accommodation**	Negative	Steni GRP rainscreen cladding is installed at low level below the kitchen & bathroom windows along the open access balconies.

Section N10	**Proximity of combustible elements of a façade to escape route windows and other openings**	Negative	Steni GRP rainscreen cladding is installed at low level below the kitchen & bathroom windows along the open access balconies, which could prevent access to the escape staircases.

Table 22: Fire Strategy Risk Factors – Steni GRP Rainscreen Cladding Panels on Concrete Blockwork.

Fire Strategy and Hazards Risk Factors (Annex F, Table F1)	-	As previous wall type (Building-wide Risk Factors)

6.3 Risk Factors Rating – Steni GRP Rainscreen Cladding Panels on Wimpey No Fines Concrete.

Table 23: Fire Performance Risk Factors – Steni GRP Rainscreen Cladding Panels on Wimpey No Fines Concrete.

Wall Type 3 - Steni Rainscreen Cladding Panels on Wimpey No Fines Concrete		**Rating**	**Comments / justification**
Fire performance Risk Factors (Annex K, Table K1)		-	
Section K1	**Calorific Value (MJ/kg), or Fire load per unit area (MJ/m2)**	Strongly negative	Indictive Fire load per unit area of 185 MJ/m2
Section K2	**External Surfaces: Reaction to fire class**	Slightly Positive	The Steni GRP rainscreen cladding panels have a surface reaction to fire of B-s1, d0.
Section K3	**Facings/cladding panels**	-	-
	Fixings	Positive	The Steni GRP rainscreen cladding panels are mechanically fixed (riveted) to stainless steel helping hands which are bolted to the Wimpey no fines concrete walls.
	Other materials	Neutral	The Steni GRP rainscreen cladding panels have a surface reaction to fire of B-s1, d0.

Section K4	**Panel Construction**	Negative	Gaps in the GRP panels are generally 10mm to 20mm.
Section K5	**Cavities**	Negative	The Steni GRP rainscreen cladding panels have a surface reaction to fire of B-s1, d0. However, the Class B rating only applies to the outer stone chip covered surface, the facing into the cavity is GRP and likely to be more combustible.
		Negative	A cavity is present behind the Steni GRP rainscreen cladding panels with no vertical cavity barriers at compartment wall locations, horizontal cavity barriers have been installed in some locations at compartment floor locations, but these are not fully in compression and therefore are unsuitable.
Section K6	**Insulation**	Positive	A combination of no insulation and mineral wool insulation batt installed at compartment floor locations.
Section K7	**Substrate**	Strongly positive	Substrate comprises of a 20mm cement pebble dash render with a solid masonry Wimpey no fines concrete wall.

Table 24: Façade Configuration Risk Factors – Steni GRP Rainscreen Cladding Panels on Wimpey No Fines Concrete.

Façade Configuration Risk Factors (Annex N, Table N1)		-	-
Section N1	**Building height**	Neutral	Building height is approx.11.20m to the uppermost occupied floor level.
Section N2	**Height of base of cladding above ground**	Neutral	Steni GRP rainscreen cladding commences at first floor level.
Section N3	**Extent of cladding**	Negative	All of the façade is covered with the Steni GRP rainscreen cladding except ground floor level and the escape staircases.
Section N4	**Cavities**	-	-

		Negative	Cavities are vertically and horizontally open with no vertical cavity barriers present and where horizontal cavity barriers have been installed at compartment floor locations, these are unsuitable due to not being fully in compression or missing.
Section N8	**Proximity to windows and other openings to the accommodation**	Negative	Openings along the open access balcony are vertically in line and horizontally adjacent to the Steni GRP rainscreen cladding.
Section N10	**Proximity of combustible elements of a façade to escape route windows and other openings**	Negative	Steni GRP rainscreen cladding is installed along the open access balconies which could prevent access to the escape staircases.
Section N11	**Attachments**	Neutral	The decorative architectural attachments are non-combustible.

Table 25: Fire Strategy Risk Factors – Steni GRP Rainscreen Cladding Panels on Wimpey No Fines Concrete.

Fire Strategy and Hazards Risk Factors (Annex F, Table F1)	-	As previous wall type (Building-wide Risk Factors)

6.4 Risk Factors Rating – Solid uPVC Panels.

Table 26: Fire Performance Risk Factors – Solid uPVC Panels.

Wall Type 4 - Solid White uPVC Panels		**Rating**	**Comments / justification**
Fire performance Risk Factors (Annex K, Table K1)		-	
Section K1	**Calorific Value (MJ/kg), or Fire load per unit area (MJ/m2)**	Strongly negative	Indictive Fire load per unit area of 574 MJ/m2
Section K2	**External Surfaces: Reaction to fire class**	Negative	The solid uPVC panels have a surface reaction to fire of D-s3, d2.
Section K3	**Facings/cladding panels**	-	-
	Fixings	Neutral	The solid uPVC panels are retained in a uPVC frame.
	Other materials	Negative	The solid uPVC panels have a surface reaction to fire of D-s3, d2.
Section K4	**Panel Construction**	Slightly Positive	The uPVC panels are solid panels with no gaps around them.
Section K5	**Cavities**	Negative	The solid uPVC panels have a surface reaction to fire of D-s3, d2.
Section K6	**Insulation**	Positive	No insulation.
Section K7	**Substrate**	Strongly positive	Substrate comprises of a 200mm masonry blockwork wall.

Table 27: Façade Configuration Risk Factors – Solid uPVC Panels.

Façade Configuration Risk Factors (Annex N, Table N1)		-	
Section N1	**Building height**	Neutral	Building height is approx.11.20m to the uppermost occupied floor level.

Section N2	**Height of base of cladding above ground**	Slightly negative	The solid uPVC panels are installed between the kitchen & bathroom windows.
Section N3	**Extent of cladding**	Neutral	The solid uPVC panels are installed between the kitchen & bathroom windows along the open access balconies.
Section N8	**Proximity to windows and other openings to the accommodation**	Neutral	The solid uPVC panels are installed between the kitchen & bathroom windows along the open access balconies.
Section N10	**Proximity of combustible elements of a façade to escape route windows and other openings**	Negative	The solid uPVC panels are installed along the open access balconies which could prevent access to the escape staircases.

Table 28: Fire Strategy Risk Factors – Solid uPVC Panels.

Fire Strategy and Hazards Risk Factors (Annex F, Table F1)	-	As previous wall type (Building-wide Risk Factors)

7 PAS 9980 Step 4 - Risk Factor Groups Contribution to Overall Risk.

Using the individually weighted Risk Factor Ratings from the tables above, the Risk Factor Group overall ratings have been determined as shown in the tables below.

7.1 Overall Risk Rating – Steni GRP Rainscreen Cladding Panels on Wimpey No Fines Concrete.

Table 29: Risk Factor Group Overall Ratings – Steni GRP Rainscreen Cladding Panels on Wimpey No Fines Concrete.

Risk Factor Groups overall rating - Wall Type 1 - Steni GRP Rainscreen Cladding Panels on Wimpey No Fines Concrete.			
	Key risk factors identified.		**Overall group rating**
Risk Factor Group	**Strongly Negative**	**Strongly Positive**	
Fire performance	Indictive Fire load per unit area of 210 MJ/m2	Substrate comprises of a 20mm cement pebble dash render with a masonry Wimpey no fines concrete wall.	Strongly negative
Façade configuration	No Strongly Negative factors. All of the façade is covered with the Steni GRP rainscreen cladding except ground floor level and the escape staircases. Cavities are vertically and horizontally open with no horizontal cavity barriers present and where vertical cavity barriers have been installed at compartment wall locations, these are unsuitable due to not being fully in compression or missing. Windows are vertically in line and horizontally adjacent to the Steni GRP rainscreen cladding.	No Strongly Positive factors.	Negative

	Vents which pass through the cavity have not been fire stopped in some locations.		
Fire strategy & hazards	No Strongly Negative factors. Access to both stairs is via the open balcony approach substantially covered with combustible GRP cladding and with combustible uPVC infill panels on the external walls to the Flats.	No Strongly Positive factors. Adequate access for the Fire & Rescue Service to the elevation where the open access balconies are located.	Negative

7.2 Overall Risk Rating – Steni GRP Rainscreen Cladding Panels on Concrete Blockwork.

Table 30: Risk Factor Group Overall Ratings – Steni GRP Rainscreen Cladding Panels on Concrete Blockwork.

Risk Factor Groups overall rating - Wall Type 2 - Steni Rainscreen Cladding Panels on Concrete Blockwork			
	Key risk factors identified.		**Overall group rating**
Risk Factor Group	**Strongly Negative**	**Strongly Positive**	
Fire performance	Indictive Fire load per unit area of 210 MJ/m2.	Substrate comprises of a 20mm cement pebble dash render with a 200mm masonry blockwork wall.	Negative

Façade configuration	No Strongly Negative factors. Steni GRP rainscreen cladding is installed at low level below the kitchen & bathroom windows along the open access balconies. Steni GRP rainscreen cladding panels are installed at low level below the kitchen & bathroom windows along the open access balconies, which could prevent access to the escape staircases.	No Strongly Negative factors. The void between the pebble dash render and Steni GRP rainscreen cladding panel is fully filled with mineral wool insulation batt.	Neutral
Fire strategy & hazards	As previous wall type	As previous wall type	Negative

7.3 Overall Risk Rating – Steni GRP Rainscreen Cladding Panels on Wimpey No Fines Concrete.

Table 31: Risk Factor Group Overall Ratings – Steni GRP Rainscreen Cladding Panels on Wimpey No Fines Concrete.

Risk Factor Groups overall rating - Wall Type 3 - Steni Rainscreen Cladding Panels on Wimpey No Fines Concrete			
	Key risk factors identified.		Overall group rating
Risk Factor Group	Strongly Negative	Strongly Positive	
Fire performance	Indictive Fire load per unit area of 185 MJ/m2. A cavity is present behind the Steni GRP rainscreen cladding panels with no vertical cavity barriers at compartment wall locations, horizontal cavity barriers have been installed in some locations at compartment floor locations, but these are not fully in compression and therefore are unsuitable.	Substrate comprises of a 20mm cement pebble dash render with a solid masonry Wimpey no fines concrete wall.	Negative
Façade configuration	All of the façade is covered with the Steni GRP rainscreen cladding except ground floor level and the escape staircases. Cavities are vertically and horizontally open with no vertical cavity barriers present and where horizontal cavity barriers have been installed at compartment floor locations, these are unsuitable due to not being fully in compression or missing. The combustible Steni GRP cladding panels are located along the open access balconies.	The decorative architectural attachments are non-combustible.	Negative
Fire strategy & hazards	As previous wall type	As previous wall type	Negative

Overall Risk Rating – Solid White uPVC Panels

Table 32: Risk Factor Group Overall Ratings – Solid White uPVC Panels.

Risk Factor Groups overall rating – Wall Type 4 - Solid White uPVC Panels			
	Key risk factors identified.		**Overall group rating**
Risk Factor Group	**Strongly Negative**	**Strongly Positive**	
Fire performance	Indictive Fire load per unit area of 574 MJ/m2 .	Substrate comprises of a 200mm masonry blockwork wall.	Neutral
Façade configuration	No Strongly Negative factors. The combustible solid uPVC panels are located along the open access balconies.	No Strongly Positive factors.	Negative
Fire strategy & hazards	As previous wall type	As previous wall type	Negative

8 PAS 9980 Step 5 - Evaluation against Benchmark Risk-based Criteria.

In the context of the PAS 9980 risk-based approach, the risk in question is the combination of all of the following:

1. the likelihood of undue speed of fire spread over the external walls of the building; and
2. the likely consequences, namely the resultant occurrence and extent of secondary fires on other floor levels; and
3. the likely consequences in terms of evacuation before the onset of untenable conditions in the escape routes, whether evacuation is intended to occur immediately on the warning of fire or, in the case of a stay put strategy, at some point during the course of the fire; and
4. the likelihood of effective intervention by the fire and rescue service at a point before all of the above occur.

The Risk Factor ratings from the tables above and their evaluation against the four benchmark risk criteria and their corresponding success criteria as defined in PAS 9980, are now shown within the table overpage.

Table 33: Consideration of Benchmark Criteria.

Evaluation of building against benchmark criteria.				Assessment for Queens Court		
				Most significant Risk Factors		
	Risk based benchmark criteria	Benchmark success criteria.	Risk Factor Group	Strongly Negative	Strongly Positive	Is success criteria met & why?
1	The likelihood of undue speed of fire spread over the external walls of the building; and	Fire spread is likely to result in only limited secondary fires and/or either occur at a rate within expectations for a building of this height, or at a higher but still tolerable rate, given the circumstances at the building in question; and/or	*Fire performance*	Indictive Fire load per unit area of 210 MJ/m2 Indictive Fire load per unit area of 210 MJ/m2 Indictive Fire load per unit area of 210 MJ/m2 Indictive Fire load per unit area of 185 MJ/m2	Substrate comprises of a 20mm cement pebble dash render with a masonry Wimpey no fines concrete wall.Substrate comprises of a 20mm cement pebble dash render with a 60mm masonry blockwork wall.Substrate comprises of a 20mm cement pebble dash render with a 200mm masonry blockwork wall.Substrate comprises of a 20mm cement pebble dash render with a solid masonry Wimpey no fines concrete wall.	No. Given the combustibility of the Steni GRP rainscreen cladding, the combustible solid uPVC panels and the presence of unsuitable cavity barriers or no cavity barriers witnessed during our intrusive surveys it is deemed to not have met the benchmark criteria.
			Façade config.	No Strongly Negative risk factors.	No Strongly Positive risk factors.	

2	The likely consequences, namely the resultant occurrence and extent of secondary fires on other floor levels; and	Occupants in places to which fire has spread are not unduly harmed, or prevented from escaping, by the time such secondary fires occur; and/or	*Fire performance*	Indictive Fire load per unit area of 210 MJ/m2 Indictive Fire load per unit area of 210 MJ/m2 Indictive Fire load per unit area of 210 MJ/m2 Indictive Fire load per unit area of 185 MJ/m2	Substrate comprises of a 20mm cement pebble dash render with a masonry Wimpey no fines concrete wall.Substrate comprises of a 20mm cement pebble dash render with a 60mm masonry blockwork wall.Substrate comprises of a 20mm cement pebble dash render with a 200mm masonry blockwork wall.Substrate comprises of a 20mm cement pebble dash render with a solid masonry Wimpey no fines concrete wall.	No. The escape routes along the open access balconies located on the first, second and third floors are clad in the same Steni GRP rainscreen cladding panels along with soild uPVC panels which are also combustible, in the event of a secondary fire this could prevent access to the escape staircases.
			Façade config.	No Strongly Negative risk factors.	No Strongly Positive risk factors.	

3	The likely consequences in terms of evacuation before the onset of untenable conditions in the escape routes, whether evacuation is intended to occur immediately on the warning of fire or, in the case of a stay put strategy, at some point during the course of the fire; and	Secondary fires do not compromise the communal means of escape before those needing to use the escape routes have left the building; and/or	*Façade config.*	No Strongly Negative risk factors.	No Strongly Positive risk factors.	No. The escape routes along the open access balconies located on the first, second and third floors are clad in the same Steni GRP rainscreen cladding panels along with soild uPVC panels which are also combustible, in the event of a secondary fire this could prevent access to the escape staircases. However, fire doors are installed at the end of the open access balconies prior to accessing the escape staircases which are constructed with two leaves of soild masonry >75mm thick construction and solid concrete steps and floors.
			Fire strategy & hazards	No Strongly Negative factors. Two escape staircases located at either end of the building. Both staircases are constructed with two leaves of solid masonry construction. However, the open access balconies contain significant amounts of combustible cladding materials.	No Strongly Positive factors.	

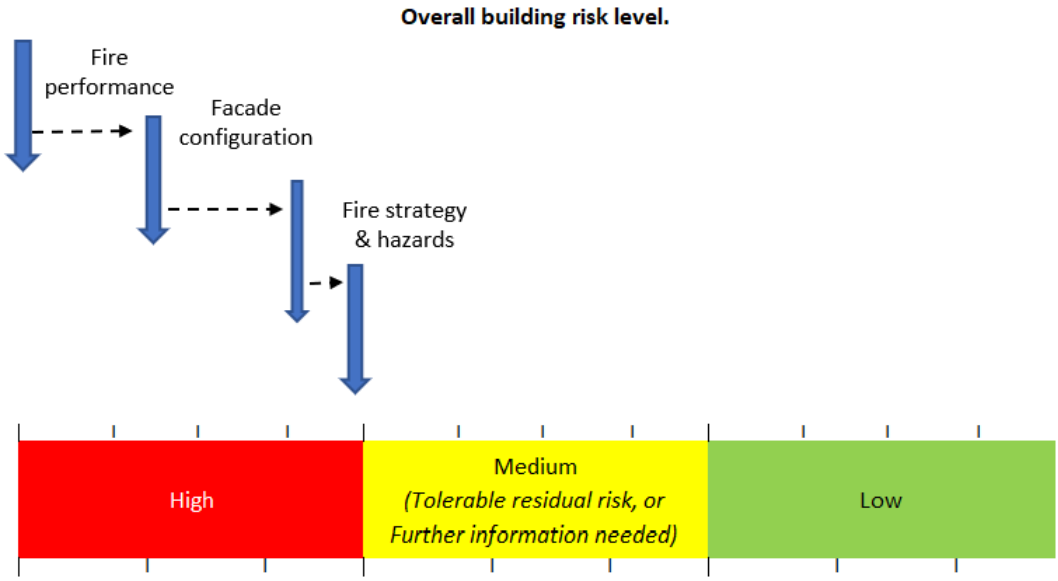
4	The likelihood of effective intervention by the fire and rescue service at a point before all of the above occur.	Fire and rescue service intervention is likely to be effective in avoiding undue secondary fires, or in ensuring that occupants at risk are not prevented from escaping or can be rescued.	*Fire strategy & hazards*	No Strongly Negative factors. Two escape staircases located at either end of the building. Both staircases are constructed with two leaves of solid masonry construction. However, the open access balconies contain significant amounts of combustible cladding materials.	No Strongly Positive factors.	No. Due to the combustible Steni GRP rainscreen cladding and lack of suitable cavity barriers at compartation lines and combustible uPVC panels located along the open access balconies external wall fire spread could exceed the ability of the Fire and Rescue Service to deal with the spread of fire and the potential need to assist residents to escape. There is adequate access to the north elevation of the building, where the open access balconies are located for the Fire and Rescue Service, with restricted access to the east, south and west elevations.

8.1 Overall Risk Level Assessment.

Using professional judgment applied to the results from the Risk Factor Group analysis and the consideration against Benchmark Criteria gives an overall risk rating for the building as a whole of **High**, as shown diagrammatically below.

Due to the height of the building, the risk level is judged to be at the very lower end of the 'high' band, but within the 'high' band due to the extent of the combustible Steni GRP rainscreen cladding panels, the lack of suitable cavity barriers at compartment wall and floor locations and the combustible GRP and uPVC cladding panels located along the open access balconies, which could potentially compromise the escape routes.

Figure 113: External wall overall fire risk level.



9 Conclusion

The external walls at Queens Court consist of combustible materials; the Steni GRP rainscreen cladding panels and the solid white uPVC panels, are considered to support fire spread that could be unduly rapid, there is a significant likelihood for secondary fires to occur, over and above the progressive manner that might be expected from window opening to window opening of the floor above the fire.

If fire did occur within the building and which involved the external wall system in some manner, it is possible that escape routes provided in the building could become unusable to occupants within a relatively short space of time. This risk applies to the open access balconies, located at first, second and third floor levels, due to them being clad with combustible Steni GRP rainscreen cladding panels and combustible solid white uPVC panels located between the kitchen and bathroom windows.

If fire did occur within the building and which involved the external wall system in some manner, it is possible that escape routes along the open access balconies at first, second and third floor levels could become unusable to occupants within a relatively short space of time.

This fire risk appraisal of the external wall construction has concluded that the level of fire risk relating to the likelihood of fire spread over, and or within, the external wall to be **High**, see figure 111 for overall risk rating.

Therefore, risk reduction measures will be required and are considered in the following section.

10 Recommendations

Any recommended risk reduction actions must be proportionate to the risk so as to not involve excessive cost or disruption.

In considering the range of potential risk reduction measures, the following factors were taken into account:

a. All elevations are clad with the combustible Steni GRP rainscreen cladding panels.

b. Escape routes along the open access balconies, located at first, second and third floor levels could be made untenable by a cladding fire.

c. The absence of cavity barriers at compartment floor locations and unsuitable cavity barriers at compartment wall locations gives the potential for excessively rapid fire spread across multiple floors and flats.

d. Removal of the Steni GRP rainscreen cladding panels and solid white uPVC panels from only the open access balcony façades would not reduce the risk of rapid fire spread over other elevations of the building. We did consider just undertaking remediation works to replace only the combustible cladding systems to the open access balconies, as once the combustible materials are removed from the escape routes, the risk level would be a Tolerable risk especially with 2 No. escape staircases. However, given the fact that major remediation works are to be undertaken to the building, this would justify bringing the rest of the combustible cladding into compliance with current AD B requirements i.e. external surface A2-s1,d0 or better for buildings over 11m.

e. There is adequate access for the Fire & Rescue Service to the north elevation where the open access balconies are located and restricted access to the east, south and west elevations of the building.

Taking account of the factors above, it is concluded that the proportionate risk reduction approach is to remove all the combustible Steni GRP rainscreen cladding panels and solid white uPVC panels installed to the building. The specific recommendations are as follows:

1. It is recommended that this appraisal report is provided to the building's fire risk assessor, to assist those persons in concluding the overall fire risk level within the building.

2. Remove the combustible Steni GRP rainscreen cladding panels from all elevations and replace with a cladding system using materials which are non-combustible or of limited combustibility (Euroclass A2-s1, d0 or better).

3. Remove the combustible solid white uPVC panels and replace with a cladding system using materials which are non-combustible or of limited combustibility (Euroclass A2-s1, d0 or better).

4. Where cavities are present in any replacement cladding system, ensure suitable cavity barriers are installed at compartment floor and compartment wall lines, wall edges, around vent penetrations and around window openings.

5. If not already in place, it is suggested to document a Fire Safety Management Plan for Queens Court.
6. This FRAEW should be reviewed in the following circumstances:
    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 more definitive information on the fire performance data relied upon in this FRAEW becomes available subsequent to the FRAEW, such information should take precedence.

Should the above remedial works be undertaken, specifically those set out in Recommendation 2, 3 and 4 above, subject to the works being completed to a satisfactory standard, we would expect the overall risk rating to be reduced to: **Low**

11 Interim risk reduction measures

Consideration was given to the need to provide a temporary enhanced fire alarm system until the cladding is remediated, however, as the overall fire risk level for the building is at the very low end of the high risk band, it is considered that this doesn't justify the installation of a temporary fire alarm system that supports a simultaneous evacuation strategy.

Formal written notification to residents to advise of the building defects and reaffirm B3Living Ltd's fire policy and procedures.

Inform Essex Fire and Rescue Service of the building defects.

Appendix A – Supporting Information

Table A1: List of information received / reviewed:

Ref No.	Document Title	Version	Date	Author
A1	Fire Risk Assessment.	Ref: 0391669.	26/04/2024.	Tom Barry - Oakleaf Surveying Ltd.
A2	EWS1 Cladding Review Report.	Ref: 5736.	09/09/2021.	Ivan Moore - Oakleaf Surveying Ltd.
A3	Steni Panels Cladding Information. SINTEF Technical Approval – No. 2165.		March 2021.	Steni Panels International.
A4	Gerda Site Plans.		4/08/2021.	Gerda Security Products.
A5				
A6				
A7				
A8				
A9				
A10				
A11				
A12				
A13				