RIDGE

ST JUDE'S RESIDENTIAL BLOCKS
BRISTOL CITY COUNCIL
BUILDING SAFETY EXECUTIVE
SUMMARY REPORT

April 2025

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Prepared for

Bristol City Council

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1. EXECUTIVE SUMMARY

The investigations that have been carried out in relation to the structural robustness and the safety case reporting at the St Jude's blocks have highlighted a number of faults within the buildings that are detailed in the reporting and outlined below.

From the inspections, investigations and testing work carried out the team have outlined a number of recommendations within the reporting and risk matrices; the key items are highlighted below that will have the greatest impact in reducing risk for the residents in the blocks:

1. Installation of fire detection and alarm system (BS5839 - 1 Cat L5) to replace waking watch in accordance with NFCC guidance that will be converted to an evacuation alert system once sprinklers are installed.
2. Installation of sprinkler systems Installation of sprinkler protection to BS 9251 Category 4 and conversion of existing detection system, or enhancement of the fire protection of the structure to increase the fire resistance.
3. Remedial works to the external concrete balconies and walkways to prevent spalling concrete from falling.
4. Remedial works to the external balustrades for fall prevention.
5. Works to the external wall in relation to the lack of ties to the main structure and consequential failure thereof.

1.1. Fire Recommendations and Key Findings

Below are the recommendations to account for the low likelihood high consequence disproportionate collapse scenarios that have developed subsequent to the investigative works.

Table 1 Recommendations resulting from the Fire Strategy

Area	Recommendation	Criticality	Timescale
Temporary fire alarm to replace waking watch	We recommend that a full fire alarm is installed, with heat detectors in all flats in which structural deficiencies identified by structural engineers may cause collapse scenarios. The intention of the alarm would be to provide warning to potentially affected areas, to enable occupants to evacuate prior to collapse in fire, and to summon the fire and rescue service.	Medium	Immediate
Targeted resident engagement and person-centred fire risk assessments	We recommend that the Council continue to engage with residents, to identify residents who may require assistance in an emergency, so that the Council can formulate plans for these residents. Engagement should also raise awareness regarding avoidance of special hazards, including e-mobility devices, gas cannisters, and other hazards that could result in fast fire growth, hoarding practices, etc.	Medium	Immediate
Remedial work to structure, where lower than R60 or prone to	Address points raised in the Ridge structural reports to ensure that the performance of the structure meets the requirements of the fire strategy – the loadbearing	High	Short

failure, and/or sprinkler system installation	capacity in case of fire issues identified can be mitigated by sprinkler protection as the future strategy. In any case, we strongly recommend retrofitting sprinklers at St Jude's to cover these blocks.		
Protection of Stair 3 (and, in the longer term, review Stairs 1 and 2, although this is low priority)	We recommend that current unprotected apertures to Stair 3 are upgraded with fire-resisting construction or fire-resisting glazing, to protect against fire and smoke entering the stair from a fire in Haviland or Charleton, which could compromise escape from Langton. Stairs 1 and 2 are open, but are low priority to fully enclose, and indeed this may create secondary issues.	Medium	Short
Review of secure information box and wayfinding signage	Review contents of SIB, as well as wayfinding signage, and update as necessary.	Medium	Short
Implement resident engagement strategy and Mandatory Occurrence Reporting	Finalize resident engagement strategy and processes for Mandatory Occurrence Reporting in accordance with requirements made in secondary legislation under the Building Safety Act.	Medium	Short
External wall – combustible materials	Given the recorded presence of combustible materials, a full FRAEW should be carried out, followed by any required remedial work.	Medium	Medium
Review fire-stopping issues and address any outstanding items	Review findings from previous Type 4 fire risk assessment and ensure that these have been addressed globally throughout the blocks.	Medium	Medium
Domestic alarms	Upgrade existing internal alarms within flats to Grade D1 Category LD1 in accordance with BS 5839-6.	Low	Medium
Internal flat doors	Upgrade doors within flats to minimum of E30 fire doors at time of refurbishment, as well as transom panels above doors, or, more ideally, E30-Sa doors (which would be above minimum standard). The need to replace doors could be reduced through installation of sprinklers.	Low	Long
Fire lift	Upgrade in accordance with the guidance in BS 8899, at the time of future lift refurbishment.	Low	Long
Emergency voice communication system	As part of any upgrade, provide an EVCS in accordance with BS 9991 and BS 5839-9.	Low	Long
Evacuation alert system	Following completion of sprinkler system installation and/or structural remediation, change common fire alarm to EAS to BS 8629.	Low	Long
Channelling screens	At the time of structural repairs to walkways, we recommend that 500mm channelling screens are provided between individual dwellings, suspended from the walkways.	Low	Long

1.2. Structural Recommendations and Key Findings

The key findings of the intrusive structural investigations against BRE 511 are detailed in the table below, Langton has been assessed against approved document A only as the structure differs. Further summaries of the assessment criteria for fire, external walls, balustrades, Balconies, chemical resistance to attack and foundations are listed in table 3:

Table 2 - Summary of the LPS Robustness Criteria for the St Judes Blocks.

LPS CRITERION	ASSESSMENT Charleton House, Haviland House, & John Cozens House	ASSESSMENT Langton House	COMMENTS
Criterion 1 Adequate ties within joints	**Insufficient**	**Sufficient**	St Judes contains class 2B buildings that require both vertical and horizontal ties. Haviland, John Cozens and Charleton Houses The horizontal ties were found to be insufficient to withstand the required imposed forces due to inconsistencies in their installation. Investigations also found no adequate vertical ties between wall panels.
Criterion 2 Adequate strength to resist Accidental Loads without the steel frame	**Insufficient**	Does not apply	The floors cannot resist the overpressure requirement for non-piped gas supply of 17kPa. The wall panels appear to be satisfactory up to level 2.
Criterion 2 Adequate strength to resist Accidental Loads with the steel frame	**Partially Insufficient**	Does not apply	The floors can resist the overpressure requirement for non-piped gas supply of 17kPa, due to the steel frame strengthening being utilised. The wall panels pass up to level 2 given the additional weight of vertical loads above them; above this level the vertical load is insufficient to assist in resisting the flexure they experience.
Criterion 3 Ability to mobilise alternative load paths	**Insufficient**	Does not apply	The use of alternative load paths is not considered to be feasible, as each element is deemed critical to the system's integrity. The connections between elements are best described as flexible, with joint stiffness playing a role rather than functioning as true pin connections. Consequently, any failure within the system is likely to trigger a mechanism, leading to disproportionate collapse.

Table 3 – Building Safety Assessment criteria summary for the St Judes Blocks.

ASSESSMENT CRITERIA	ASSESSMENT	COMMENT
Fire Resistance Without the steel frame	**Insufficient**	A load bearing capacity of 60 minutes is calculated for the structure; the critical element considered is the floor which has a low reinforcement cover. A 90-minute requirement is needed as set out in current guidance.
Fire Resistance With the steel frame assuming fire protection	**Sufficient**	A load bearing capacity of 90 mins can be achieved provided the steel frame is fireproofed to a similar effect. (Not applicable to Langton House & Charleton House)
Carbonation Depth of carbonation into concrete	**Insufficient**	Carbonation testing indicates that, in some areas, the passivity front has surpassed the reinforcement, and the concrete is at risk of spalling due to the corrosion and expansion of the steel reinforcement.
External Walls External masonry wall support and tie details	**Insufficient**	The external masonry walls on the building, consisting of two layers of blockwork, were found to be inadequately tied to the primary concrete walls and floors. With improper ties the masonry panels pose a risk of collapse in high wind loads.
Balustrades Condition of metal balconies	**Insufficient**	Balustrades around the building, particularly along the shared access walkways, were noted to be severely corroded with several instances of temporary propping being used to support the balustrades. The condition of the balustrades requires replacement of the full system.
Balconies	**Insufficient**	The visual condition of the concrete balconies, combined with carbonation results indicate that carbonation level is high increasing the risk of spalling. The increased risk category of the nursery below should be considered as part of any following risk workshops.

In addition to the inspection and assessment of the concrete frame, visual surveys of the overall building condition was carried out. Areas reviewed include the external wall cladding, handrails and balconies. It was found through the intrusive investigations that the masonry infill panels that span between the structural concrete frame have very few walls ties both between the cavities and back to the structural frame. The balconies to the south side of John Cozens were noted to have spalling concrete with incidences noted where sections of the balconies had collapsed.

The foundations have not been specifically intrusively investigated, but no adverse movement has been noted during the investigation and therefore this suggest the foundations are performing adequately at this point in time. To mitigate any long-term risks of the foundations degrading primarily against chemical attack, further investigations of the footings could be completed.

Recommendations

Considering the above results of the assessment & the general condition of the block, our recommendations for risk reduction measures, for Langton House these are incorporated from the taller Haviland House as it shares the lift core and stair structure with Haviland House:

Immediate Term (0-6 Months)

1. Continuation of the updated building evacuation strategy to a simultaneous evacuation, with the continued waking watch across St Jude's. This is a short-term measure in line with Government guidance (Evacuation guidelines for fire and rescue services (accessible))
2. Installation of fire detection and alarm system (BS5839 - 1 Cat L5) to replace waking watch in accordance with NFCC guidance
3. Regular inspections for and immediate ban on:
    a. any gas cannister/bottles/cylinders being used or stored within the dwellings, along with a complete ban on any other potentially explosive substances (including high-capacity batteries which may be found in items including e-scooters/e-bikes and some newer models of mobility scooters).
    b. Portable gas cookers – viewed as high risk as they have the potential to be left on whilst unignited, causing a leak that may then be unintentionally ignited, causing an explosion and excessive pressures being applied on the structures.
    c. To limit hoarding to minimise fire loads in flats
4. Removal of gas supply generally, in particular to the laundry rooms and presence of diesel generators near the building that could increase the risk of an accidental loading scenario.
5. Full condition survey of the balustrades around St Judes, temporary support provided to those in a critical condition with a design and programme developed to replace all the balustrades.
6. Detailed condition surveys of the balconies and walkways due to carbonation of the concrete to identify deteriorated and degraded areas or the structure to enable repairs as necessary.
7. Erection of the non-combustible scaffold fan to the base of the block to prevent falling concrete.
8. Detailed wind analysis of the block to be undertaken to assess peak forces on the external masonry wall with remedial design / strengthening options.

Medium Term (6 months -2 Years)

1. Installation of sprinkler protection to BS 9251 Category 4 and conversion of existing detection system, or enhancement of the fire protection of the structure to increase the fire resistance.
2. Repairs to concrete on residential balconies and communal walkways and Removal of residential balconies.
3. Carry out an options appraisal to understand the cost benefit of upgrading the structure to resist disproportionate collapse then (Not applicable to Langton House):
    a. Upgrade the structure through ties or strengthening to resist disproportionate collapse forces and provide a robust structure.
    b. If strengthening works are unviable re-assess the risk measures in place and determine any further measures that will enable the block to remain in service over a short term until decant can be undertaken for demolition.
4. Repairs and or replacement of the residential balconies due to deterioration from carbonation.
5. Remedial repairs to the escape walkways following detailed surveys.
6. Remedial repair works to the external masonry wall, or overclad the existing envelope.
7. If the block is to be retained investigate and assess the foundations for deterioration and chemical attack.

Long Term (3-5 years+) Continued Inspections

Considering the buildings type and height the following recommendations are made, which align with BRE recommendations:

1. A programme of visual inspections at intervals of 1 year, 2 years and 5 years following this initial appraisal, and then every 5 years subsequently to the external envelope (including parapets and balconies) to identify potential hazards from falling debris.

2. Visual inspections at 10-year intervals to structural joints which are vulnerable to water penetration; locations such as flank walls and roofs.

3. Full appraisal of the whole building at 20-year intervals

Should the risk reduction measures fail to effectively control the risk of disproportionate collapse to acceptable levels, and investment into strengthening works prove uneconomically viable, demolition of the block might be considered as a final long-term approach for the block. However, we would recommend that this decision should only be taken following the completion of a remedial strengthening design review, supported by the risk and cost benefit analyses recommended above to ensure that demolition is the best approach.