

HANOVER & PRINCESS COURT

MORIBUND REPORT



This report demonstrates how Hanover and Princess Court can be considered 'moribund housing' for the purpose of Homes England Grant Funding

EXECUTIVE SUMMARY

Moribund housing refers to residential properties that are no longer viable or suitable for continued occupation or investment.

Hanover & Princess Court are large dilapidated residential blocks owned by Cambridge City Council located on a 0.76ha site in central Cambridge.

The buildings are blighted by significant fire safety risks arising from a lack of compartmentation. These safety risks cannot be practically remediated and are incurring the Council significant monthly costs in providing a 'waking watch' to safeguard residents.

Cambridgeshire Fire & Rescue served 'Notices of Deficiencies' on the Council in 2024, relating to the compartmentation breaches in Hanover Court, a high-risk building. The same construction attributes exist in Princess Court.

The City Council are at risk of prosecution. It is practically challenging and financially prohibitive to remediate the compartmentation problems. Neither building is compliant with modern fire safety standards which results in unacceptable risks.

The buildings remain dilapidated despite £2.5 million having been spent on structural repairs, fire door replacements, asbestos removal, lift refurbishments etc over a 10-year period from 2011 to 2021. Inherent weaknesses in the building structures remain, linked to disproportionate collapse, structural defects and risks, despite mitigation works.

The buildings are at the end of their design life and ongoing deterioration is likely. It would not be practicable to attempt to make the existing buildings safe and compliant with modern standards. Demolition is the only viable option.

Other evidence demonstrating the moribund status of Hanover & Princess Court includes the fact that the buildings are not suitable for refurbishment due to their form of construction. The premises are also non-compliant with modern spatial standards and unsuitable for residents with mobility needs.

The buildings have a negative contribution to the conservation area. The scale, massing, and architectural style of the buildings are incongruous with the surrounding historic context.

The EPC ratings are below the desired standard and are not aligned with the Council's vision of being a net zero carbon by 2030.

The existing blocks provide substandard living conditions for residents and redevelopment is necessary to provide safe, modern, and contextually appropriate housing. The current layouts encourage antisocial behaviour which directly impacts the safety and enjoyment of the property by its residents and their visitors.

The regeneration of a deteriorating housing estate to create a safer, more inclusive and attractive neighbourhood will provide long-term benefits for residents' health, wellbeing, and community cohesion.

The Council have submitted a full planning application for the demolition of the existing buildings and the erection of 165 new homes, landscaping, community room, parking and associated works.

Development appraisal advice concludes that the site, in its present condition, could not be delivered by the private sector without public sector funding support due to a negative NPV of £-19,550,992.

Description of the site & buildings

The site falls within the jurisdiction of Cambridge City Council (the 'Council'). The address is Hanover and Princess Courts, Coronation Street, Cambridge CB2 1JH.

The 0.76ha site is located west of Hills Road and south of Lensfield Road. It is bound by Union Road to the north, George IV Street to the east, Coronation Street to the south and Bentinck Street to the west.

The site is currently occupied by two linear blocks oriented north-south. The western block (Princess Court) is five storeys high and parallel to Bentinck Street. The eastern block (Hanover Court) is eight storeys high and parallel to George IV Street. The blocks are linked to the north by a three-storey garage block, parallel to Union Road. Hanover & Princess Court accommodate 127 flats. The garage block provides 153 spaces.

Physical Condition

The most significant condition relates to fire safety, due to a lack of compartmentation, which is an ongoing risk incapable of resolution, incurring significant monthly costs associated with a waking watch policy, to safeguard the remaining residents.

The buildings remain in poor general condition despite £2.5 million having been spent on structural repairs, fire door replacements, asbestos removal work, lift refurbishments etc over a 10-year period from 2011 to 2021. Inherent weaknesses

in the building structures linked to disproportionate collapse remain, despite mitigation works.

These issues are explored in further detail below.

Fire Safety Deficiencies

Cambridgeshire Fire & Rescue Service (CFRS) have served two Notices of Deficiencies on Cambridge City Council under the Regulatory Reform (Fire Safety) Act 2005, for breaches under Article 8(1) relating to fire compartmentation in Hanover Court, a high-risk building. The same risks have been identified in Princess Court.

The first notice is dated 16 April 2024, and the second notice is dated 23 August 2024. The City Council are at risk of prosecution, as it is practically challenging, and financially prohibitive, to remediate the compartmentation issues within Hanover Court, and Princess Court.

The compartmentation breaches are present in the service risers which extend throughout the entire height of the buildings and traverse all floors. Within these risers, there are a combination of bathroom ventilation, soil vent pipes (SVPs), electrical components, water pipes, and gas pipelines. Breaches have also been recorded beyond the service risers impacting adjacent areas.

The scope of the required remedial work is extensive and complex and would also require the removal and re-fitting of kitchens and/or bathrooms, in full or in part, in the majority of the 127 flats to undertake the necessary works.

The prosecution risk is currently being mitigated by a waking watch policy to safeguard the residents. This involves 24/7 security patrols on site to provide early warning of a fire event. A meeting with the Chief Fire Officer on 9 July 2024, and the issue of a second Deficiencies Notice in August 2024, highlighted that the waking watch policy should only be in place for a period of 12 months in normal circumstances. This period has been exceeded.

The Council have taken legal advice following receipt of the Deficiencies Notices from Trowers & Hamlins LLP, the key elements are summarised below.

'The most recent Notice of Deficiencies dated 23 August 2024 outlines CFRS's current view that fire safety breaches are still present. To be satisfied that such breaches exist, CFRS must be satisfied that the Council is the responsible person, that there has been a breach of a duty, and that the breach places persons at risk of death or serious injury in the event of a fire. Due to this, there is an ongoing risk of enforcement proceedings.'

If convicted, proceedings under the FSO attract unlimited fines and so can be very damaging financially and reputationally.

If the council do not comply with the Notices, and the hazards are allowed to persist, it is possible that the Council may also face enforcement action from the Building Safety Regulator (BSR). Under the Building Safety Act 2022 (BSA), the Regulator has the power to serve a compliance notice on the Council as the accountable person for Hanover Court, if the BSR considers that the Council is contravening a relevant requirement of the BSA 2022.

Additionally, under the Social Housing (Regulation) Act 2023, the Regulator of Social Housing (RSH) has the power to inspect social housing properties, including properties owned by local authorities, and if necessary, undertake emergency remedial action and/or require a registered provider to implement a Performance Improvement Plan and monitor its progress closely.

Such additional intervention from the RSH seems unlikely given the current involvement of the CFRS, but should you receive any notices of this kind we recommend you obtain legal advice as a matter of urgency.

Going forward, the Council will need to consider the use of compulsory purchase powers to gain vacant possession of the buildings as soon as possible, given the on-going safety risks.'

Fire Risk Assessments were undertaken in July 2020 and May 2023. The following substantial risks remain despite the undertaking of repairs and maintenance works between 2011 and 2021:

- Inadequate fire doors - flat entrance doors to leasehold properties are not all fire-rated, compromising escape routes. Storage cupboard doors to leasehold properties on escape routes are also not all fire rated.
- Poor compartmentation – the service risers lack adequate fire separation, allowing fire and smoke to spread between flats.
- Inadequate fire detection & warning systems – there are no communal fire alarm systems.
- Escape route hazards – there are ventilators that breach escape staircases, allowing smoke to travel from a fire's origin into escape routes. Halls and stairways are designed in such a way that make it easy for obstructions (e.g. bicycles, stored items) to block escape routes.

Neither building is compliant with modern fire safety standards which results in unacceptable risks.

Supporting evidence

- Cambridge Fire & Rescue Service, Notification of Deficiencies, Reference 286325, File number 200004292211, 23 August 2024, Premises Hanover Court, George IV Street, Cambridge, CB2 1JH
- Cambridge Fire & Rescue Service, Notification of Deficiencies, Reference 282845, File number 200004292211, 16 April 2024, Premises Hanover Court, George IV Street, Cambridge, CB2 1JH
- Trowers & Hamlin LLP, Advice Note, 20 September 2024
- Fire Risk Assessment, Housing Services, Hanover Court, 07 May 2023
- Fire Risk Assessment, Housing Services, Princess Court, 08 May 2023
- Fire Risk Assessment, Housing Services, Hanover Court, 17 July 2020
- Fire Risk Assessment, Housing Services, Princess Court, 17 July 2020

Risk of structural collapse

Millward Consulting Engineers were instructed by Cambridge City Council in May 2021 to review the structural stability and capacity of the buildings for accidental loading resulting from a gas explosion, focused on the risk of disproportionate collapse.

The Hanover and Princess buildings are both masonry structures, consisting of precast concrete floors and roofs with no vertical or horizontal ties present, other than the precast concrete floor built into the masonry walls.

The buildings were constructed in the late 1960s prior to the Ronan Point accident, which introduced the requirement to check the robustness of structural designs within the subsequent 1970 building regulations.

Detailed analysis and calculations confirmed that all the wall panels fail robustness testing. The degree of failure varies from a factor of 1.926 to the lower floor up to 22.565 to the upper floors. These failures are significant.

Due to a lack of original design information, it is not possible to predict the probable extent of damage, however it is reasonable to assume that this would result in a progressive collapse of the building should a gas explosion occur, that would be beyond the acceptable limits of the building regulations.

The report concluded that the structures are unable to support the required accidental load that a gas explosion would cause, and it was recommended that all gas supplies and appliances are removed from the buildings. The gas supplies to the Council owned properties have been removed but some remain to the privately

owned leasehold flats in Princess Court. Consequently, the building has an inherent disproportionate collapse risk.

General Condition

A structural report prepared by MLTS Limited Structural Engineers in February 2020 reviewed completed maintenance and repairs works, and also made recommendations relating to further works and periodic inspections.

Remediated condition issues include the following:

Category	Defect(s)	Cause(s)
<i>Cracking and Movement in Structural Elements</i>	<p>Extensive cracking was found in the:</p> <ul style="list-style-type: none"> • Gable end walls • Flank walls • Internal communal areas • Bin chute and lift towers 	<p>Cracks were attributed to:</p> <p>Wind loading (especially from the west).</p> <p>Thermal expansion and contraction.</p> <p>Inadequate structural design (e.g. slender piers, lack of movement joints).</p>
	<p>Some gable ends were acting as dislocated masonry plates, reducing their ability to resist lateral wind loads.</p>	<p>Comparison between surveys undertaken in 2018 and 2020 showed that the buildings had cracked further due to the wind loading.</p>
<i>Concrete Deterioration and Falling Hazards</i>	<p>Parapet and balcony panels evidenced:</p> <ul style="list-style-type: none"> • Spalling • Carbonation • Corroded reinforcement <p>Loose concrete was found that could fall onto people below and emergency ‘tap tests’ revealed dangerous loose material.</p>	<p>Spalling damage due to weathering.</p> <p>Carbonation due to loss of protective alkalinity in the concrete.</p> <p>Reinforcement corrosion due to lack of cover protection and weathering.</p> <p>Inappropriate paints used on concrete have trapped moisture, accelerating corrosion.</p>

Remaining condition issues include the following:

Category	Defect(s)	Cause(s)
<i>Inadequate Masonry Bearings</i>	Many concrete lintels and beams had insufficient bearing lengths. This compromises the building's ability to resist disproportionate collapse and is deemed a severe safety concern.	A result of original design and construction detailing.
<i>Tower Instability</i>	Bin chute and lift towers are slender and poorly restrained, with a risk of collapse if car park structure is removed. Serious structural failure could occur.	Cracking from sway and thermal movement. Weak base support (partial pinned condition).
<i>Brickwork Failures</i>	The brickwork showed the following characteristics: <ul style="list-style-type: none"> • Poor mortar bonding • Frost damage • Lack of wall ties • Crumbling under load The weakness of the bond between the mortar and the bricks is considered a significant structural defect.	Poor design/workmanship related to mortar mixes and wall ties. General weathering. Old scaffolding fixings left in the façade have corroded and burst the brickwork.

The buildings are approaching the end of their design life. They suffer from multiple serious structural defects, and ongoing deterioration is likely without major intervention. It would not be practicable to attempt to make the existing buildings safe and compliant with modern standards. Instead, demolition is the only safe option.

Supporting evidence

- Millward Consulting Engineers, MA11229, Hanover & Princess Calculations, May 2021

- MLTS Ltd Structural Engineers, Preliminary Report on the Apparent Cracking within the External Façade Brickwork, Concrete Façade Panels and Year 2 Urgent Remedial Works of Princess and Hanover Courts, Cambridge, CB2 1JJ and CB21 1JH, February 2020

Disproportionate Investment on Repairs & Maintenance

The council spent approximately £2.5 million between 2011 and 2021 on repairs to the existing buildings to facilitate continued occupation. The costs expended are detailed in the tables below.

Hanover Court	Work Year	Invoiced Cost
Emergency lighting & concrete repairs	2011/12	£35,634.45
Asbestos removal	2013/14	£3,446.50
Balcony refurbishments	2012/13	£120,285.53
Communal flooring	2015/16	£58,515.61
Lift refurbishment	2015/16	£48,160.14
Re-roofing / insulation / structural brickwork repairs	2016/17	£434,932.55
Flat doors	2016/17	£11,996.00
Concrete repairs	2018/19	£200,986.00
Heli-fix brickwork repairs	2018/19	£205,334.57
Walkway drain surveys/repairs	2018/19	£5,800.00
Replace fire doors	2020/21	£90,000.00
Total		£1,215,091.35

Princess Court	Work Year	Invoiced Cost
Emergency lighting & PTR / Concrete Repairs	2011/12	£35,634.45
Re-roofing / insulation / edge protection (HHSRS)	2011/12	£300,000.00
Balcony refurbishments	2012/13	£335,219.17
Asbestos removal	2013/14	£3,446.50
Communal flooring	2015/16	£29,257.81
Lift refurbishment	2015/16	£46,121.29
Structural brickwork repairs	2016/17	£163,461.64
Flat doors	2016/17	£597.00
Emergency escape / access ratches to roof	2017/18	£48,068.93
Concrete Repairs	2018/19	£108,869.53
Heli-fix brickwork repairs	2018/19	£103,329.61
Walkway drain surveys/repairs	2018/19	£7,446.00
Replace fire doors	2020/21	£50,000.00
Total		£1,231,451.93

Functional obsolescence

Layout, size, design unsuitable for modern living

The buildings adopt cross wall construction which relies on loadbearing internal masonry walls (party walls and gable ends) for stability. These walls cannot be moved or removed without seriously compromising the structural integrity of the whole building, making it extremely difficult to reconfigure layouts or combine smaller flats into larger, modern homes. Due to the loadbearing nature of the internal walls, it is not feasible to reconfigure rooms to meet modern expectations.

Any attempt to retrofit services, insulation, or create new connections between flats risks weakening already stressed brickwork and could trigger disproportionate collapse.

The floor to ceiling heights are low preventing the installation of modern mechanical and electrical installation, such as mechanical ventilation heat recovery (MVHR), for example.

Failure to meet decent homes standard

None of the existing homes meet the decent homes standard. The existing homes are around 20% smaller than current space standards.

Failure to meet energy efficiency targets

The current buildings were constructed in 1968 and are not aligned with the Council's vision of being a net zero carbon council by 2030 and delivering sustainable housing solutions.

The EPC ratings of these buildings are below the desired standard, and this is impacting on the operational carbon of the buildings and the energy costs that are being incurred by the residents.

Lack of accessibility/adaptability for current/future needs

There are no flats that can be considered accessible or adaptable due to the design and spatial attributes of the existing buildings.

The current site has 0% wheelchair homes provision. This makes the buildings non-compliant with modern accessibility standards and unsuitable for residents with mobility needs.

Occupancy & Demand

Only 14 of the 127 flats remain occupied comprising two Council tenants and ten leaseholders. The Council have utilized the properties for predominantly temporary accommodation over the last couple of years.

Economic viability

Cost of refurbishment or maintenance exceeds value or benefit

It's not viable to refurbish or continue maintaining the buildings given the fire risks and anticipated increasing maintenance costs due to the overall dilapidated condition of the buildings.

The value of the existing buildings in their current condition is limited, and the sub-standard level of accommodation doesn't offer residents tangible benefits.

Financial modelling shows negative Net Present Value (NPV)

The financial modelling undertaken provides a negative NPV of £-19,550,992. A Development Appraisal prepared by Savills' concludes that the site, in its present condition, could not be delivered by the private sector without public sector funding support.

Supporting evidence

- Savills, Development Appraisal Report, Hanover & Princess Court, Cambridge, CB2 1JH, October 2025.

Impact on wider regeneration

Housing stock is a barrier to area improvement

A Built Heritage Statement has been commissioned which concluded that:

- The existing site has a 'negative element' within the New Town and Glisson Road Conservation Area.
- The scale, massing, and architectural style of the buildings are incongruous with the surrounding historic context.
- The site fails to enhance or preserve the character and appearance of the conservation area.

Delivery of better quality, mixed-tenure housing

A planning application has been submitted by the Cambridge Investment Partnership (CIP) which is a 50/50 partnership between Cambridge City Council and Hill Partnerships Ltd. A full planning application for the demolition of the existing buildings and the erection of 165 new homes, landscaping, community room, parking and associated works was validated by Greater Cambridge Shared Planning Service on 28 October 2005.

The re-development proposals provide the following benefits:

- 165 new homes in a mix of one to three bed units, replacing outdated and substandard accommodation that has had to be vacated due to building safety concerns

- All homes meet Nationally Described Space Standards
- 5% of homes are wheelchair accessible (M4(3))
- All-electric, gas-free homes with enhanced building fabric
- Designed to meet Cambridge's high sustainability standards (Cam Standard)
- Larger, more energy-efficient affordable units with improved layouts and amenities
- Increase in the amount of affordable floor space and affordable bedspaces

Community safety, cohesion, or wellbeing

The current layout of the buildings, the staircases and circulation routes means the properties are prone to antisocial behaviour which directly impacts the safety and enjoyment of the property by its residents and their visitors.

The proposed redevelopment will provide:

- New pedestrian and cycle routes through the site
- Secure cycle parking for all residents and visitors, including oversized cycles
- Car-free design with parking limited to disabled and car club spaces, integrated into the landscape
- A new c. 80m² community room with flexible uses (e.g. events, classes, resident meetings)
- 61.5% of the site retained as open space benefiting the public realm
- High-quality landscaping with play areas, sensory gardens, and rain gardens
- Enhanced biodiversity and a projected increase in tree canopy cover
- 20% Biodiversity Net Gain
- Regeneration of a deteriorating housing estate
- Creation of a safer, more inclusive and attractive neighbourhood
- Long-term benefits for residents' health, wellbeing, and community cohesion

Supporting evidence

- RPS Group, Built Heritage Statement, Hanover & Princess Court, Cambridge, August 2025
- Carter Jonas, Planning Statement for Hanover & Princess Courts, Cambridge, September 2025

Strategic fit

Local authority regeneration plans

Cambridge City Council's Housing Scrutiny Committee approved the decanting of Hanover & Princess Court on 20 January 2022. Approval was provided on the principal that Hanover and Princess Courts are beyond economic viability when set against current standards. Redevelopment would produce an increase in the number of homes.

Cambridge City Council's Housing Scrutiny Committee subsequently approved the redevelopment of Hanover & Princess Court on 14 March 2023 based on a scheme of 138 homes, a small increase in the total number of homes. The planning application proposals exceed this base line figure and provide an extra 27 homes.

A Planning Statement has been prepared by Carter Jonas which highlights the strategic fit the proposed development will have with the Local Plan and the National Planning Policy Framework.

As defined by the Cambridge Local Plan Policies Map (2018), the site is designated as 'white land' inferring that the site is not designated under any specific policy allocation.

The existing use of the site is residential and the redevelopment for the same use on this site is considered acceptable. Paragraph 125 of the NPPF further advises that planning decisions should promote and support the development of underutilised land for housing. The proposed development will help to address local housing needs and contribute towards meeting housing requirements across Cambridge.

The scheme will utilise sustainable materials and construction, and in doing so will far exceed the requirements of Policy 28 (carbon reduction, community energy network, sustainable design and construction, and water use) of the Development Plan, thus ensuring that the proposed redevelopment is highly sustainable and energy efficient. This is supported by paragraph 164 of the NPPF which states that new development should help to reduce greenhouse gas emissions through suitable design and location.

The principle of residential development is found to be acceptable and compliant with the relevant policies and principles of the Development Plan. The proposed development will deliver a high-quality public realm and in doing so, will respond positively to the local context as required under Policy 55 (responding to context); and would have a positive impact on its setting as required under Policy 57a (designing new buildings).

The proposed development follows the design principles set out under Policy 56 (creating successful places) including (inter alia) successfully integrating with the surrounding area, creating an attractive and appropriately scaled built frontage that would positively enhance the townscape, using materials suitable to the location and context, and increasing natural surveillance. It would also follow the design principles set out within Section 12 of the NPPF.

Policy 45 (affordable housing and dwelling mix) requires a balanced mix of houses to be provided. Across the private and affordable homes, 55% are to be one bed

and 40% two beds. Whilst just over half of the flats provided are one bed, this meets a significant need within the city.

Resident consultation & community engagement

There has been extensive public consultation carried out to inform the design of the re-development proposals.

Public consultation events were held in August 2022 and November 2024 and residents and stakeholders described the buildings as:

- *“Ugly and inefficient”*
- *“An eyesore”*
- *“Horrible and outdated”*
- *“In poor condition, with homes below modern space standards that do not achieve suitable energy efficiency levels”*
- *“No longer fit for purpose”*

There was broad agreement during consultations that the buildings should be replaced.

Homes England’s objectives

The proposed development will increase the supply of affordable housing by providing 72 affordable homes comprising a mixture of social rent, affordable rent and 80% market rent homes in central Cambridge. This is a unique opportunity in to provide affordable homes in this location which are in very short supply and not met by the market.

The lack of affordable housing in Cambridge is widely reported, and very challenging, resulting in increased levels of homelessness.

The proposed redevelopment of Hanover & Princess Court will adopt sustainable development, high-quality, well-designed housing, stimulating regeneration and community wellbeing.

Supporting evidence

- Housing Scrutiny Committee Minutes, 22/8/HSC Report on Hanover and Princess Courts and Kingsway Flats, 20 January 2022
- Housing Scrutiny Committee Minutes, 23/20/HSC Update on Hanover and Princess Courts Options Appraisal, 14 March 2023
- Full planning application for the demolition of existing buildings and erection of 165 new homes, landscaping, community room, parking and associated works, ref. 25/04187/FUL
- Concilio, Statement of Community Involvement, May 2025

Appendices

- A. Cambridge Fire & Rescue Service, Notification of Deficiencies, Reference 286325, File number 200004292211, 23 August 2024, Premises Hanover Court, George IV Street, Cambridge, CB2 1JH
- B. Cambridge Fire & Rescue Service, Notification of Deficiencies Reference 282845, File number 200004292211, 16 April 2024, Premises Hanover Court, George IV Street, Cambridge, CB2 1JH
- C. Trowers & Hamlin LLP, Advice Note, 20 September 2024
- D. Fire Risk Assessment, Housing Services, Hanover Court, 07 May 2023
- E. Fire Risk Assessment, Housing Services, Princess Court, 08 May 2023
- F. Fire Risk Assessment, Housing Services, Hanover Court, 17 July 2020
- G. Fire Risk Assessment, Housing Services, Princess Court, 17 July 2020
- H. Millward Consulting Engineers, Hanover & Princess Calculations, May 2021
- I. MLTS Ltd Structural Engineers, Preliminary Report on the Apparent Cracking within the External Façade Brickwork, Concrete Façade Panels and Year 2 Urgent Remedial Works of Princess and Hanover Courts, Cambridge, CB2 1JJ and CB21 1JH, February 2020
- J. Savills, Development Appraisal Report, Hanover & Princess Court, Cambridge, CB2 1JH, October 2025
- K. RPS Group, Built Heritage Statement, Hanover & Princess Court, Cambridge, August 2025
- L. Carter Jonas, Planning Statement for Hanover & Princess Courts, Cambridge, September 2025
- M. Housing Scrutiny Committee Minutes, 22/8/HSC Report on Hanover and Princess Courts and Kingsway Flats, 20 January 2022
- N. Housing Scrutiny Committee Minutes, 23/20/HSC Update on Hanover and Princess Courts Options Appraisal, 14 March 2023
- O. Full planning application for the demolition of existing buildings and erection of 165 new homes, landscaping, community room, parking and associated

works, [25/04187/FUL | Demolition of existing buildings and erection of 165 new homes, landscaping, community room, parking and associated works | Princess Court Bentinck Street Cambridge Cambridgeshire CB2 1JJ](#)

P. Concilio, Statement of Community Involvement, May 2025

Hanover Court
George Iv Street
Cambridge
CB2 1JH
For the attention of David Rogers



**CAMBRIDGESHIRE
FIRE & RESCUE SERVICE**
Working together to improve community safety

Our reference: 286325 (Please quote this number on all occasions)
File number: 200004292211
Date: 23 August 2024

Dear Sir

**REGULATORY REFORM (FIRE SAFETY) ORDER 2005
PREMISES: HANOVER COURT, GEORGE IV STREET, CAMBRIDGE, CB2
1JH**

NOTIFICATION OF DEFICIENCIES

Following an audit of the fire safety arrangements at the above premises, I confirm that the measures contained in the attached schedule are to be carried out in order to comply with the above legislation.

You should note that failure to comply with any requirement of the legislation is an offence and the person responsible is liable to prosecution. This letter and attached schedule are issued without prejudice to any legal action which may subsequently be taken regarding the failures to comply with the Legislation.

Please refer to the schedule for detailed information including the use of the waking watch.

A further visit will be made on or after the 28th October 2024 to ensure that the requirements of the schedule have been carried out.

If you are in any doubt as to the obligations placed upon you by the legislation, or if there is any relevant matter upon which you require clarification, please contact Jon Bowyer by telephoning 07892 760650 or by e-mailing jon.bowyer@cambsfire.gov.uk.

Yours faithfully

Jon Bowyer

For and on behalf of:
**M WARREN
CHIEF FIRE OFFICER**



www.cambsfire.gov.uk

SCHEDULE

PREMISES: Hanover Court, George Iv Street, Cambridge, CB2 1JH

Note: Notwithstanding any consultation undertaken by the Fire Authority, **before** you make any alterations to the premises, **you** may need to apply for approval from a building control body and /or any other agency having a statutory interest in the premises.

Information on the Implementation of a Waking Watch

It has been advised that the waking watch has been operational since January 24. According to NFCC guidelines, this measure is appropriate for temporary periods of up to 12 months. To adhere to these guidelines, a comprehensive remediation plan must be established, and the fire safety issues must be resolved. Failure to address these deficiencies within the specified timeframe may lead to enforcement action.

1. Article 8 – Duty to take general fire precautions

Deficiency

The responsible Person must take such general fire precautions as will ensure the safety of persons who are not employees have not been taken.

Remedial Steps

- 1.1 The responsible person must ensure that any deficiencies / significant findings identified within the fire risk assessment are acted upon and rectified in a timely manner, prioritising the work to ensure that the safety critical items are completed first.

Deficiency

The responsible person has failed to comply with Article 8(1) of the Regulatory Reform (Fire Safety) Order 2005 as a result of pipes and service ducts, and other openings in the walls, floors, partitions and ceilings for the passage of building services not being adequately sealed with fire-resisting materials, or bushed, in order to minimise the danger of the spread of heat, smoke or fumes.

Remedial Steps

- 1.2 Compartmentation issues have been observed in various sections of the premises. These issues are present in the service risers and the main electrical junction box rooms. The service risers extend throughout the entire height of the building and traverse all floors. Within these risers, there are a

combination of bathroom ventilation, soil vent pipes (SVPs), electrical components, water pipes, and gas pipelines. Breaches have occurred, affecting adjacent areas as well as those situated above the compromised compartmentation. This was also identified in the significant findings of the risk assessment.

All pipe and service ducts, and other openings in the walls, floors, partitions, and ceilings for the passage of building services are to be adequately sealed with fire-resisting materials, or bushed, in order to minimise the danger of the spread of heat, smoke or fumes.

2. Article 24 – Power to make regulations about fire precautions.

Deficiency

Regulation 4(5) of The Fire Safety (England) Regulations 2022, made under Article 24 of the Regulatory Reform (Fire Safety) Order 2005.

The responsible person for The Premises, which is high rise residential building, has not inspected the secure information box at least annually and ensured that it continues to meet the requirements in paragraph 4(2) of The Fire Safety (England) Regulations 2022.

Remedial Steps

- 2.1 Institute a programme of inspection of the secure information box on at least an annual basis and ensure that it continues to meet the requirements in paragraph 4(2) of The Fire Safety (England) Regulations 2022. namely that the said box:-

- (a) contains the documents required to be placed in it by these regulations.

The contents of the box still need to be verified. During the recent inspection, some information was found wedged between the box and the compartment wall, rather than being securely placed inside as required

Further Information

A program should be put in place to ensure that faults are rectified and that if any fault cannot be rectified within 24 hours of its discovery, the Cambridgeshire and Peterborough Fire Authority must be notified by electronic means as soon as is reasonably practicable.

The program should also cover ensuring that the said authority is informed by electronic means when the fault has been rectified.

Details of the said fault should be provided to Cambridgeshire and Peterborough Fire Authority, via the following link: -

[Fault Reporting Form](#)

When a fault has been rectified, details of the said fault should be provided to Cambridgeshire and Peterborough Fire Authority, via the following link: -

[Fault Rectification Reporting Form](#)

Further Guidance

A copy of the Fire Safety in Purpose Built Blocks of Flats guidance document is available from the website by using the following link:

[Fire Safety legislation guidance and advice](#)

Cambridgeshire Fire and Rescue Service hold regular virtual online fire safety seminars utilising Microsoft Teams. These seminars are approximately one and a half hours duration and are free of charge. Attendance at one of these should provide you with a better understanding about your responsibilities under the Regulatory Reform (Fire Safety) Order 2005 and guide you through the main aspects of fire safety in the workplace. If you are interested in attending one of these seminars please visit our website and fill in the booking form at the following link

[Free Business Fire Safety Seminars](#)

Hanover Court
George Iv Street
Cambridge
CB2 1JH



**CAMBRIDGESHIRE
FIRE & RESCUE SERVICE**
Working together to improve community safety

For the attention of David Rogers

Our reference: 282835 (Please quote this number on all occasions)
File number: 200004292211

Date: 16 April 2024

Dear Sir

**REGULATORY REFORM (FIRE SAFETY) ORDER 2005
PREMISES: HANOVER COURT, GEORGE IV STREET, CAMBRIDGE, CB2
1JH**

NOTIFICATION OF DEFICIENCIES

Following an audit of the fire safety arrangements at the above premises, I confirm that the measures contained in the attached schedule are to be carried out in order to comply with the above legislation.

You should note that failure to comply with any requirement of the legislation is an offence and the person responsible is liable to prosecution. This letter and attached schedule are issued without prejudice to any legal action which may subsequently be taken regarding the failures to comply with the Legislation.

A further visit will be made on or after the 11th June 2024 to ensure that the requirements of the schedule have been carried out.

If you are in any doubt as to the obligations placed upon you by the legislation, or if there is any relevant matter upon which you require clarification, please contact Jon Bowyer by telephoning 07892 760650 or by e-mailing jon.bowyer@cambsfire.gov.uk.

Yours faithfully

Jon Bowyer

For and on behalf of:
**C STRICKLAND
CHIEF FIRE OFFICER**



www.cambsfire.gov.uk

SCHEDULE

**PREMISES: Hanover Court, George Iv Street, Cambridge,
CB2 1JH**

Note: Notwithstanding any consultation undertaken by the Fire Authority, **before** you make any alterations to the premises, **you** may need to apply for approval from a building control body and /or any other agency having a statutory interest in the premises.

1. Article 8 – Duty to take general fire precautions

Deficiency

The responsible Person must take such general fire precautions as will ensure the safety of persons who are not employees have not been taken.

Remedial Steps

- 1.1 The responsible person must ensure that any deficiencies / significant findings identified within the fire risk assessment are acted upon and rectified in a timely manner, prioritising the work to ensure that the safety critical items are completed first.

Deficiency

The responsible person has failed to comply with Article 8(1) of the Regulatory Reform (Fire Safety) Order 2005 as a result of pipes and service ducts, and other openings in the walls, floors, partitions and ceilings for the passage of building services not being adequately sealed with fire-resisting materials, or bushed, in order to minimise the danger of the spread of heat, smoke or fumes.

Remedial Steps

- 1.2 Compartmentation issues have been observed in various sections of the premises. These issues are present in the service risers and the main electrical junction box rooms. The service risers extend throughout the entire height of the building and traverse all floors. Within these risers, there are a combination of bathroom ventilation, soil vent pipes (SVPs), electrical components, water pipes, and gas pipelines. Breaches have occurred, affecting adjacent areas as well as those situated above the compromised compartmentation. This was also identified in the significant findings of the risk assessment.

All pipe and service ducts, and other openings in the walls, floors, partitions, and ceilings for the passage of building services are to be adequately sealed with fire-resisting materials, or bushed, in order to minimise the danger of the spread of heat, smoke or fumes.

2. Article 14 – Emergency routes and exits

Deficiency

The escape routes and exits could not be used as quickly and as safely as possible

Remedial Steps

The following doors are to be fitted with a push bar, push pad or other similar opening device: -

- a) laundry Room door, to ensure relevant persons can evacuate without the need for a key

3. Article 17 – maintenance

Deficiency

The emergency lighting has been inadequately maintained. No testing or service records have been produced prior to or during inspection.

Remedial Steps

- 3.1 It is recommended that consideration is given to the provision of a servicing contract with a competent contractor who should maintain and test the emergency lighting system in accordance with the recommendations of British Standard 5266.

BS EN 50172: 2004 / BS 5266: Part 8: 2004 makes the following recommendations with regard to testing of emergency lighting systems: -

- a) **Daily** - Indicators of central power supply should be visually inspected for correct operation. NOTE; this is a visual inspection of indicators to identify that the system is in a ready condition and does not require a test of operation
- b) **Monthly** - Each self-contained luminaire should be subjected to a simulated mains failure to ensure that all luminaires are operating correctly. The date, time and results of the test should be recorded in the system log book.
- c) **Annually** - Each luminaire should be energised for its full rated duration by simulating a failure to its normal power supply to ensure that all luminaires are functioning correctly. The date, time and results of the test should be recorded in the system log book. NOTE: This test should be conducted preceding a period of low-risk in order to allow the system to re-charge.

4. Article 18 - Safety assistance

Deficiency

One, or more, competent persons have not been appointed to assist in undertaking preventive and protective measures.

Remedial Steps

- 4.1 The responsible person should appoint one or more competent persons, depending on the size and use of the premises, to assist in undertaking any measures needed to be taken to comply with the Regulatory Reform (Fire Safety) Order 2005. The waking watch should be increased to provide enough assistance to individuals, including those who are vulnerable in the event of an emergency evacuation. This should be in line with the current building evacuation policy.

5. Article 21 – Training

Deficiency

Safety training to employees (including 24 hrs waking watch personnel) is not provided in a manner appropriate to the risks identified by the risk assessment. No records of evidence produced prior to or during inspection

Remedial Steps

- 5.1 The responsible person must ensure that fire safety training is given to employees in a manner appropriate to the risk identified by the risk assessment. The training should take account of the findings of the fire risk assessment and be easily understood by all those attending. This must include ensuring the safe evacuation of residents in line with the current simultaneous evacuation strategy.

6. Article 24 – Power to make regulations about fire precautions.

Deficiency

Regulation 4(5) of The Fire Safety (England) Regulations 2022, made under Article 24 of the Regulatory Reform (Fire Safety) Order 2005.

The responsible person for The Premises, which is high rise residential building, has not inspected the secure information box at least annually and ensured that it continues to meet the requirements in paragraph 4(2) of The Fire Safety (England) Regulations 2022.

Remedial Steps

6.1 Institute a programme of inspection of the secure information box on at least an annual basis and ensure that it continues to meet the requirements in paragraph 4(2) of The Fire Safety (England) Regulations 2022. namely that the said box:-

(a) contains the documents required to be placed in it by these regulations.

The box could not be opened at the time of inspection.

Deficiency

Regulation 7(1), 7(2), 7(3) and 7(4) of The Fire Safety (England) Regulations 2022, made under Article 24 of the Regulatory Reform (Fire Safety) Order 2005.

The responsible person for the premises, which is a high-rise residential building, has not undertaken monthly routine checks of lifts for use by firefighters, (see fire risk assessment) and essential fire-fighting equipment including the dry risers within the premises. No records of testing of maintenance were available prior to or during inspection.

Remedial Steps

6.2 A program should be put in place for the undertaking of routine monthly checks of all lifts that are intended for use by firefighters, and of essential fire-fighting equipment, within the meaning given to the term “essential firefighting equipment” by

Regulation 7(5) of The Fire Safety (England) Regulations 2022, and of any of the following located within the common parts of the building

The routine checks must entail checking that any lift or piece of equipment is in efficient working order and in good repair, carried out in accordance with the relevant industry standard or any recommendations made by the manufacturers of equipment within an operators’ manual.

Records of all the above-mentioned monthly checks must be kept. The records of these checks must be accessible to residents of the building. If any of these checks reveal a fault in one of the above-mentioned systems or equipment, steps must be taken to rectify the fault.

A program should be put in place to ensure that faults are rectified and that if any fault cannot be rectified within 24 hours of its discovery, the Cambridgeshire and Peterborough Fire Authority must be notified by electronic means as soon as is reasonably practicable.

The program should also cover ensuring that the said authority is informed by electronic means when the fault has been rectified.

Details of the said fault should be provided to Cambridgeshire and Peterborough Fire Authority, via the following link: -

[Fault Reporting Form](#)

When a fault has been rectified, details of the said fault should be provided to Cambridgeshire and Peterborough Fire Authority, via the following link: -

[Fault Rectification Reporting Form](#)

Deficiency

Regulation 8 (1) and (2) of The Fire Safety (England) Regulations 2022, made under Article 24 of the Regulatory Reform (Fire Safety) Order 2005.

The responsible person for The Premises which is a high-rise residential building, has not ensured that the building contains clear markings of floor identification and identification of domestic premises; such wayfinding signage being necessary to assist Fire and Rescue Service crews with orientation in the event of a fire.

Remedial Steps

- 6.3 Provide clear markings of floor identification and identification of domestic premises to assist Fire and Rescue Service crews with orientation in the event of a fire. The “markings” must be an identification designed and located in accordance with the guidance in Volume 1 of Approved Document B on each landing within the stairways and in the lift lobbies of the floor level marked in such a way as to be visible both in low level lighting conditions or when illuminated with a torch. Approved Document B can be accessed at <https://www.gov.uk/government/publications/fire-safety-approved-document-b>

Without prejudice to the specifications in the previous paragraph, The Wayfinding signage should comply with the following: -

- a) When firefighters reach the landing of any stairway, there should be signage that clearly indicates to them the floor number on which they are located and the flat numbers on that floor.
- b) When firefighters use a lift designed for their use to reach floors, the same signage should be clearly visible to them when the lift doors open.
- c) The signs must be visible both in normal conditions and in low lighting or smoky conditions.

The [Specification Wayfinding Signage](#) provides guidance, including the size of the lettering, the typeface to be used, the mounting height and suitable wording.

Deficiency

Regulation 9 (1) and 9(2) of The Fire Safety (England) Regulations 2022, made under Article 24 of the Regulatory Reform (Fire Safety) Order 2005.

The responsible person for the building which is The Premises has not displayed fire safety instructions in a conspicuous part of the building, which contains two or more sets of domestic premises and common parts through which residents would need to evacuate in the case of an emergency.

Remedial Steps

- 6.4 Display fire safety instructions in a conspicuous part of the building. The said instructions must,
- a) be in a comprehensible form that the residents can be reasonably expected to understand; and
 - b) include,
 - i) instructions relating to the evacuation strategy for the building (e.g., stay put or simultaneous evacuation)
 - ii) instructions as regards how to report a fire to the fire and rescue authority (e.g., use of 999 or 112, the correct address to give to the fire and rescue service, etc.), and
 - iii) any other instruction that tells residents what they must do when a fire has occurred, such as ensuring that fire resisting doors have closed shut behind them when making their escape in the event of fire.

Deficiency

Regulation 9 (4) of The Fire Safety (England) Regulations 2022, made under Article 24 of the Regulatory Reform (Fire Safety) Order 2005.

In respect of The Premises, which contains two or more sets of domestic premises and common parts through which residents would need to evacuate in the case of an emergency, despite there being a material changes to the fire safety instructions specified in paragraph 9(1) of The Regulations, the responsible person for The Premises has not displayed the changed instructions in accordance with paragraph (1) and a copy has not been provided to residents.

Remedial Steps

- 6.5 The changed instructions referred to in paragraph 9(1) of the said Regulations, must be displayed in a conspicuous part of the building in accordance with paragraph (1) and a copy must be provided to residents

The instructions specified in paragraph 9(1) of The Regulations are instructions which must -

- a) be in a comprehensible form that the residents can be reasonably expected to understand; and
- b) include—
instructions relating to the evacuation strategy for the building (e.g., stay put or simultaneous evacuation)

instructions as regards how to report a fire to the fire and rescue authority (e.g., use of 999 the correct address to give to the fire and rescue service, etc.), and
any other instruction that tells residents what they must do when a fire has occurred, such as ensuring that Fire resisting doors have closed shut behind them when making their escape in the event of fire.

A program should be put in place whereby if there is a material change to the said instructions, a copy of the changed instructions referred to in paragraph 9(1) of the said Regulations, must be promptly displayed in accordance with paragraph (1) and a copy must be promptly provided to residents.

Further Guidance

A copy of the Fire Safety in Purpose Built Blocks of Flats guidance document is available from the website by using the following link:

[Fire Safety legislation guidance and advice](#)

Cambridgeshire Fire and Rescue Service hold regular virtual online fire safety seminars utilising Microsoft Teams. These seminars are approximately one and a half hours duration and are free of charge. Attendance at one of these should provide you with a better understanding about your responsibilities under the Regulatory Reform (Fire Safety) Order 2005 and guide you through the main aspects of fire safety in the workplace. If you are interested in attending one of these seminars please visit our website and fill in the booking form at the following link

[Free Business Fire Safety Seminars](#)



dated 20 September 2024

Advice Note

In relation to the rights and responsibilities of Cambridge City Council to effect fire safety works in relation to the buildings known as Hanover Court and Princess Court, Cambridge

Trowers & Hamlins LLP
55 Princess Street
Manchester
M2 4EW

t +44 (0)161 838 2000
f +44 (0)161 838 2001
www.trowers.com

trowers & hamlins

1 Introduction

- 1.1 You have asked us to provide advice in relation to the responsibilities of Cambridge City Council (**you** or the **Council**) regarding fire safety works and whether the Council has any powers to effect these works under the Housing Act 2004 (**HA**), the Housing Health & Safety Rating System Regulations 2005 (**HHSRS**), the Regulatory Reform (Fire Safety) Order 2005 (**FSO**) and/or the Fire Safety (England) Regulations 2022 (**FSER**). Additionally, you have requested confirmation as to how to ensure compliance with the Council's duties under the Building Safety Act 2022 (**BSA 2022**).
- 1.2 We have also reviewed the documentation between the Council and Cambridge Fire and Rescue Service (**CFRS**) to advise on the consequences of receiving a 'Notice of Deficiencies' (the **Notice**) and the potential strategic next steps to resolve the fire safety issues whilst the Council works towards redeveloping the buildings known as Hanover Court and Princess Court (the **Buildings**). We understand that Hanover Court is eight storeys high so will be a Higher-Risk Building (**HRB**) for the purposes of the BSA 2022 and the FSER, whereas Princess Court is five storeys in height so we assume that the FSO and the FSER will apply, as will the parts of the BSA 2022 that apply to all buildings or "relevant buildings" (those that are at least 5 storeys or 11m high), rather than those provisions aimed at HRBs only.
- 1.3 You have asked us to review the long residential leases that affect the Buildings to advise whether you have any rights to carry out works whilst the long leases subsist.

2 Executive Summary

- 2.1 The Notice served upon you by the CFRS indicates that the following fire risks exist:
- 2.1.1 poor compartmentation within the Buildings;
 - 2.1.2 the Buildings have no secure information box (showing floorplans of the building etc).
- 2.2 The Notice is not a formal notice under the FSO. This means that you are not legally required to comply with its contents, and failing to meet the October deadline does not constitute a further offence.
- 2.3 However, regardless of the legal status of the Notice, there is a general duty under the FSO to take reasonable precautions to address fire risk. The Council is the responsible person for ensuring compliance with the FSO. The FSO creates a number of offences that the responsible person may commit, including failure to comply with fire safety duties. The Council may therefore be in breach of the FSO if it does not carry out works that are necessary to comply with its fire safety duties.
- 2.4 The Council has duties under the BSA 2022 to take all reasonable steps to prevent a building safety risk materialising in relation to the part of the building for which it is responsible and to reduce the severity of any incident arising from such a risk. This applies to Hanover Court only.

- 2.5 Under the Housing Act 2004, the Council can serve statutory notices requiring leaseholders to provide access to allow works to be carried out. In the event that entry is refused, you may be able apply to the County Court for an injunction requiring leaseholders to give you access.
- 2.6 The leases affecting the two buildings allow the Council as landlord to gain entry to carry out works or repairs. There is some ambiguity within the clauses of the leases as to whether the works envisaged to address fire safety risks would amount to "repairs". The leaseholders may be entitled to claim compensation from you if they have to move out whilst repairs are undertaken.
- 2.7 However, there may be merit in the argument that the precautions sought by the CFRS (in relation to 2.1.1 above) are not reasonable, given your intentions for the Buildings in the longer-term. If you do not think that it is reasonably practicable in the circumstances to carry out the works requested by the CFRS, it would be best practice to defer to a fire risk assessor to identify alternative control measures to manage the risk of the poor compartmentation for the relatively short period during which the Buildings will continue to be occupied. The Council cannot 'do nothing' now that the CFRS has identified specific fire safety risks, but it may be possible to commission robust evidence to demonstrate to the CFRS that there are alternative means to ensure the safety of residents and others, which constitute reasonable steps in the circumstances, but are less costly than undertaking the compartmentation works. The lack of a secure information box in Hanover Court would seem relatively easy to remedy and there does not appear to be any good reason not to comply with this requirement, assuming that the Council has appropriate floor plans for the Building.
- 2.8 We have set out recommended next steps in the Conclusion section of this advice.

3 **Key Definitions**

3.1 The **responsible person** within the FSO means—

- 3.1.1 in relation to a workplace, the employer, if the workplace is to any extent under his control; or
- 3.1.2 in relation to any premises not falling within paragraph 3.1.1:
- (a) the person who has control of the premises (as occupier or otherwise) in connection with the carrying on by him of a trade, business or other undertaking (for profit or not); or
 - (b) the owner, where the person in control of the premises does not have control in connection with the carrying on by that person of a trade, business or other undertaking.
- 3.1.3 The responsible person must ensure that any duties imposed by the FSO or by regulations made under the FSO are complied with.
- 3.1.4 Any duties imposed by the FSO, or by regulations made under it, on the responsible person, in respect of premises, shall also be imposed on every person, other than the responsible person, who has, to any extent, control of those premises so far as the requirements relate to matters within his control.

3.1.5 Where a person has, by virtue of any contract or tenancy, an obligation of any extent in relation to—

- (a) the maintenance or repair of any premises, including anything in or on premises; or
- (b) the safety of any premises,

that person is to be treated, for the purposes of paragraph 3.1.4, as being a person who has control of the premises to the extent that his obligation so extends.

3.2 **Higher-risk building** is defined under BSA 2022 as a building that:

3.2.1 is at least 18 metres in height or has at least 7 storeys; and

3.2.2 contains at least 2 residential units.

3.3 The **accountable person** for a 'higher-risk' building under the BSA 2022 is defined as:

3.3.1 a person who holds a legal estate in possession in any part of the common parts (subject to the exceptions set out within the legislation); or

3.3.2 a person who does not hold a legal estate in any part of the building but who is under a relevant repairing obligation in relation to any part of the common parts.

3.4 The **principal accountable person** for a higher-risk building is defined as:

3.4.1 in relation to a building with one accountable person, that person; and

3.4.2 in relation to a building with more than one accountable person:

(a) the accountable person who holds a legal estate in possession in the relevant parts of the structure and exterior of the building, or

(b) a person who does not hold a legal estate in possession in any part of the building but who is under a relevant repairing obligation in relation to the relevant parts of the structure and exterior of the building.

3.5 A person under a **relevant repairing obligation** is the person who is required, under a lease or by virtue of an enactment, to repair or maintain that thing.

4 **Responsibilities of the Council**

4.1 The FSO applies to all workplaces and commercial buildings, and non-domestic parts of multi-occupied residential buildings, meaning that the FSO applies to a residential building's structure, external walls and common parts. There may be more than one person with duties under the FSO, as it applies to anyone who has control of the premises, and the legislation contains a hierarchy of duty holders intended to encompass all parties with control over fire safety. For multi-occupied properties, this could therefore be the landlord, the freeholder, the managing agent and, depending on the wording of any lease, individual tenants. The primary duty holder is the responsible person and, in law, the primary stakeholder when the local fire authority identifies fire safety breaches. The duties required

of a responsible person begin as soon as the relevant party takes ownership, occupation or control of the premises.

- 4.2 Fire authorities turn to contracts to ascertain the identity of the responsible person. Having reviewed a tenancy agreement from each building, we presume the Council is responsible for maintaining and repairing the Buildings' common parts. Whilst not all aspects of the common parts are set out in the leases, the third schedule outlines numerous responsibilities of the Council, whose costs can be recovered from the leaseholder. This demonstrates that the Council has control of the common parts. We have not been made aware that overall control of either Building has been transferred to a management company in a manner that would transfer the role of responsible person.
- 4.3 The Council would be defined as the responsible person by virtue of being the owner and potentially an employer. It is generally established that as landlords operate and receive income from properties with multiple units, and will have employees and contractors visiting such buildings, these are regarded as places of work, and therefore, landlords are analogous to employers.
- 4.4 As a responsible person, the Council (or another responsible person if mutually agreed) must carry out an assessment of the fire risks to people on the premises or within its vicinity. This must be completed to a suitable and sufficient standard, meaning that the fire risk assessment (**FRA**) is proportionate to the size and type of building. The FRA should identify general precautions that the responsible person must take in order to comply with the FSO. After completing an FRA, the responsible person should record prescribed information which includes the findings of the FRA, any precautions and fire safety arrangements that will be implemented and any group of persons who have been identified as being especially at risk. The responsible person must then ensure that the identified arrangements are adhered to. Such arrangements should again be proportionate and should cover the planning, organisation, control, monitoring and review of preventative and protective measures. The FRAs for both Hanover and Princess Court have highlighted issues related to compartmentation noting that these pose a substantial risk to life due to the lack of fire resistance between floors and the potential smoke spread.
- 4.5 Other duty holders would also require consideration in relation to the overarching strategy for managing fire risks in the Buildings. Article 5(3) of the FSO places a shared liability on any other person who has control of the premises concerning fire safety (this includes when engaged under a contract for the safety and maintenance of the premises). Whilst the responsible person's duties can be delegated to a competent third party, the associated responsibility and liability cannot. For example, many responsible persons use third parties, such as management companies, fire alarm maintenance companies and fire risk assessors. Article 5(3) allows fire authorities to use their enforcement powers against third parties where they are responsible for a breach of duty within their control. The Council should therefore consider any other organisations it engages and how these organisations may have a role in complying with the breaches highlighted by the CFRS. However, the Council is ultimately liable for the fire safety works as it is the responsible person within the meaning of the FSO as the building's owner.
- 4.6 The FSO creates a number of offences that the responsible person may commit, including failure to comply with fire safety duties. The Council may therefore be in breach of the FSO if it does not carry out the works required by the Notice. However, if the Council were to commit an offence under the FSO due to the act or default of some other person, for

example the tenants refusing access, then that person is also guilty of the offence, and charges may be brought against them, whether or not proceedings are taken against the Council.

5 **Implications of the Notification**

5.1 The most recent Notice of Deficiencies dated 23 August 2024 (the **Notice**) outlines CFRS's current view that fire safety breaches are still present. In order to be satisfied that such breaches exist, CFRS must be satisfied that the Council is the responsible person, that there has been a breach of a duty, and that the breach places persons at risk of death or serious injury in the event of a fire.

5.2 CFRS is of the view that the following breaches exist:

5.2.1 **Breach of Article 8: Duty to take general fire precautions**

Article 8 imposes an overarching duty to take general fire precautions, and CFRS suggests that some deficiencies raised in the FRA remain and have not been remedied. These failures relate to poor compartmentation within the Buildings. Specifically, *'pipes and service ducts, and other openings in the walls, floors, partitions and ceilings for the passage of building services not being adequately sealed with fire-resisting materials, or bushed, in order to minimise the danger of the spread of heat, smoke or fumes.'* If compartmentation is primarily poor in respect of building services, notably gas and electrical supply pipework, the risk of death and serious injury is likely. Both remain potential ignition sources in the event of fire and could contribute to fire spread and smoke spread between floors.

5.2.2 **Breach of Regulation 4(5) of the FSO**

CFRS suggests there has been a breach due to Hanover Court being an HRB and the requirement to ensure that there is a secure information box present that is inspected annually to ensure its contents meet the requirements of the legislation. The primary risk of severe injury and death arises out of the need for building floor plans within the secure information box. In the event of a fire, CFRS must navigate the building and understand critical points should they be required to save residents. This is a far less onerous duty to comply with than the breach of Article 8, and only applies formally to one of the Buildings.

5.3 The primary implication of the Notice is that deficiencies still exist, and if a fire were to occur, residents would be at a very real risk due to the lack of compartmentation. However, the FSO outlines that general fire precautions must be reasonable and reasonably practicable in the circumstances. The Council should consider whether there is a set of control measures that are both reasonable and reasonably practicable to meet the ongoing risk due to poor compartmentation which do not require the level of work and expense suggested by CFRS. There is merit in the argument that the precautions are not reasonable, given your intentions with the properties in the longer-term. There may also be an argument that with so few residents remaining in the Buildings, the fire risks are reduced, but this is a technical matter on which we cannot advise. Therefore, it would be best practice to defer to a fire risk assessor to try to identify alternative control measures to meet the risk of the poor compartmentation.

5.4 In the CFRS's view, sufficient evidence suggests that breaches of the FSO exist. Due to this, there is an ongoing risk of enforcement proceedings. If convicted, proceedings under the FSO attract unlimited fines and so can be very damaging financially and reputationally.

5.5 In the long term, if CFRS takes the view that an enforcement decision must be reached, the Council will have been made aware of these breaches for some time, meaning that there are two compounding aggravating factors. The first is that the breaches persist, and their seriousness increases over time. The second is that the Council's awareness increases its culpability for failing to remedy the breaches. Both factors may increase the likelihood of prosecution by the CFRS. Also, if sentenced, both would substantially increase any fines following conviction.

6 **Appealing the Notification**

6.1 The Notice is not a formal notice under the FSO. This means that you are not legally required to comply with its content, and failing to meet the October deadline does not constitute a further offence. However, as a result, there is no formal route to appeal the Notice under the FSO and the only avenue to push back formally would be via a judicial review. This is not a cost-effective solution. Under the CFRS Enforcement Policy, the issue of the Notice is the lowest level of action they take to identify and remedy breaches. Fire authorities generally prefer to provide information and advice to duty-holders in writing before deploying their enforcement powers.

6.2 However, if there is ongoing non-compliance, CFRS may consider issuing a formal notice. CFRS's Enforcement Policy states '*Formal action will be taken when the consequences of fire are such that people are likely to be harmed, suffer serious injury or death. It can require specific action or the cessation of certain activities.*' This matter falls well within the definition and there is therefore a material risk that ignoring the Notice entirely could result in formal enforcement action.

6.3 Formal enforcement action would usually involve service of an Alteration Notice, Enforcement Notice, or Prohibition Notice. If the Council were to be served a notice, it would likely be an Enforcement Notice. CFRS may serve a notice requiring the Council to undertake any actions necessary to remedy the breaches that pose a fire risk. Any failure to do so would be an offence of failing to comply with a statutory notice and could lead to enforcement proceedings. The Courts generally regard non-compliance with Enforcement Notices as a very serious fire safety offence, due to the numerous occasions the Council would have been made aware of the deficiencies and its ongoing failure to resolve them. Further to this, as an Enforcement Notice would require specific decision-making by individuals within the local authority, such as whether to comply or not, it can attract secondary liability offences whereby officers of an organisation can be held liable for the actions of that organisation. This, however, is less common.

6.4 As the Notice is not served under the FSO, this provides time to consider the approach to the substantive compartmentation issue and communicate to CFRS the long-term plans for the site. CFRS takes issue with the waking watch as a permanent solution to the fire safety risks, as it is recommended to be a temporary measure of no longer than 12 months which expires in January 2025. Therefore, the Council needs a set of control measures (other than improving structural compartmentation) that will satisfy CFRS in the intervening period between January 2025 and when the future of the Buildings is resolved. If the Council can maintain a consistent dialogue regarding suggested control measures, this should prevent

or at least delay the service of any notices. Depending on the time period beyond January 2025 when the waking watch is no longer permitted as a legitimate risk management measure, it may be appropriate to maintain this nonetheless, assuming that a suitably-qualified fire risk assessor can confirm this from a technical fire safety perspective.

- 6.5 If the Council is served with a notice, consideration should be given to the merits of appeal. This would have the effect of suspending the notice (except for Prohibition Notices) during the period of appeal. This would again provide further time but also a reconsideration of what is reasonable by a Court. Appeals also provide another catalyst for fire authorities to review their decision-making and they can occasionally resolve matters prior to attending any appeal hearing. In addition, the Court systems are heavily backlogged so it would also provide further time to resolve the future of the blocks. We recommend that you contact us immediately if you receive any further notices.

7 **Enforcement from Regulators**

- 7.1 In the event that you do not comply with the Notices, and the hazards are allowed to persist, it is possible that the Council may also face enforcement action from the Building Safety Regulator (**BSR**). Under the BSA 2022, the Regulator has the power to serve a compliance notice on the Council as the accountable person for Hanover Court, if the BSR considers that the Council is contravening a relevant requirement of the BSA 2022. Additionally, under the Social Housing (Regulation) Act 2023, the Regulator of Social Housing (**RSH**) has the power to inspect social housing properties, including properties owned by local authorities, and if necessary undertake emergency remedial action and/or require a registered provider to implement a Performance Improvement Plan and monitor its progress closely. Such additional intervention from the RSH seems unlikely given the current involvement of the CFRS, but should you receive any notices of this kind we recommend you obtain legal advice as a matter of urgency.

8 **Statutory Powers of the Council**

- 8.1 We have reviewed the statutory powers held by the Council to effect works that may be necessary to comply with your fire safety duties, particularly in instances where leaseholders have declined to provide necessary access.
- 8.2 All landlords are required to ensure properties within their portfolios are free from hazards likely to cause a health and/or safety risk to their tenants. For the purposes of the HHSRS, a 'hazard' means any risk of harm to the health or safety of an actual or potential occupier of a dwelling which arises from a deficiency in the dwelling or in any building or land within the vicinity (whether the deficiency arises as a result of the construction of any building, an absence of maintenance or repair, or otherwise).
- 8.3 The HA, through the HHSRS, creates powers for local authorities to identify and protect against potential risks and hazards caused by deficiencies in residential housing. The Council may undertake an inspection of the state and condition of a dwelling, usually as a result of an individual request or complaint, in order to identify any deficiencies. The Council should then produce an HHSRS assessment and hazard rating for the property. In circumstances where the Council is not the landlord, it may take enforcement action, including accessing the property and/or carrying out the emergency improvement works itself. However, there is case law to the effect that the Council cannot enforce the HHSRS against itself as a landlord.

- 8.4 We understand that Hanover Court is classified as an HRB under the BSA 2022. As the Council holds a legal interest in the Property, it will satisfy the above definition of an accountable person. We assume that the Council has also been designated as the principal accountable person.
- 8.5 Accountable persons have various statutory obligations and responsibilities under the BSA 2022 which include the management of building safety risks for occupied HRBs. An accountable person must take all reasonable steps to prevent a building safety risk materialising in relation to the part of the building for which it is responsible and to reduce the severity of any incident arising from such a risk materialising (s.84 BSA 2022). This includes carrying out works to the parts of the building for which the Council is responsible. Under the BSA 2022, a building safety risk includes a risk to the safety of people in or about a building arising from the spread of fire. The deficiencies identified by CFRS within the Notice would likely satisfy this.
- 8.6 An accountable person may request access to a property for the purposes of carrying out their duties to manage building safety risks. This request must:
- (a) be in writing;
 - (b) set out the purpose as to why the request is being made;
 - (c) explain why it is necessary to enter the property; and
 - (d) request access at a reasonable time with a notice period of at least 48 hours.
- 8.7 In the event that entry is refused, an accountable person may apply to the County Court for a court order for access in order to facilitate its duties under s.84 of the BSA 2022. The Court may also authorise the taking of measurements, photographs, recordings or samples by the accountable person. The Council is unlikely to be able to claim that it lacks sufficient statutory powers to implement the requirements of the Notice in respect of Hanover Court.

9 Powers under the Leases

- 9.1 A review of the leases provided and the leases downloaded has made it clear that there are two main types of lease.
- 9.2 The attached Schedule of Leases identifies the relevant terms and which type (1 or 2) applies to the title numbers or flat numbers of the leases with which we have been provided or have downloaded. Below we consider the implications of the lease terms for the Council's rights under the leases.

Demise

- 9.3 Under all of the leases, the Council owns and has the repairing obligation for *'the main structural parts of the buildings'*.
- 9.4 In the Type 1 leases the Council excepts from the demise of the Flat *'the main structural parts of the building in which the flat is situate including the roof foundations and external parts'*

9.5 In the Type 2 leases the Council excepts from the demise of the Flat '*the main structural parts of the building and those other parts which the Landlord is liable to repair, renew or redecorate under this lease*', that is, among other obligations, the Common Parts.

9.6 The repair obligations are set out in detail below.

Statutory Obligations

9.7 The tenants are obliged to comply with statute. This is set out in the Type 1 leases at clause 2(7)(b) below:

To execute all such works as are or may be under or in pursuance of any Act or Acts of Parliament already or hereafter to be passed be directed or required by any district council or by any local or public authority to be executed at any time during the said term upon or in respect of the flat whether by the Landlord or the Tenant and to keep the Landlord indemnified against all claims demands and liability arising thereout.

9.8 In the Type 2 leases a similar obligation is set out at clause 6(3).

(a) The Tenant must comply with all statutes, regulations, orders, statutory instruments and byelaws whether made before or after the date of this lease and with all lawful directions and requirements of any public authority in respect of the Flat or the Tenant's occupation or use of the Flat.

(b) The Tenant must carry out all works required in respect of the Flat by or under statutes, regulations, orders, statutory instruments and byelaws whether made before or after the date of this lease.

9.9 The tenants do therefore have an obligation under the lease to carry out any directions of the fire authority 'in respect of the Flat' but this would not extend to works in the Common Parts or the Structure that are the responsibility of the Council.

9.10 We understand that the works required, while they may necessitate entry into the flats and disruption within the flats, are to be carried out within the structural parts of the Buildings and within the service conduits, which are part of the landlord's demise and repairing responsibility.

Rights of Entry

9.11 The tenants are obliged to allow the Council to enter the flats for the purposes of both inspecting any want of repair on the part of the tenant and also carrying out any repairing or other obligations it has under the leases.

9.12 Repairing obligations on the tenant are for the interior of the Flat but also importantly all doors and windows.

9.13 In the Type 1 lease this is expressed as '*the flat and everything demised hereunder and additions thereto and the Landlord's fixtures and fittings sanitary apparatus and appurtenances installed in or affixed to the flat and the doors and window glass window sashes frames cords catches and fastenings thereof*'.

9.14 In the Type 2 leases the Tenant has repairing obligations for all non-structural parts of the Flat, all doors and windows as well as 'all electricity cables, mains and wiring' which solely serves the Flat.

9.15 The Council's rights to enter are, in the Type 1 leases, set out as below at clause 2(9):

To permit the Landlord and its employees surveyors and agents at all reasonable times upon prior written notice (except in the case of an emergency) to enter any part of the flat for the purpose of repairing any part of the building in which the flat is situate and for the purpose of making repairing maintaining rebuilding cleansing lighting and keeping in good order and condition all sewers drains channels pipes cables watercourses gutters wires party structures or other conveniences belonging to or serving or used for the flat or the building in which the flat is situate (without prejudice however to the obligations of the Tenant hereunder with regard thereto) and also for the purpose of laying down maintaining repairing testing disconnecting stopping up removing or renewing drainage gas and water pipes and electric wires cables and conduits for similar purposes.

9.16 There are similar reservations in the Second Schedule at paragraph1(ii) as below:

The right for the Landlord and its employees or agents upon giving previous written notice (and in case of emergency without notice) at all reasonable times to enter any part of the flat for the purpose of carrying out repairs to the building in which the flat is situate and for carrying out its obligations under this lease PROVIDED THAT the Landlord shall make good all damage to the flat or to the fixtures fittings sanitary apparatus appurtenances goods or effects installed therein or affixed thereto caused by the carrying out of its obligation.

9.17 The Council's rights to enter for necessary repairs of the building are set out in the Type 2 leases as below at clause 13.3(a):

The Tenant will allow the Landlord, its employees and agents, and others authorised by the Landlord at all reasonable times on prior notice (except in an emergency) to enter the Flat to repair the Building or to carry out any other works for the benefit of the Building or the Flat.

9.18 At clause 13.1(a) the Council also has the right to enter to carry out any other obligations it has under the lease:

The Tenant must permit the Landlord, its employees or agents, and others authorised by the Landlord, on reasonable notice (except in an emergency), to enter the Flat

- to examine its state and condition*
- to examine how it is being used, or*
- to exercise any of the Landlord's rights under this lease.*

9.19 The Council further has a reserved right in paragraph 2 of Schedule 2 of the leases to 'construct or maintain in the Flat any conducting media for services to or from any part of the Building or adjoining land of the Council.'

9.20 As with the Type 1 lease, the Council must make good all damage to the Flat caused by such entry and/or work (Clause 13.3(b)).

9.21 If the Council can argue it has a right of entry to the flats under the leases to carry out the necessary works (but as we note below, this is not absolutely clear), it may be able to obtain an injunction to allow entry to carry out the works if tenants refuse entry. It would therefore appear that the Council is not prevented from carrying out the works required by CFRS through the terms of its leases.

Repair or Improvement?

9.22 However, the Council's right of entry to carry out works depends on whether the works come within the obligations on the Council under the leases.

9.23 One of the issues with dealing with rectification of defects is that the obligation to 'repair' has been established in case law as requiring 'disrepair', and an inherent defect, created at the time the building was constructed, is not a 'disrepair'.

9.24 In the Type 1 leases the Council's right of entry is to 'repair' any parts of the building. However, it is attached to a widely drafted set of obligations including rebuilding, removing and renewing and '*keeping in good order and condition*' '*all sewers drains channels pipes cables watercourses gutters wires party structures*'. There is not a definition of channels or pipes in the leases but it is possible this could be applied to the risers and elements of the compartmentation that requires remediation. There is some case law that would suggest that '*keeping in good order and condition*' could be said to include ensuring that the said elements were safe and did not represent a risk to residents.

9.25 In the Type 2 leases the repairing obligations at clause 7.1 are to *repair and where necessary renew the structure and the exterior of the Building*, including among other elements:

- *interior structural walls, but not the interior surface of any wall bounding the rooms of the Flat or the surface of any interior structural wall*
- *timbers, joists, beams and structural slabs*
- *the pipes, wires cables and sewers which provide services to the Building*
- *any boilers and heating apparatus serving the Building*

9.26 The Council is also permitted entry to '*carry out any other works for the benefit of the Building or the Flat*'.

9.27 Again, these obligations would not on the face of it cover remediation of defects, but it is possible the Council could rely on the fact that it was carrying out works 'for the benefit of the Building or the Flat'.

9.28 We consider that, while there would be a risk this could be challenged were the Council actually to go ahead and carry out the Works and charge leaseholders, it is at least in the first instance arguable that the Council has the right to carry out the Works and enter the flats if necessary in order to do so.

Temporary removal of tenants and Compensation Costs

9.29 While the Council does not have any explicit right to require the tenants to move to temporary accommodation while works are carried out, if it can establish that it has the right

to carry out the works, and it is necessary for the tenants to move to temporary accommodation because there is no other 'reasonable' alternative course of action, the Council could potentially require the tenants to be decanted.

9.30 All the leases contain a covenant for quiet enjoyment and in any event there are common law rights to quiet enjoyment and non-derogation from grant. Hence tenants may have a right to compensation for the noise and disruption if it is not considered a reasonably necessary result of works that the Council is obliged to carry out.

10 **Recovery under the Service Charge**

10.1 Both Princess and Hanover Court are 'relevant buildings' under the BSA 22.

10.2 Recovery of costs of the works will depend on whether the defects are 'relevant defects', that is, they arise from works carried out between 29 June 1992 and 28 June 2022 (the 'relevant period') which have given rise to a building safety risk.

10.3 If this is the case, recovery of the costs of the works are governed by the restrictions in Schedule 8 of the BSA 22 and in the associated regulations.

10.4 Both buildings pre-date 1992, and it is likely therefore that the defects are not 'relevant defects', but this is not a completely straightforward question. If major works were carried out in the relevant period that might have impacted on the defects or ought reasonably to have included steps that could have remedied the defects, then they could be considered 'relevant defects' arising from something 'not done' at that point.

10.5 This is a complex area of the legislation and to give definitive advice we would need to see further details of the defects, and details of works carried out in the relevant period, and potentially obtain expert technical advice.

10.6 If the defects are considered to be relevant defects, then in order to determine whether costs are recoverable from leaseholders, we would need to review what steps the Council has taken already in regard to issuing landlord's certificates in relation to the defects; requesting leaseholder's deeds, and establish whether leaseholders hold qualifying leases or not.

10.7 If the defects are not relevant defects, the usual service charge clauses and statutory obligations with regard to 'reasonableness and s.20 notices apply.

10.8 In the Type 1 leases the Council may recover cost incurred in meeting its obligations to 'repair' the Building, which is subject to the same caveats as noted above. The Council does also have the right at paragraph 11 of Schedule 3 to charge for costs incurred *'in taking all steps deemed desirable or expedient by the landlord for complying with ... the provisions of any legislation or orders or statutory requirements thereunder concerning town and country planning public health highways streets drainage or other matters relating or alleged to relate to the building'*. There would likely be an argument for saying that this would cover the costs of complying with fire safety legislation but we would be doubtful that a court would allow quite significant costs to be recharged under this type of 'sweeper' clause if they were not recoverable under the repairing obligations.

10.9 The service charge clauses in the Type 2 lease are in almost identical terms and the same analysis applies.

10.10 We consider that, while there would be a risk this could be challenged were the Council actually to go ahead and carry out the Works and charge leaseholders, it is at least in the first instance arguable that the Council has the right to charge leaseholders for the Works.

11 **Conclusion and next steps**

11.1 The Council has statutory powers to gain entry to the flats to undertake compartmentation works, and it may also have rights under the leases, although the case for this is not as clear as we would like, given that the fire safety works may not be classed as "repairs" if they relate to inherent defects. Nonetheless, the Council may not consider implementation of the works to be reasonably practicable in the circumstances, even if it has the power to undertake them,

11.2 Despite the forthcoming plans to demolish and rebuild the Buildings, the Council cannot ignore the safety deficiencies identified by CFRS, so its strategic aim should be to identify alternative means of putting in place control measures that mitigate the risk posed by poor compartmentation, without having to carry out expensive compartmentation works which would ultimately be demolished as part of the redevelopment plans.

11.3 We would suggest deferring to a fire risk assessor on this specific issue as to whether there is a control measure or group of measures that will ensure the safety of residents until the Council is in a position to redevelop the site. This advice should be commissioned as a matter of urgency, both to demonstrate the Council's compliance with its statutory fire safety requirements under the FSO, and to identify as soon as possible if an alternative approach to keeping residents safe, is reasonably practicable.

11.4 If a set of measures can be identified, then the Council should continue its dialogue with CFRS to obtain its agreement that those measures are satisfactory for the relevant period residents remain in the buildings. A proactive approach should provide weight, dissuading CFRS from using its enforcement powers and serving notices that would legally require the works to be undertaken. As set out above, the Council could however consider, and likely appeal, any notice received, which would provide further time.

11.5 In the event the Council is left with limited alternative options to address the fire risk, and must undertake the works, the powers within the BSA 2022 could be deployed to provide access to residential units. Where entry is refused, you could apply to court for an injunction.

11.6 If there are no viable options other than to carry out compartmentation works, this would increase the pressure on the Council to secure private treaty agreements with the leaseholders to gain vacant possession before the Council is forced to undertake expensive, and ultimately unnecessary, compartmentation works. Therefore negotiations with leaseholders should be given a high priority.

11.7 Unfortunately, there is no power under either the FSO or the BSA 22 for the Council to remove the residents permanently from an unsafe building. The FSO provides CFRS the power to prohibit the use of the building if it deems the risk to be so severe that the residents would have to leave, however in this scenario the Council would have to rehome them. Prohibition notices are extremely rare because the safety risk must be balanced against the threat of rendering persons homeless. The Council could explore with the CFRS whether they would consider this option subject to the Council providing alternative accommodation,

but we suspect that they will be reluctant to proceed in this manner as it would be draconian, and the expense could outweigh the compartmentation works.

11.8 Going forward, the Council will need to consider the use of compulsory purchase powers to gain vacant possession of the Buildings as soon as possible, given the on-going safety risks. Whilst an assessment of the case for compulsory purchase is beyond the scope of this advice, we recommend that the Council explores this further as soon as possible given that it can take around 18 months from the making of an order before the order is confirmed. Please let us know if you would like us to advise you further on the promotion of a compulsory purchase order.

11.9 We recommend that you:

11.9.1 Appoint a suitably-qualified fire risk assessor to advise on what temporary measures (pending demolition) can be put in place instead of carrying out the compartmentation works;

11.9.2 Present the outcome of the above advice to the CFRS, explaining the Council's intentions to demolish the buildings and seeking agreement on the way forward;

11.9.3 In the unlikely event that there are no reasonable alternatives to compartmentation works being carried out, write to the leaseholders setting out the fire safety issues that are in play, and setting out the Council's legal powers (under the leases and statutory powers) to gain access, and inviting them to agree a relocation package whilst the works are being undertaken;

11.9.4 In tandem with the letter mentioned at 11.9.3 above, write to the leaseholders offering to acquire their interests and setting out a package of compensation in each case;

11.9.5 As soon as possible explore the case for making a compulsory purchase order to mitigate against the risks of private treaty negotiations failing.

Trowers & Hamlins LLP

20 September 2024

PRIVATE & CONFIDENTIAL

REGULATORY REFORM (FIRE SAFETY) ORDER 2005

Fire Risk Assessment

SERVICE AREA: Housing Services



Assessed Area: Hanover Court > All Areas

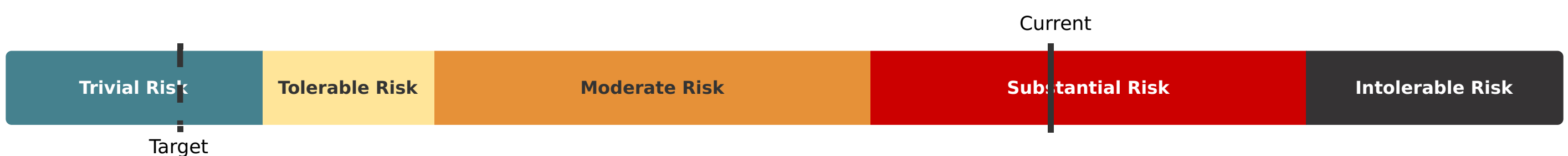
Responsible Person: Will Barfield

Manager: Fire Safety Compliance

Risk Assessor: Fire Safety Compliance

Date of Inspection: 07 May 2023

Recommended Review Date: 07 May 2024



Executive Summary

This assessment records the fire safety measures in place at the time the assessment was conducted, and lists significant findings and a recommended appropriate remedial action. It also provides guidance for the Responsible Person on how to maintain a satisfactory standard of fire precautions within the building concerned. The subject areas concerned are;

Responsible Person

The Responsible Person should ideally hold a senior or at least a responsible position within the company and have sufficient authority to allocate and mobilise finances and to control and organise members of staff.

Manager

In the context of this report the Manager is the person who will receive all the actions found during the assessment and will allocate them to the relevant people to get the risk removed or reduced to a manageable level.

Competent Persons

Competent Persons (Fire Wardens) are employees that have had additional instruction and training in fire safety, they are there to assist the responsible person in fulfilling their statutory duties.

Managing Fire Safety

Good management of fire safety is essential to ensure that fires are unlikely to occur; that if they do occur they are likely to be controlled quickly, effectively, and safely, and that everyone should be able to escape to a place of safety easily and quickly.

Record Keeping

In the event of a fire in the workplace you may need to provide evidence to the enforcing authorities when asked that you have complied with the fire regulations. It is helpful to keep a dedicated record of all maintenance of fireprotection equipment and staff training. In all cases the quality of records may be regarded as a good indicator to the enforcing authorities of the overall quality of the fire safety management structure.

Building Occupancy

Some buildings may have two or more main uses that are not ancillary to one another. For example offices over shops from which they are independent. In such cases, each of the uses should be considered as belonging to a purpose group in its own right. In other cases and particularly in some large buildings, there may be a complex mix of uses. In such cases it is necessary to consider the possible risk that one part of a complex may have on another and special measures to reduce the risk may be necessary.

Fire Alarm

All buildings or occupied areas should have arrangements for detecting fire, where a work place is equipped with fire detectors and alarms they should be in operational order whilst the premises are occupied and be maintained and tested to comply with the relevant code of practice.

Emergency Lighting

The primary purpose of emergency escape lighting is to illuminate escape routes, but it is also required to illuminate safety equipment such as firefighting equipment, fire alarm call points, and safety signage. The size and type of your premises will determine the complexity of the emergency escape lighting required. Where installed it should be in good working order and maintained to comply with the relevant code of practice.

Compartmentation/Fire-stopping

The spread of fire within a building or area can be restricted by sub-dividing it into compartments separated from one another by walls and/or floors of fire-resisting construction. The object is twofold:

- a) to prevent rapid fire spread which could trap occupants of the building; and
- b) to reduce the chance of fires becoming large, on the bases that large fires are more dangerous, not only to occupants and fire and rescue personnel, but also to people in the vicinity of the building.

Fire Fighting Equipment

You have a responsibility for the provision of appropriate fire-fighting equipment. It is also your responsibility to check that all fire-fighting equipment is in the correct position and in satisfactory order before the premises is used.

Means of Escape

A Route or routes provided to ensure safe egress from the premises or other locations to a place of safety. The general principle for means of escape is that any person confronted by an outbreak of fire within a building can turn away from it and make a safe escape initially to a place of relative safety, a protected stair, or corridor; which should lead to a place of ultimate safety which should be clear and free of the building.

Hazards: Arson/heating/smoking/cooking/electricity

The first step in the assessment is the identification of fire hazards. In determining these hazards, account should be taken of the three most common causes of fire, which together account for around two-thirds of all fires. These are arson, smokers' materials and electrical faults.

Further consideration should be given to other recognised or common causes of fire, such as heating appliances, cooking and contractors' operations.

Fixed installations

These are fire-fighting systems which are sometimes installed within the structure of the building and could include hose-reels and sprinkler systems.

Contractors & industrial processes

Carelessness by outside contractors is a common cause of fire, including many fires that result in serious financial loss. Cutting, welding and use of blow torches are particular sources of ignition,

Not all of such works are caused by outside contractors. It has been estimated, however, that perhaps 20-25% of all non-domestic fires result from on-going work', such as refurbishment, repair and construction. The Building occupants/employees should be informed as to the significant findings of assessments. The following should be displayed for the benefit of all occupants and visitors.

- A copy of the building plan indicating the means of escape (where escape routes are complex and building occupants are not familiar with the building).
- Details of any significant findings
- Details of the Responsible Person

It is considered that the building occupants/users will include employees, contractors, visitors and emergency service personnel as well as any other person who may be in and around the premises.

Ownership of the Fire Risk Assessment

Regardless of whether the fire risk assessment is carried out by, for example, staff from an outside organisation, or a third party fire risk assessor, the ultimate responsibility for the adequacy of the risk assessment rests with the "responsible person" defined by legislation as responsible for ensuring that the fire risk assessment is carried out and that the fire precautions are adequate.

Introduction

For the Responsible Person at these premises, this document provides information regarding the standard of fire safety observed, and serves as a record as required by The Regulatory Reform (Fire Safety) Order 2005 and the

Management of Health and Safety at Work Regulations 1999.

The RRO places a requirement for all responsible persons to:

- Appoint one or more competent persons, depending on the size and use of the premises, to carry out any of the preventative and protective measures required by the Order.
- Provide your employees with clear and relevant information on the risks to them identified by the fire risk assessment, and about the measures you have taken to reduce the risks and prevent fire occurring.
- Consult your employees or their elected representatives about nominating people to carry out particular roles in connection with fire safety and improving the general fire precautions in the workplace.
- Before you employ a child, provide a parent or guardian with clear and relevant information regarding the risks to that child that have been identified in the fire risk assessment, and the measures you have or propose to put in place to safeguard that child.
- Inform non-employees, such as contractors and temporary workers of the risks to them, and provide them with information as to the nominated competent persons, and the general fire precautions provided in the workplace.
- Co-operate and co-ordinate with other building or site responsible persons regarding the findings of your risk assessment which may affect the safety of their employees.
- Provide the employer of any person from an outside organisation who may be working on your premises with relevant information as to the risks to them as outlined in your risk assessment, and the preventative and protective measures taken to secure their safety.
- If you are not the employer but have any control of premise which contain more than one workplace, you are responsible for ensuring that the requirements of the Order are complied with in those parts over which you have control.
- Consider the presence of any Hazardous or dangerous substances and the risk that they present to the occupants of the building, and undertake further assessment in the form of a Dangerous Substance Explosive Atmosphere Regulations assessment (DSEAR) assessment.
- Establish a suitable means of contacting the emergency services and providing them with relevant information regarding the storage or use of dangerous substances.
- Provide appropriate information, instruction and training to you employees, during normal working hours, about the fire precautions in your premises , when they first start working for you, (induction training) and from time to time during their employment (refresher training).
- Ensure that the premises are provided with appropriate fire-fighting equipment, fire detection and warning and emergency routes and exits, and that any equipment provide is maintained by competent persons and in efficient working order, good repair and fir for purpose.
- Your employees must co-operate with you to ensure that the premises are safe from fire and its effects, and must not do anything that will place themselves or other people at risk.

RISK PROFILE

To determine the appropriate means of escape and design features of the building, for life safety, a Risk Profile has been established following the methodology detailed in the current edition of 'BS9999: Code of practice for fire safety in the design, management and use of buildings'. This calculation is based on two main factors: occupancy characteristic and fire growth rate.

Once the risk profile has been determined, the minimum package of fire safety measures that should be provided, in accordance with BS9999, such as: travel distance, stair and exit widths and level of fire alarm and detection can be established.

Establishing the Risk Profile gives scope for a more interpretative approach, on a case by case basis, which takes into account the specific features of an individual building. This is especially significant when considering the issue of escape routes and fire exits in existing premises, particularly if they are of an historical or heritage nature.

Variation of the risk profile can be achieved by looking at existing and/or additional measures, which could be provided beyond what is determined as the minimum standard by BS9999. This allows for a more flexible approach to determine the fire safety measures that are required as an alternative to following other prescriptive guidance.

Risk Profile Matrix

Occupancy Characteristic	Fire Growth Rate			
	Slow	Medium	Fast	Ultra-Fast
Occupants awake & familiar with building	A1	A2	A3	Unacceptable without the addition of an effective localized suppression system or sprinklers
Occupants who are awake and unfamiliar with the building	B1	B2	B3	
Occupants who are likely to be asleep; long-term individual occupancy	Ci1	Ci2	Ci3	
Occupants who are likely to be asleep; long-term managed occupancy	Cii1	Cii2	Cii3	
Occupants who are likely to be asleep; short-term occupancy	Ciii1	Ciii2	Ciii3	
Other	Property is outside the scope of BS9999			

Your Risk Assessment Summary

Summary of Areas Requiring Attention

Risk Level Key: Trivial Risk Tolerable Risk Moderate Risk Substantial Risk Intolerable Risk

FIRE PROTECTION MEASURES

Means of Escape

Means of Giving Warning in Case of Fire

Measures to Limit Fire Spread and Development

MANAGEMENT OF FIRE SAFETY

Procedures and Arrangements

Greater detail on the areas requiring attention can be found in the relevant sections of this document.

Summary of Findings and Action Plan

Section	Risk Grading	Finding and Action Required	Photo Y N	Job No / Date work
---------	--------------	-----------------------------	-----------	--------------------

				complete
Means of Escape	-	<p>Is it considered that the premises are provided with reasonable means of escape in case of fire?: <i>N/A</i></p> <p>📌 Complete building (Complete Building)</p> <p>Finding</p> <p>The means of escape are not ideal when compared to current benchmark standards, but reasonable given the age and features of the building if other measures are addressed as per the recommendations for action contained in this and other sections of this report.</p>	N	
Means of Escape	-	<p>Adequate design of escape routes?: <i>N/A</i></p> <p>📌 Complete building (Complete Building)</p> <p>Finding</p> <p>As above</p>	N	
Means of Escape	-	<p>Adequate provision of exits?: <i>Yes</i></p> <p>📌 Complete building (Complete Building)</p> <p>Finding</p> <p>Exits are at the walkways and into the two main staircases with an open exit at the base of the stairs leading to ultimate safety.</p>	N	
Means of Escape	-	<p>Exits easily and immediately openable where necessary?: <i>N/A</i></p> <p>📌 Complete building (Complete Building)</p> <p>Finding</p> <p>There are no final exit doors in any local or on any level in the building - access is open.</p>	N	
Means of Escape	-	<p>Fire exits open in direction of escape where necessary?: <i>N/A</i></p> <p>📌 Complete building (Complete Building)</p> <p>Finding</p> <p>See above.</p>	N	
Means of Escape	-	<p>Avoidance of sliding or revolving doors as fire exits where necessary?: <i>N/A</i></p> <p>📌 Complete building (Complete Building)</p> <p>Finding</p> <p>See above.</p>	N	
Means of Escape	-	<p>Satisfactory means for securing exits?: <i>N/A</i></p> <p>📌 Complete building (Complete Building)</p> <p>Finding</p> <p>As above</p>	N	
Means of Escape	-	<p>Reasonable distances of travel: Where there is a single direction of travel?: <i>Yes</i></p> <p>📌 Complete building (Complete Building)</p> <p>Finding</p> <p>Depending on the benchmark technical approach taken (balcony access) the travel distances are acceptable. However, other areas of this report make reference to smoke venting and how this is potentially limited impacting on the travel distances from different parts of the building.</p>	N	
Means of Escape	-	<p>Reasonable distances of travel: Where there are alternative means of escape?: <i>Yes</i></p> <p>📌 Complete building (Complete Building)</p> <p>Finding</p> <p>Depending on the benchmark technical approach taken (balcony access) the travel distances are acceptable. However, other areas of this report make reference to smoke venting and how this is potentially limited impacting on the travel distances from</p>	N	

		different parts of the building.		
Means of Escape	Tolerable Risk	<p>Suitable protection of escape routes including provision of fire doors/hatches including to roof voids, individual dwellings/flats, compartment doors, riser cupboard doors and risk rooms?: <i>No</i></p> <p>📍 Complete building (Complete Building)</p> <p>Finding</p> <p>An inspection of the storage/electrical cupboard doors revealed that the doors are non fire rated and the integrity of the door set and therefore the escape route may be compromised.</p> <p>Actions Required</p> <p>⊗ Storage cupboard doors - upgrade/replace</p> <p><i>An inspection of the storage cupboard doors revealed that the doors are non fire rated and the integrity of the door set and therefore the escape route may be compromised. These doors should be added to the program of works for upgrading or replacement. The doors are secure without openings at the top and bottom (like Kingsway). From being able to observe one cupboard (empty and unlocked) there is no power supply so no ignition source.</i></p> <p>— complete by 04 Jul 2023 to reduce the risk by 50%</p> <p>⊗ Electrical cupboard doors - upgrade/replace</p> <p><i>An inspection of the electrical cupboard doors revealed that the doors are non fire rated and the integrity of the door set and therefore the escape route may be compromised. These doors should be added to the program of works for upgrading or replacement.</i></p> <p>— complete by 16 May 2024 to reduce the risk by 50%</p>	N	
Means of Escape	-	<p>Suitable fire precautions for all inner rooms?: <i>N/A</i></p> <p>📍 Complete building (Complete Building)</p> <p>Finding</p> <p>No inner rooms present.</p>	N	
Means of Escape	-	<p>Escape routes unobstructed?: <i>Yes</i></p> <p>📍 Complete building (Complete Building)</p> <p>Finding</p> <p>See Housekeeping above</p>	N	
Means of Escape	-	<p>It is considered that the premises are provided with reasonable arrangements for means of escape for disabled people.: <i>N/A</i></p> <p>📍 Complete building (Complete Building)</p> <p>Finding</p> <p>The building was not designed to accommodate disabled persons/PRM. Any issues with individual occupants being able to escape should be identified through a PCFRA (person centred fire risk assessment).</p>	N	
Means of Escape	Tolerable Risk	<p>Suitable protection of escape routes including provision of fire doors/hatches including to roof voids, individual dwellings/flats, compartment doors, riser cupboard doors and risk rooms?: <i>No</i></p> <p>📍 First floor (First Floor)</p> <p>Finding</p> <p>Escape route fire protection - the glass block wall may not provide the same level of fire resistance as the flat entrance door. This could allow fire and smoke to enter the escape route.</p> <p>Actions Required</p> <p>⊗ Escape route separation - not FR</p>	Y	

		<p><i>The external wall to flat 18 on the first floor is constructed of glass blocks. This flat is at the base of the escape staircase and was the former caretakers flat. It is believed to be an original constructional feature.</i></p> <p><i>An inspection in 2019 was unable to confirm that it provides the required fire resistance (integrity/insulation/stability) to protect the escape route.</i></p> <p><i>Options should be considered to remedy this and might include: replacing the wall or, providing a protected inner hallway or, linking fire detection in flat 18 to the flats above on the escape staircase.</i></p> <p>— complete by 23 Jun 2021 to reduce the risk by 100%</p>	
Means of Escape	Substantial Risk	<p>Suitable protection of escape routes including provision of fire doors/hatches including to roof voids, individual dwellings/flats, compartment doors, riser cupboard doors and risk rooms?: <i>No</i></p> <p>📍 Hanover Court, Coronation Street, Cambridge</p> <p>Finding</p> <p>A survey of flat entrance doors and the door furniture in 2019 revealed that the doors on escape routes were non fire rated doors. The majority of tenant doors (50/51) in the blocks were replaced in 2020/21. However, leasehold doors are still mostly non-compliant.</p> <p>Actions Required</p> <p>⊗ Leaseholder Flat entry doors-non FR</p> <p><i>All leasehold doors in a recent survey (end of 2019) were identified as HIGH priority as they are non fire rated flat entry doors and need to be replaced with an FD30S standard door.</i></p> <p><i>Leaseholders were written to in 2020 and offered a replacement door as part of the Councils program of work. However, many of the doors across the block remain non-compliant. The Council should continue to pursue flat entry door replacement where there is non-compliance. The Leasehold Team are currently in the process of writing to leaseholders again to request evidence of compliance.</i></p> <p>— complete by 12 Apr 2022 to reduce the risk by 50%</p> <p>⊗ Tenanted Flat entry doors-non FR</p> <p><i>The majority of tenant doors (50/51) in the blocks were replaced in 2020/21.</i></p> <p><i>The Council should continue to pursue flat entry door replacement where there is still non-compliance.</i></p> <p>— complete by 12 Apr 2022 to reduce the risk by 50%</p>	Y
Measures to Limit Fire Spread and Development	Substantial Risk	<p>It is considered that there is: Compartmentation of a reasonable standard including external faces of buildings: <i>No</i></p> <p>📍 Complete building (Complete Building)</p> <p>Finding</p> <p>Compartmentation does not appear to be to the required fire resistance. Following fires in blocks of similar design breaches in the service riser became apparent. The design of the riser in this block is very similar and likely to present the same issues allowing smoke and possibly fire spread through the building affecting other occupants away from the compartment of origin.</p> <p>Actions Required</p> <p>⊗ Compartmentation to provide 60 minutes fire resistance in blocks above of 6 storeys</p> <p><i>There is a requirement for compartmentation to provide 60 minutes fire resistance in blocks of 6 storeys and above.</i></p> <p>— complete by 23 Sep 2021 to reduce the risk by 50%</p> <p>⊗ Structural investigation-breach of compartment wall/floor and external wall system</p>	N

		<p><i>Further structural investigation is required to ascertain the consequence of the compartmentation breach, to establish if the following actions are required:</i></p> <ul style="list-style-type: none"> • <i>Type 2, 3 or 4 Fire Risk Assessment.</i> • <i>Change to the Fire Strategy of the building from “Stay Put” to Simultaneous Evacuation or other evacuation strategy as appropriate.</i> • <i>Installation of Automatic Fire Detection System</i> <p><i>The survey should include a fire risk appraisal of the external wall system (PAS 9980) to inform the Building Safety Case under The Building Safety Act 2022.</i></p> <p>— <i>complete by 23 Dec 2020 to reduce the risk by 50%</i></p>		
Measures to Limit Fire Spread and Development	-	<p>It is considered that there is: Reasonable limitation of linings that might promote fire spread: Yes</p> <p>📌 Complete building (Complete Building)</p> <p>Finding</p> <p>Escape routes are mostly sterile with non-combustible linings (Believed to be Class O/B-s3,d2 - subject to test).</p>	N	
Measures to Limit Fire Spread and Development	-	<p>As far as can reasonably be ascertained, fire dampers are provided as necessary to protect critical means of escape against passage of fire, smoke and combustion products in the early stages of a fire?: N/A</p> <p>📌 Complete building (Complete Building)</p> <p>Finding</p> <p>See recommendation above regarding compartmentation/service risers.</p>	N	
Measures to Limit Fire Spread and Development	Tolerable Risk	<p>It is considered that there is: Compartmentation of a reasonable standard including external faces of buildings: No</p> <p>📌 Complete building (Complete Building)</p> <p>Finding</p> <p>The materials on the external face of the building and/or the installation methods and materials could not be determined and appeared to be of sufficient amounts to be regarded as likely to contribute to external fire spread unless of a non-combustible material and should be examined/tested and the installation confirmed.</p> <p>Balconies have been enclosed by residents. It is not known if these were authorised and compliant with building regulations.</p> <p>Actions Required</p> <p>⊗ External balconies-testing</p> <p><i>The materials on the external face of the building and/or the installation methods and materials could not be determined and appeared to be of sufficient amounts to be regarded as likely to contribute to external fire spread unless of a non-combustible material and should be examined/tested and the installation confirmed. (Government cladding ban for combustible cladding on buildings limits materials to products achieving a European Classification of Class A1 or A2-s1,d0 when tested in accordance with BS EN 13501-1 :2007+A1:2009. This also includes balconies attached to external walls as regarded by building regulations as specified attachments and above 18m are subject to the same requirements and must achieve the same European Classification. Below this height the specified attachment should be risk assessed and appropriate measures implemented).</i></p> <p><i>There are a number of balcony enclosures that may have fire safety implications both internally and externally and require further investigation and assessment.</i></p> <p>— <i>complete by 04 Jul 2023 to reduce the risk by 50%</i></p> <p>⊗ Resident use of balconies</p> <p><i>It was not possible for the assessor to externally check by observation the use of all the resident balcony spaces given the height of the building. In discussing this with the caretaker there are some balconies of concern (flats 15 and 20) that may present additional fire hazards. With the support of the housing management team these should be investigated, and information provided to residents more generally about the</i></p>	Y	

		<p>usage of balconies.</p> <p>— complete by 04 Jan 2023 to reduce the risk by 50%</p>		
Measures to Limit Fire Spread and Development	Trivial Risk	<p>It is considered that there is: Compartmentation of a reasonable standard including external faces of buildings: <i>No</i></p> <p>📍 Hanover Court, Coronation Street, Cambridge (Third Floor)</p> <p>Finding</p> <p>Refuse chute cover missing - this could lead to smoke from a bin room fire emerging on the landing/walkway although this is at the end of the walkway so its impact would not be so significant on the means of escape.</p> <p>Actions Required</p> <p>⊗ Refuse chute cover missing</p> <p><i>The refuse chute cover near the lift on the 3rd floor walkway is missing and should be replaced.</i></p> <p>— complete by 16 Nov 2023 to reduce the risk by 100%</p>	Y	
Means of Giving Warning in Case of Fire	-	<p>Reasonable manually operated electrical fire alarm system provided?: <i>N/A</i></p> <p>📍 Complete building (Complete Building)</p> <p>Finding</p> <p>There is no communal fire alarm system.</p>	N	
Means of Giving Warning in Case of Fire	-	<p>Automatic fire detection provided- Part of the premises only?: <i>Yes</i></p> <p>📍 Complete building (Complete Building)</p> <p>Finding</p> <p>Flat units only have fire detection believed to be BS 5839-6 systems providing at least LD3 coverage.</p>	N	
Means of Giving Warning in Case of Fire	Substantial Risk	<p>Extent of automatic fire detection generally appropriate for the occupancy and fire risk?: <i>No</i></p> <p>📍 Complete building (Complete Building)</p> <p>Finding</p> <p>The premises should be provided with an appropriate fire warning system to a correct grade and with a correct detection level according to the occupancy, design and use of the building.</p> <p>Actions Required</p> <p>⊗ Fire warning system-correct grade/detection</p> <p><i>In light of recent findings concerning compartmentation (service risers) and flat entrance doors, subject to further investigations/survey, the premises should be provided with an appropriate fire warning system to provide early warning to residents of a fire in other parts of the building which could facilitate full evacuation of a specific area of the block.</i></p> <p><i>Based on the findings of a compartmentation survey, additional fire detectors in flats should be considered as an interim measure until the building is emptied for redevelopment.</i></p> <p>— complete by 23 Mar 2021 to reduce the risk by 100%</p>	N	
Procedures and Arrangements	-	<p>Competent person(s) appointed to assist in undertaking the preventive and protective measures (i.e. relevant general fire precautions)?: <i>Yes</i></p> <p>📍 Complete building (Complete Building)</p> <p>Finding</p> <p>The Council has a fire safety advisor in place to assist Estates and Facilities/Compliance Team.</p>	N	

Procedures and Arrangements	-	<p>Is there a suitable record of the fire safety arrangements?: Yes</p> <p><input type="checkbox"/> Complete building (Complete Building)</p> <p>Finding</p> <p>The Fire Risk Management Strategy includes blocks of flats.</p>	N	
Procedures and Arrangements	-	<p>Appropriate fire procedures in place?: Yes</p> <p><input type="checkbox"/> Complete building (Complete Building)</p> <p>Finding</p> <p>Fire procedures (stay put) are displayed in Fire Action Notices around the block. Where required these should be updated and the information shared with residents.</p>	N	
Procedures and Arrangements	Tolerable Risk	<p>Are procedures in the event of fire appropriate and properly documented?: No</p> <p><input type="checkbox"/> Complete building (Complete Building)</p> <p>Finding</p> <p>Resident fire safety information</p> <p>Actions Required</p> <p><input checked="" type="checkbox"/> Resident fire safety information - provide</p> <p><i>To comply with The Fire Safety (England) Regulations 2022, residents should be supplied with fire safety information and instruction appropriate to the building to include what to do in the event of a fire and the importance of a flat entrance fire door (where installed).</i></p> <p><i>— complete by 16 Aug 2023 to reduce the risk by 100%</i></p>	N	
Procedures and Arrangements	-	<p>Are there suitable arrangements for summoning the fire and rescue service?: N/A</p> <p><input type="checkbox"/> Complete building (Complete Building)</p> <p>Finding</p> <p>Residents would be expected to call the FRS.</p>	N	
Procedures and Arrangements	-	<p>Are there suitable arrangements to meet the fire and rescue service on arrival and provide relevant information, including that relating to hazards to fire-fighters?: No</p> <p><input type="checkbox"/> Complete building (Complete Building)</p> <p>Finding</p> <p>Information available for firefighters on arrival at the premises requires updating.</p> <p>Actions Required</p> <p><input checked="" type="checkbox"/> Information to firefighters (SIB)</p> <p><i>Ensure the Secure information box (SIB) contains all information relevant to the emergency services. In particular in the case of the fire service, provide keys to the fire warning panel/s, relevant site and floor plans annotated with, or; separate details of hazards and risk rooms, as well as a vulnerability list where appropriate.</i></p> <p><i>This should include evacuation arrangements, risks and location of residents - note. the current plans date from October 2007.</i></p> <p><i>Once any PCFRAs have been carried out any relevant information/PEEPS should be held in the SIB.</i></p> <p><i>Following further liaison with CFRS additional plans/information relating to the layout/numbering of flats might be required to be held in the PIB.</i></p> <p><i>May 2023 - A contractor has been engaged to update the fire plans in line with the latest guidance for SIB/ERP.</i></p> <p><i>— complete by 23 Mar 2021 to reduce the risk by 100%</i></p>	N	
Procedures and Arrangements	Substantial Risk	<p>Are there adequate procedures for evacuation of any disabled people who are likely to be present?: No</p>	N	

Arrangements		<p>📍 Complete building (Complete Building)</p> <p>Finding</p> <p>Procedures for people with restricted mobility (PRM) and/or who are vulnerable to be confirmed through person centred fire risk assessments (PCFRA).</p> <p>Actions Required</p> <p>✖ PRM procedures</p> <p><i>An action point from the recent specific fire risk assessment (SFRA) is to establish if there are residents who need assistance to evacuate their flat given the suspension of the stay put policy established through PCFRAs.</i></p> <p><i>On completion of this survey PEEPs maybe required for individual residents with copies kept in the secure information box (SIB).</i></p> <p><i>— complete by 23 Mar 2021 to reduce the risk by 100%</i></p>		
Procedures and Arrangements	-	<p>Persons nominated and trained to use fire extinguishing appliances?: N/A</p> <p>📍 Complete building (Complete Building)</p> <p>Finding</p> <p>Fire extinguishers may still be kept in caretakers office</p>	N	
Procedures and Arrangements	-	<p>Appropriate liaison with fire and rescue service (e.g. by fire and rescue service crews visiting for familiarization visits)?: Yes</p> <p>📍 Complete building (Complete Building)</p> <p>Finding</p> <p>Should CFRS require site visits this can be facilitated.</p> <p>Building plans have been supplied to CFRS in accordance with the FS(E) Regs 2022.</p>	N	

⚠️ Assessment Details

URN 1367-3

Overall Building Risk Rating Substantial Risk

Assessed building OR area name OR No Hanover Court > All Areas

Risk Assessor Fire Safety Compliance
✉ firesafety@cambridge.gov.uk

Date of Assessment 07 May 2023

Validated By Renier Barnard

Date of Validation 22 Jun 2023

📁 Client Details

Name Cambridge City Council

Address 1 Mandela House

Address 2 4 Regent St


Town Cambridge

Post Code


🏠 Premises Description

Number of Floors	8 storeys: Ground + seven floors >18M
Approximate floor area	NA
Building Construction and Layout	<p>Constructed approx 1968 - concrete block and beam + brick. Flat asphalt roof. There is no external cladding, only masonry walls. The building would have been built to design codes at that time. It is not thought that there have been any significant upgrades from a fire safety perspective other than to fit a smoke alarm in each flat.</p> <p>Building description: There are 78 one/two-bedroom flats which form separate fire compartments with service risers running the full height of the building believed to contain bathroom ventilation, SVP's, electrics, water and gas pipework (see comment in report re gas appliances). There is access to these at ground floor level opposite flat entrances and possibly from other locations in the block. From the recent fires in this and other similar blocks of flats (Kingsway) it is not thought these are adequately fire separated from the flats themselves (see sections below). Flats have recessed balconies constructed of non-combustible materials. 50 of 51 tenant flat entrance doors have been replaced by the Council with FD30S compliant doors. Most of the leasehold flat entrance doors, of which there are 27, appear not to be FD30S, although 2 leaseholders have purchased CCC standard FD30S doors.</p> <p>There is a full length walkway at 3rd and 6th floor levels with a full height unprotected staircase at each end of the block with approx. 60m between staircases. There are three sets of short staircases off each walkway, serving one level above and below only. Staircase widths are minimal (approx 800mm) and not designed for full evacuation.</p> <p>Ground floor flats have access at the front and rear of the block. First floor flats are accessed (in pairs) by individual external single storey staircases at the rear of the building. 2nd and 4th floor flats are accessed off the 3rd floor walkway. 5th and 7th floor flats are accessed off the 6th floor walkway - this arrangement means a pair of flats can be reached by going either down a level or up a level from the same entry point off the walkway. The escape staircase at each end of the block provides an alternative means of escape for most, but not all, flats. There is also a pair of flats at each level off these staircases.</p> <p>The walkway is undivided and quite deep (at least 3m) with no dedicated down stands to channel smoke away. The walkway is open on one side, but also partially enclosed by storage cupboards. There is a passenger lift at the north end of the block - it is not an emergency evacuation lift, but appears to have controls for firefighters to use it in the event of a fire (see report for an action concerning the status of these).</p> <p>There is a refuse chute at each end of the 3rd and 6th floor off the walkways; one is off the south staircase with its own access landing, setting this facility back and away from the block. The other chute is at the north end of the walkway near the lift. Both chutes are contained in a full height shaft with bins at the base in a secure storage area. Resident storage cupboards are located in the escape routes on each walkway and on most landings. There could also be riser cupboards on the walkways, but the assessor was unable to confirm this.</p> <p>Hanover Court runs parallel with neighbouring block, Princess Court. There is a green space in between, along with a community room (separate FRA). A small caretakers' office is located on the ground floor, with a storage area at the rear. There is good access to the block for the fire service - a high reach appliance could be used on some areas of the block but not all.</p> <p>There are 78 1/2-bedroom flats in the block. Most are Council tenants, but a number of flats have been purchased and are leasehold residents. (51/27 split). Some of the latter are sub let.</p>
Main use of Building	General needs block of flats.
Disabled / vulnerable persons	Potentially, some residents may be disabled/vulnerable.
Other persons at risk	The residents living in the block. A caretaker is employed to be on site Monday to Friday. There are visitors to the block and other persons who need to access it for various purposes.
Fire loss experience	There have been flat fires in these blocks over the years, with some smaller arson fires.
Fire Service station serving site / estimated travel time	Approx 5 mins from Parkside Fire Station (24hr crewed station) or approx 12-15 mins from the training facility at Milton. High rise predetermined attendance (PDA) for 5 floors and above is mobilised for this block.
Additional sources of oxygen	None

or flammable gases stored on site	
Relevant Fire Safety Legislation	Regulatory Reform (Fire Safety Order) 2005, Fire Safety Act 2021, Fire Safety (England) Regulations 2022, Building Safety Act 2022.
Legislation Enforced by	Cambridgeshire Fire & Service Service
Enforcement Notice issued by Fire Authority	NA

 Assessment Details

Assessor	Stephen Cotton MIFireE
Date of Assessment	16.05.2023
Date of previous assessment	04.07.2022
Date for review	May 2024 - or sooner as deemed necessary based on more information about the building becoming available or how it is being utilised as residential accommodation.
Management area of responsibility	Estates & Facilities/Housing Services
Survey type	Type 1 - PAS 79 - Review
"The Risk Profile" for this building has been calculated as	NA
Areas not accessible during visit	Private storage areas. Roof/plant not accessed or individual dwellings. Riser cupboards. The exact layouts of the flats are not known and may vary in their design. Lift motor room. Caretakers room/store.
Other relevant information	<p>A specific fire risk assessment (SFRA) was carried out in May-June 2020 following at Kingsway flats. The SFRA included Hanover Court as the design is very similar and the same issues have been highlighted in previous FRA's and by other fires. The assessment focused on flat entrance doors and service risers. This assessment is referred to in other sections of this report. A copy of the SFRA can be found in 'Documents'.</p> <p>There are garages at the end of the block - these are separate and do not form part of this assessment.</p> <p>There is a Fire Risk Management Group within Cambridge City Council to ensure delivery of its Fire Safety Policy and Fire Risk Management Strategy. Fire risk assessments are part of the strategy to achieve compliance with the FSO.</p> <p>In carrying out this assessment relevant guidance has been considered including 'Fire safety in purpose built blocks of flats', PAS 79-2 and current updates from MHCLG relating to external walls/Fire Safety Act 2021/Fire Safety (England) Regulations 2022 and The Building Safety Act 2022.</p> <p>The completion of this report has been delayed awaiting dry riser testing information from TSG which highlighted a significant defect - see testing and maintenance section below.</p>

 Fire Prevention Strategy

Fire Evacuation Strategy	At time of assessment there is a stay put policy. However, further investigations regarding the service risers may be undertaken following the Kingsway fire and the SFRA mentioned above. This may result in changes to the evacuation strategy and an interim early warning system and/or additional fire detection in flats might be installed.
AFD ; Warning System	There is currently no fire alarm or detection in the communal areas. It is believed flats are fitted with a smoke alarm in the hallway (LD3). A heat detector is programmed to be installed in the kitchen areas - if these are open-plan living areas, then this will achieve LD2 coverage. Given the comments above regarding the future of the building, additional fire detectors might be provided in flat units.

Escape Routes

Escape from ground floor flats is either from their front or rear access doors.

Means of escape from 1st floor flats is via a short open air landing and external staircases.

Escape for 2nd, 3rd, 4th, 5th, 6th and 7th floors is via the walkways at 3rd and 6th floor levels. There is a full height unprotected staircase at both ends of the block providing alternative escape routes once the walkways are reached. There is a travel distance of 60m between the escape staircases. The exception is for the pairs of flats located off the main escape staircases where this provides single direction directly down the staircase (in theory occupants could travel upwards to access the walkway and the alternative staircase but this is not ideal if there was smoke in the staircase area). This is an option for 4th and 7th floor occupants when descending their staircase, i.e. to go to the other staircase once a walkway is reached. There is also an initial dead end for flats at the end of each walkway but it is only 3m to the escape staircase and a well ventilated space so acceptable.

The main escape staircases are mostly open with no glazing but also no separation at 3rd and 6th floors (walkway level). At the uppermost level (7th floor) there is no vent at ceiling/roof level (although there is a skylight that potentially could be to provide an AOV/OV).

The depth of the walkway which is quite deep (3m + with no down stands), along with partial enclosure, may result in (lateral) smoke logging of the escape route. This may occur by either fire emerging from windows below the walkway or from a flat entrance way if the door is not closed. The windows below the walkways are believed to be bedrooms so a lesser risk than the kitchen/living room spaces that open onto the balconies on the either side of the building. This also means the higher fire risk rooms are on the opposite face of the building to the escape routes and may have been an intentional part of the design when built.

The walkway provides alternative means of escape but is not a fully 'open balcony/ventilated' approach and protection of the route is not currently afforded by fire-resistant flat entrance doors (leasehold doors are unlikely to be FD30S) and storage cupboards.

The layout of the staircases to the upper floors and off the walkways mean they are in a vertical channel running the full height of the building which also encourages any smoke and heat to travel upwards, affecting the escape route. In mitigation there are no windows opening onto any of the staircases and tenanted flat entrance doors have been replaced with FD30S units through 2020-21. Leasehold doors remain a risk to escape route protection/compartmentation. The former have been installed to the BM Trada Q-Mark scheme. Leasehold doors remain a risk to escape route protection/compartmentation.

Escape routes are generally sterile with non-combustible linings (Believed to be Class O/B-s3,d2 - subject to testing).

It will be important to maintain the fire doors in good condition and to ensure the self-closing devices are not disconnected by residents. This will be vital to protecting the escape routes and provide occupants the opportunity to escape should they choose to or if they are at risk and need to leave their flat. Changes to/new fire safety legislation has incorporated recommendations from MHCLG (Grenfell recommendations/Hackitt review) requiring these doors to be regularly inspected by the responsible person and residents informed of their importance.

There are no final exit doors at ground level just openings to the stairways.

Emergency Escape Lighting

Emergency lighting is installed throughout the communal areas and appears to be in accordance with BS 5266.

Fire Exit Directional Signage

Directional fire exit signage is provided from the 3rd floor and 6th floor walkways with some additional directional signs on the stairs but not at all levels. This is illuminated by the accommodation lighting.

Fire Lobbies

There are no fire lobbies

Smoke ventilation AOV

There is no AOV - see further comments in this report. The staircases and walkways are semi open which may provide smoke ventilation.

Dry Riser

Dry riser outlets are installed on the 3rd & 6th floor walkways near the lift and on the refuse chute landing with the inlets at ground level directly below. The hydrants to supply the risers are located in Union Road and Coronation Street. A fire appliance can get within 18-25m of the DR inlet.

Type; Number of Fire Extinguishers

There are no fire extinguishers in the communal areas. It is believed a CO2 extinguisher is located in the lift motor and caretakers room (not accessed by the assessor)

Scope of Assessment

- Type 1 assessment only. Recommendations for a type 4 assessment is contained within the FRA report.

Contact Details

Identity of Client -

Any persons with responsibility for fire safety within the premises (refer to artical 5 of RRF50) -

Telephone number -

Documents

The documents table below shows the documents associated with the assessable area that this assessment belongs to. Showing the version and and expiry date.

Total 7 items.

Document	Contractor	Expiry Date	Version
Fire Strategy Document frmg -fire risk management strategy_final_1_.docx	Steve Cotton	-	1
FRA Supporting Document sfra - ccc flat entrance doors _ service riser__ compartmentaion_1_.docx	Steve Cotton	-	1
Fire Risk Assessment (1 year) RiskAssessment_1367.pdf	Steve Cotton	-	1
FRA Supporting Document kingsway flats - fra supporting pics.docx	Steve Cotton	-	1
Fire Risk Assessment (1 Year) RiskAssessment_1367-1.pdf	Steve Cotton	-	1
Fire Risk Assessment (1 Year) RiskAssessment_1367-2.pdf	Steve Cotton	-	1
FRA Supporting Document hanover court dry riser inspection.pdf	CROMWELL FIRE	-	1

Your Risk Assessment Grading

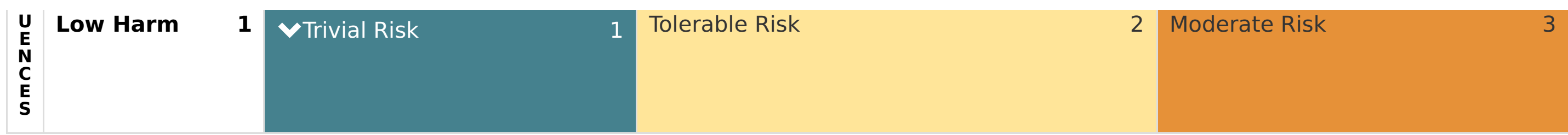
The following section reflects the overall assessment rating.

The risk rating is the qualitative evaluation by the risk assessor on the likelihood of a hazardous event occurring, and the consequence in consideration of harm to life. The risk assessor's methodology is reflected by the risk matrix, which is applied to establish a risk score and risk rating.

When a risk is adequately controlled, the acceptable risk that remains is known as the 'Residual Risk', reflecting a well-controlled and well-managed hazard, considered to meet the legal duty of 'so far as is reasonably practicable'. This means that, although the hazard is adequately controlled, risk remains and so an appropriate level of control and management is required. The acceptable residual risk is stated for each hazard category, reflecting the desired risk rating, against what is currently being achieved.

The risk matrix is utilised throughout the assessment to evaluate the likelihood of a hazardous event occurring and the consequences.

Risk Matrix		LIKELIHOODS		
		Low 1	Moderate 2	Extreme 3
C O N S E Q	High Harm 3	Moderate Risk 3	Substantial Risk 6	Intolerable Risk 9
	Medium Harm 2	Tolerable Risk 2	Moderate Risk 4	Substantial Risk 6



Legend Current Risk Score Residual/Baseline Risk Score

In consideration of the risk control measures evident during the risk assessment, and in consideration of the acceptable residual risk, the **overall likelihood** risk rating is:

1 Low 2 **Moderate** Extreme

In this context, a definition of the above terms is as follows:

- Low:** Outbreak of fire unlikely to result in serious injury or death of any occupant (other than an occupant sleeping in a room in which a fire occurs).
- Moderate:** Outbreak of fire could foreseeably result in injury (including serious injury) of one or more occupants, but it is unlikely to involve multiple fatalities.
- Extreme:** Significant potential for serious injury or death of one or more occupants.

In consideration of the risk control measures evident during the risk assessment, and in consideration of the acceptable residual risk, the **overall consequence** risk rating is:

1 Low Harm Medium Harm 3 **High Harm**

In this context, a definition of the above terms is as follows:

- High Harm:** Lack of adequate controls applied to one or more significant fire hazards, such as to result in significant increase in likelihood of fire.
- Medium Harm:** Normal fire hazards (e.g. potential ignition sources) for this type of occupancy, with fire hazards generally subject to appropriate controls (other than minor shortcomings).
- Low Harm:** Unusually low likelihood of fire as a result of negligible potential sources of ignition.

Therefore, it is considered that the current **overall risk** to persons potentially associated with the premises is:

1 Trivial Risk Tolerable Risk Moderate Risk 6 **Substantial Risk** Intolerable Risk

Overall Residual Risk

In consideration of the premises, activities, and risk profile applied, the **overall residual risk** is:

1 **Trivial Risk** Tolerable Risk Moderate Risk Substantial Risk Intolerable Risk

Risk Rating Definition

A suitable risk-based control plan should involve effort and urgency that is proportional to risk:

Risk level	Action and timescale
Trivial Risk	No action is required and no detailed records need be kept.
Tolerable Risk	No major additional fire precautions required. However, there might be a need for reasonably practicable improvements that involve minor or limited cost.
Moderate Risk	It is essential that efforts are made to reduce the risk. Risk reduction measures, which should take cost into account, should be implemented within a defined time period. Where moderate risk is associated with consequences that constitute extreme harm, further assessment might be required to establish more precisely the likelihood of harm as a basis for determining the priority for improved control measures.
Substantial Risk	Considerable resources might have to be allocated to reduce the risk. If the premises are unoccupied, it should not be occupied until the risk has been reduced. If the premises are occupied, urgent action

should be taken.

Intolerable Risk

Premises (or relevant area) should not be occupied until the risk is reduced.

[View All Historical](#)

Assessment Report

FIRE HAZARDS AND THEIR ELIMINATION OR CONTROL

Electrical Sources of Ignition

Hanover Court, Coronation Street, Cambridge

1 / 1

✔ **Reasonable measures taken to prevent fires of electrical origin?** Yes

✔ **Fixed installation periodically inspected and tested?** Yes

FWT due August 2024.

— SC ⌚ 22 Jun 2023 15:29:39

✔ **Portable appliance testing (where appropriate) carried out?** N/A

There could be equipment in the caretakers office that requires PAT.

— SC ⌚ 22 Jun 2023 15:29:42

✔ **Suitable policy regarding the use of personal electrical appliances?** N/A

No personal electrical appliances in the communal areas.

— SC ⌚ 22 Jun 2023 15:29:44

✔ **Suitable limitation of trailing leads and adapters?** N/A

Unable to check caretakers office.

No trailing leads in the communal area.

— SC ⌚ 22 Jun 2023 15:29:47

✔ **Is photovoltaic equipment present and appropriately tested?** N/A

None installed.

— SC ⌚ 22 Jun 2023 15:29:50

✔ **Are external vehicle charging facilities suitably positioned / protected?** N/A

None installed.

— SC ⌚ 22 Jun 2023 15:29:53

Fixed wire test: August 2019

Smoking

Hanover Court, Coronation Street, Cambridge

1 / 1

✔ **Reasonable measures taken to prevent fires as a result of smoking?** Yes

A no smoking policy is applied to the communal areas in accordance with The Health Act 2006 and signage displayed accordingly.

— SC ⌚ 22 Jun 2023 15:29:57



IMG_2345

— SC ⌚ 17 May 2023 13:36:53

✔ **Smoking prohibited on the premises?** Yes

Smoking is only permitted in the flat units and not in the communal or ancillary areas.

— SC ⌚ 22 Jun 2023 15:30:00

✔ **Smoking prohibited in appropriate areas?** N/A

As above

— SC ⌚ 22 Jun 2023 15:30:03

✔ **Suitable arrangements for those who wish to smoke?** N/A

As above.

— SC ⌚ 22 Jun 2023 15:30:06

✔ **This policy appeared to be observed at time of inspection?** Yes

At time of assessment there was no evidence of smoking taking place in the communal areas.

— SC ⌚ 22 Jun 2023 15:30:08

'No smoking' signs are located at the main entrances to the building and at access points to the first floor landings. They are also displayed on the walkways at 3rd and 6th floors.

🔥 Arson

Hanover Court, Coronation Street, Cambridge

1 / 1

✔ **Does basic security against arson by outsiders appear reasonable?** Yes

✔ **Is there an absence of unnecessary fire load in close proximity to the premises or available for ignition by outsiders?**

Yes

There was a large wheeled bin located under the archway that could be prone to an arson attack and should ideally be located away from the building, however, it was noted as being locked shut.

— SC ⌚ 22 Jun 2023 15:30:14



IMG_2409

— SC ⌚ 17 May 2023 13:50:06



IMG_2408

— SC ⌚ 17 May 2023 13:50:06

There is open access to these flats, although the refuse/bin rooms are limited in their availability to residents and locked at other times. The building has fully open access that can lead to unauthorised access with the potential for arson. It would benefit from an estate improvement scheme to make it more secure, however, this is unlikely to take place given the future of the building.

Storage cupboards were secure and are fully enclosed.

Some stored items on a few landings could be a source of combustibles but this is generally low risk.

Anecdotally arson is not a significant issue.

🔥 Portable Heaters and Heating Installations

Hanover Court, Coronation Street, Cambridge

1 / 1

✔ **Is the use of portable heaters avoided as far as practicable?** N/A

- ☑ If portable heaters are used: Is the use of the more hazardous type (e.g. radiant bar fires or lpg appliances) avoided? N/A
- ☑ If portable heaters are used: Are suitable measures taken to minimize the hazard of ignition of combustibile materials? N/A
- ☑ Are fixed heating installations subject to regular maintenance? N/A

There is no heating in the communal areas


⚡ Lightning

Complete building

1 / 1

☑ Do the premises have a lightning protection system and if so does it appear satisfactory? Yes

A LPS is in place - the assessor was not able to confirm if it is satisfactory, however, it is tested/maintained.

—  SC ⌚ 22 Jun 2023 15:30:17

Lightning equipment tested: 27/05/2022


🏠 Housekeeping

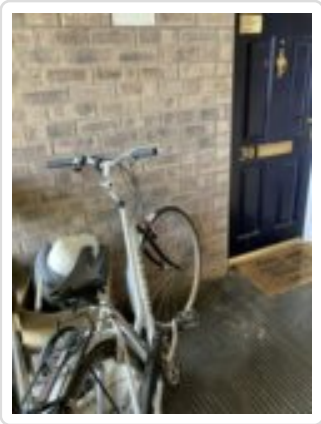
All Areas

1 / 1

❌ Is the standard of housekeeping to the assessed area generally adequate? No

Items located in escape routes. These can be an obstruction to the means of escape, a trip hazard for fighters and add to fire loading in an area that should be managed as a sterile space.

—  SC, RB ⌚ 8 Feb 2024 20:01:30



IMG_2360

—  SC ⌚ 17 May 2023 13:45:50




IMG_2357

—  SC ⌚ 17 May 2023 13:45:50



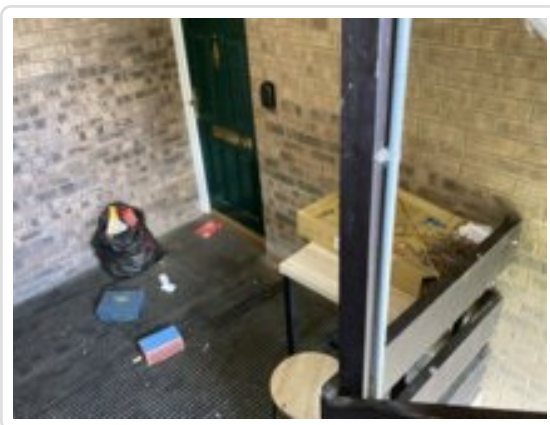
IMG_2353

—  SC ⌚ 17 May 2023 13:45:50



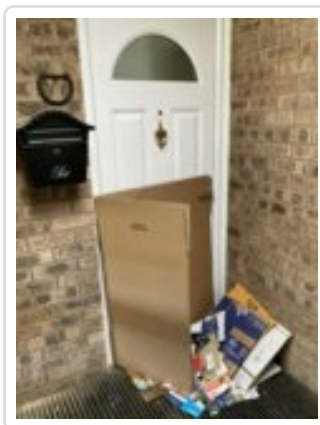
IMG_2349

—  SC ⌚ 17 May 2023 13:45:50



IMG_2348

—  SC ⌚ 17 May 2023 13:45:50




IMG_2347

—  SC ⌚ 17 May 2023 13:45:51




IMG_2350

—  SC ⌚ 17 May 2023 13:45:51



IMG_2343

—  SC ⌚ 17 May 2023 13:45:51

☑ Tasks 1

☑ Items located in escape routes - manage/remove

A range of items were observed in the communal areas outside flat entrances. See photographs.
Outside flats: 23/30/47/59/62/65/68/71/77.

These should be managed/removed in accordance with the Councils Zero Tolerance policy.

Location All Areas (Housing Services, Hanover Court, All Areas)

Medium Priority

— complete by 16 Aug 2023 to reduce the risk by 100% SC, RB

Assigned Users Jamie Lambert

Completed Jamie Lambert @ 8 Feb 2024 20:01:30

✔ More specifically do combustible materials appear to be separated from ignition sources? Yes

✔ More specifically is there an avoidance of an unnecessary accumulation of combustible materials or waste? N/A

See action above.

— SC @ 22 Jun 2023 15:30:21

✔ More specifically is there appropriate storage of hazardous materials? Yes

No hazardous materials observed.

— SC @ 22 Jun 2023 15:30:25

✔ More specifically is there an avoidance of inappropriate storage of combustible materials? Yes

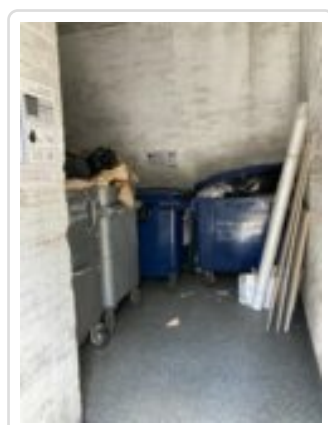
See action above. Bin stores were in good housekeeping condition.

— SC @ 18 May 2023 09:06:31



IMG_2364

— SC @ 17 May 2023 13:48:02



IMG_2370

— SC @ 17 May 2023 13:48:02

As can be seen from the attached images there are either bikes or items of storage outside some flat entrance doors. Application of the Council's zero tolerance policy as per other flats is recommended although acknowledged as difficult to implement in some instances.

🔧 Hazards Introduced By Outside Contractors and Building Works

Hanover Court, Coronation Street, Cambridge

1 / 1

✔ Are fire safety conditions imposed on outside contractors? Yes

✔ Is there satisfactory control over works carried out on the premises by outside contractors (including "hot work" permits)? Yes

✔ If there are in-house maintenance personnel, are suitable precautions taken during "hot work", including use of "hot work" permits? Yes

Contractors are subject to CCC's Health and Safety and Fire Safety Policies.

🗑️ Dangerous Substances

All Areas

2 / 1

✔ Are the general fire precautions adequate to address the hazards associated with dangerous substances used or stored within the premises? Yes

There are no dangerous substances on the premises.

See action below regarding gas installations.

— SC @ 22 Jun 2023 15:30:36

✔ If the above applies, has a specific risk assessment been carried out, as required by the Dangerous Substances and Explosive Atmospheres Regulations 2002? **N/A**

There are no dangerous substances on the premises.

🔔 Other Significant Fire Hazards That Warrant Consideration Including Process Hazards That Impact on General Fire Precautions

Hanover Court, Coronation Street, Cambridge

1 / 1

✖ Are there other Significant Fire Hazards That Warrant Consideration Including Process Hazards That Impact on General Fire Precautions? **Yes**

Gas installations - building structural stability and capacity

— 👤 SC, RB ⌚ 27 Dec 2023 16:55:02

✔ Tasks **1**

✔ Gas installations - building structural stability and capacity

A report has been submitted to CCC regarding the ability the structures at Hanover and Princess Courts to cope with a gas installation explosion. The report recommends removal of gas installations at Hanover and Princess Courts to completely negate the risk of a progressive building collapse. The Council has accepted and will implement this recommendation.

Depending on the time taken to undertake removal and fitting alternative appliances, it is recommended that the Fire and Rescue Service are made aware of this hazard and resulting risk so that they can plan accordingly. Discussion with them regarding information in the PIB might be appropriate, as well as means to evacuate the block if required.

Location Hanover Court, Coronation Street, Cambridge (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

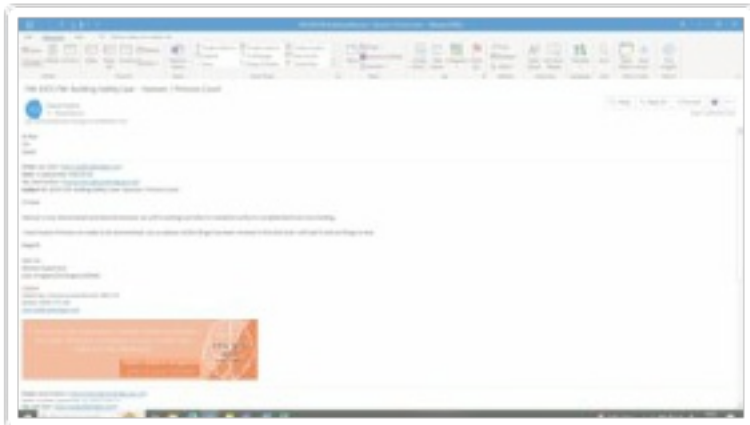
High Priority

— complete by 12 Sep 2021 to reduce the risk by 100% 👤 SC, RB

Assigned Users 👤 Renier Barnard

Completed Renier Barnard @ 27 Dec 2023 16:55:02

After



Hanover Princess Gas Removal

— 👤 RB ⌚ 27 Dec 2023 16:54:53

The building has Estate Safety checks in place (by Caretaker) which includes the reduction and elimination of fire hazards.

Generally housekeeping is good with only instances of minor storage.

Re bicycles - Where there is plenty of space such as on walkways and underneath staircases this is not so much a concern compared to the small stairways off the main walkway that need to be monitored and managed in accordance with the Council's zero tolerance policy.

The issue with gas supply/installations into the block is a work in progress to reduce the risk from gas.

FIRE PROTECTION MEASURES

🚪 Means of Escape

✔ **Is it considered that the premises are provided with reasonable means of escape in case of fire?** **N/A**

The means of escape are not ideal when compared to current benchmark standards, but reasonable given the age and features of the building if other measures are addressed as per the recommendations for action contained in this and other sections of this report.

— RB, SC 18 May 2023 09:29:12

✔ **Adequate design of escape routes?** **N/A**

As above

— SC 22 Jun 2023 15:30:44

✔ **Adequate provision of exits?** **Yes**

Exits are at the walkways and into the two main staircases with an open exit at the base of the stairs leading to ultimate safety.

— SC 22 Jun 2023 15:30:47

✔ **Exits easily and immediately openable where necessary?** **N/A**

There are no final exit doors in any local or on any level in the building - access is open.

— SC 22 Jun 2023 15:30:49

✔ **Fire exits open in direction of escape where necessary?** **N/A**

See above.

— SC 22 Jun 2023 15:30:52

✔ **Avoidance of sliding or revolving doors as fire exits where necessary?** **N/A**

See above.

— SC 22 Jun 2023 15:30:54

✔ **Satisfactory means for securing exits?** **N/A**

As above

— SC 22 Jun 2023 15:30:58

✔ **Reasonable distances of travel: Where there is a single direction of travel?** **Yes**

Depending on the benchmark technical approach taken (balcony access) the travel distances are acceptable. However, other areas of this report make reference to smoke venting and how this is potentially limited impacting on the travel distances from different parts of the building.

— SC 22 Jun 2023 15:31:00

✔ **Reasonable distances of travel: Where there are alternative means of escape?** **Yes**

Depending on the benchmark technical approach taken (balcony access) the travel distances are acceptable. However, other areas of this report make reference to smoke venting and how this is potentially limited impacting on the travel distances from different parts of the building.

— SC 22 Jun 2023 15:31:03

✘ **Suitable protection of escape routes including provision of fire doors/hatches including to roof voids, individual dwellings/flats, compartment doors, riser cupboard doors and risk rooms?** **No**

An inspection of the storage/electrical cupboard doors revealed that the doors are non fire rated and the integrity of the door set and therefore the escape route may be compromised.

Likelihood: Low **Consequence: Medium Harm** **2 x 1 = 2 | Tolerable Risk**

— RB, SC 22 Jun 2023 15:31:15

✔ **Tasks** **2**

- Storage cupboard doors - upgrade/replace

An inspection of the storage cupboard doors revealed that the doors are non fire rated and the integrity of the door set and therefore the escape route may be compromised.

These doors should be added to the program of works for upgrading or replacement.

The doors are secure without openings at the top and bottom (like Kingsway). From being able to observe one cupboard (empty and unlocked) there is no power supply so no ignition source.

Location Complete building (Housing Services, Hanover Court, All Areas)

Low Priority

— complete by 04 Jul 2023 to reduce the risk by 50% RB, SC

Assigned Users Fire Safety Compliance

Electrical cupboard doors - upgrade/replace

An inspection of the electrical cupboard doors revealed that the doors are non fire rated and the integrity of the door set and therefore the escape route may be compromised.

These doors should be added to the program of works for upgrading or replacement.

Location Ground floor

Low Priority

— complete by 16 May 2024 to reduce the risk by 50% RB, SC

Assigned Users Fire Safety Compliance

Suitable fire precautions for all inner rooms? **N/A**

No inner rooms present.

— SC 22 Jun 2023 15:31:06

Escape routes unobstructed? **Yes**

See Housekeeping above

— RB, SC 22 Jun 2023 15:31:08

It is considered that the premises are provided with reasonable arrangements for means of escape for disabled people. **N/A**

The building was not designed to accommodate disabled persons/PRM. Any issues with individual occupants being able to escape should be identified through a PCFRA (person centred fire risk assessment).

— SC 22 Jun 2023 15:31:11

First floor **2 x 1 = 2 | Tolerable Risk**

2 / 4

Suitable protection of escape routes including provision of fire doors/hatches including to roof voids, individual dwellings/flats, compartment doors, riser cupboard doors and risk rooms? **No**

Escape route fire protection - the glass block wall may not provide the same level of fire resistance as the flat entrance door. This could allow fire and smoke to enter the escape route.

Likelihood: Low **Consequence: Medium Harm** **2 x 1 = 2 | Tolerable Risk**

— SC, RB 17 May 2023 14:05:56



IMG_4521

— SC 26 Jul 2020 12:30:54

Tasks **1**

Escape route separation - not FR

The external wall to flat 18 on the first floor is constructed of glass blocks. This flat is at the base of the escape staircase and was the former caretakers flat. It is believed to be an original constructional feature.

An inspection in 2019 was unable to confirm that it provides the required fire resistance (integrity/insulation/stability) to protect the escape route.

Options should be considered to remedy this and might include: replacing the wall or, providing a protected inner hallway or, linking fire detection in flat 18 to the flats above on the escape staircase.

Location First floor (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

Medium Priority

— complete by 23 Jun 2021 to reduce the risk by 100% — SC, RB

Assigned Users — Fire Safety Compliance

Hanover Court, Coronation Street, Cambridge **3 x 2 = 6 | Substantial Risk**

3 / 4

⊛ Suitable protection of escape routes including provision of fire doors/hatches including to roof voids, individual dwellings/flats, compartment doors, riser cupboard doors and risk rooms? **No**

A survey of flat entrance doors and the door furniture in 2019 revealed that the doors on escape routes were non fire rated doors. The majority of tenant doors (50/51) in the blocks were replaced in 2020/21. However, leasehold doors are still mostly non-compliant.

Likelihood: Moderate **Consequence: High Harm** **3 x 2 = 6 | Substantial Risk**

— SC, RB ⌚ 22 Jun 2023 15:31:27



IMG_0463

— SC ⌚ 13 Jul 2022 10:31:28



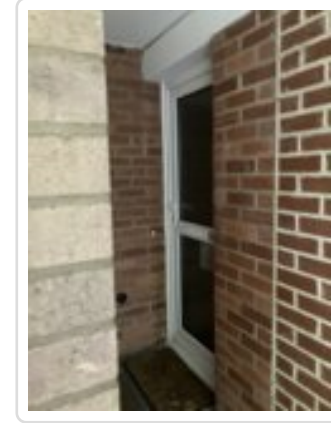
IMG_0454

— SC ⌚ 13 Jul 2022 10:31:28



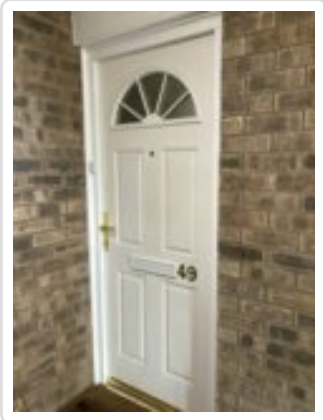
IMG_0462

— SC ⌚ 13 Jul 2022 10:31:28



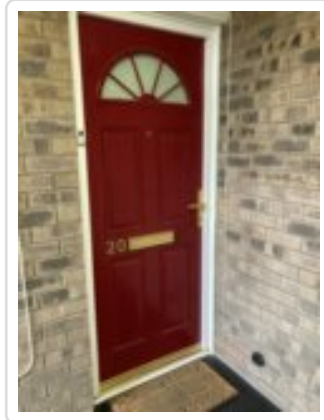
IMG_0455

— SC ⌚ 13 Jul 2022 10:31:28



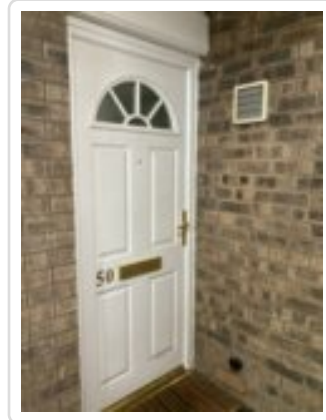
IMG_0452

— SC ⌚ 13 Jul 2022 10:31:28



IMG_0453

— SC ⌚ 13 Jul 2022 10:31:28



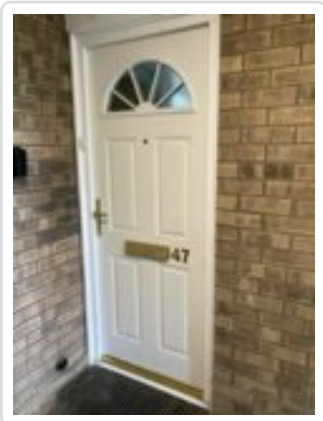
IMG_0451

— SC ⌚ 13 Jul 2022 10:31:29



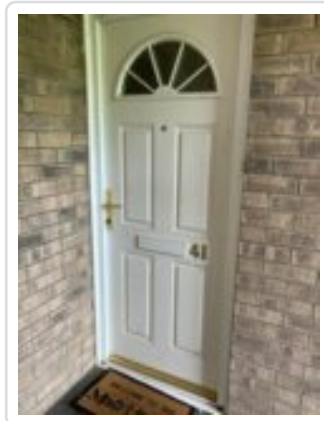
IMG_0450

— SC ⌚ 13 Jul 2022 10:31:29



IMG_0449

— SC ⌚ 13 Jul 2022 10:31:29



IMG_0443

— SC ⌚ 13 Jul 2022 10:31:29



IMG_0448

— SC ⌚ 13 Jul 2022 10:31:29



IMG_0446

— SC ⌚ 13 Jul 2022 10:31:29



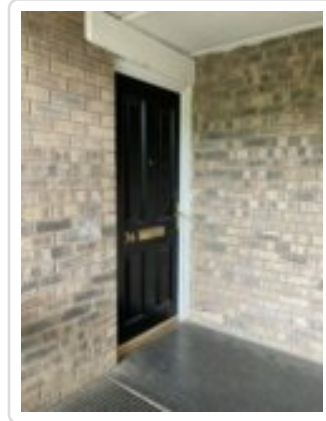
IMG_0447

— SC ⌚ 13 Jul 2022 10:31:30



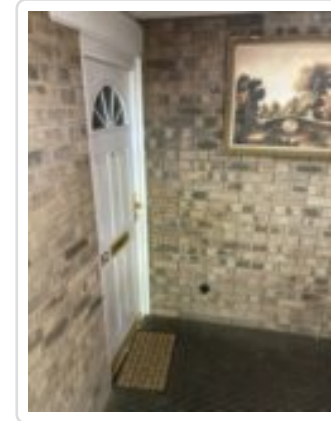
IMG_0428

— SC ⌚ 13 Jul 2022 10:31:30



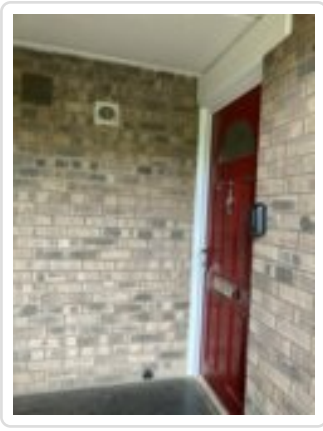
IMG_0440

— SC ⌚ 13 Jul 2022 10:31:30



IMG_0441

— SC ⌚ 13 Jul 2022 10:31:30



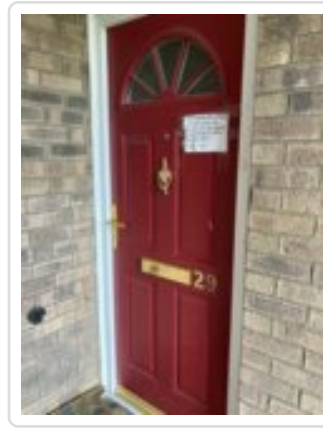
IMG_0439

— SC 13 Jul 2022 10:31:30



IMG_0438

— SC 13 Jul 2022 10:31:30



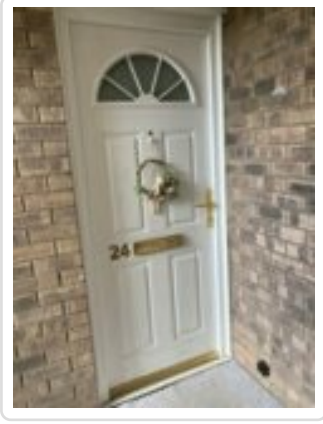
IMG_0437

— SC 13 Jul 2022 10:31:31



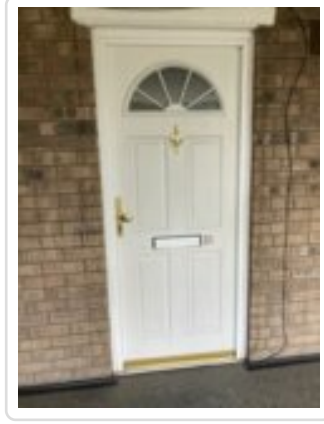
IMG_0434

— SC 13 Jul 2022 10:31:31



IMG_0435

— SC 13 Jul 2022 10:31:31



IMG_0436

— SC 13 Jul 2022 10:31:31



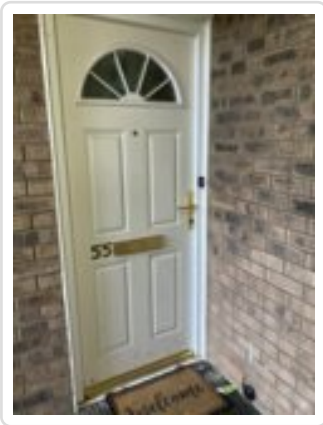
IMG_0433

— SC 13 Jul 2022 10:31:31



IMG_0430

— SC 13 Jul 2022 10:31:31



IMG_0429

— SC 13 Jul 2022 10:31:32



IMG_0431

— SC 13 Jul 2022 10:31:32



IMG_0432

— SC 13 Jul 2022 10:31:32

Tasks 2

Leaseholder Flat entry doors-non FR

All leasehold doors in a recent survey (end of 2019) were identified as HIGH priority as they are non fire rated flat entry doors and need to be replaced with an FD30S standard door. Leaseholders were written to in 2020 and offered a replacement door as part of the Councils program of work. However, many of the doors across the block remain non-compliant. The Council should continue to pursue flat entry door replacement where there is non-compliance. The Leasehold Team are currently in the process of writing to leaseholders again to request evidence of compliance.

Location Hanover Court, Coronation Street, Cambridge (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

High Priority

— complete by 12 Apr 2022 to reduce the risk by 50% SC, RB

Assigned Users Fire Safety Compliance

Tenanted Flat entry doors-non FR

The majority of tenant doors (50/51) in the blocks were replaced in 2020/21.

The Council should continue to pursue flat entry door replacement where there is still non-compliance.

Location Hanover Court, Coronation Street, Cambridge (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

High Priority

— complete by 12 Apr 2022 to reduce the risk by 50% SC, RB

Assigned Users Fire Safety Compliance

Manual over ride devices activated.

— SC, RB @ 5 Feb 2024 16:26:07



IMG_2371

— SC @ 17 May 2023 15:05:25

Tasks 1

Manual over ride devices activated - reset

Manual over ride devices are located in bin room 1. The manual over ride devices appear to have been activated. These should be checked and if necessary reset.

Location Bin room 1

Medium Priority

— complete by 16 Jun 2023 to reduce the risk by 100% SC, RB

Assigned Users Will Beavitt

Completed Will Beavitt @ 5 Feb 2024 16:26:07

The escape for most of the flats above ground floor is via generally semi-open routes which provides venting for smoke, however, also see comment above re 'escape routes' above regarding impact of a fire on these routes. This includes the staircases from ground to first floor flats and those serving 2nd/4th and 5th/7th floor flats off the walkways at 3rd and 6th floors.

The main staircases at each end running the full height of the building are open (and unprotected) at all levels except the head of the stair. The walkways are also ventilated at each end of the block.

There are skylights at the head of the escape stairs which appear to be openable. These could be investigated further to provide smoke ventilation by adaptation or modification to enable them to be opened manually (remotely) or by AOV, although the benefit may be limited.

The travel distances on the walkways are acceptable, however, they are undivided. These escape routes are neither enclosed corridors or fully open balconies (as per technical guidance). There might be some benefit in providing doors across the walkway where the short staircases emerge on the walkway but given smoke from a fire below could affect both sides of the partition it is not clear if these would be effective. Potentially this offers a progressive horizontal evacuation approach for persons with restricted mobility.

A program to replace all tenant flat entrance doors and to address leasehold doors has been implemented. All tenanted doors have been replaced, whereas all leasehold doors (apart from 2) remain non-compliant. This remains a significant risk to the means of escape.

There are no other openings onto the escape routes, which also helps to reduce the likelihood of them being affected by a fire. It is also proposed to replace store cupboard doors with FD30 standard doors, which will also reduce the opportunity for arson. The electrical intake cupboards/risers on the ground floor should also be part of this program.

The caretakers office is a very small space with acceptable single direction travel distance.

There are various ventilator breaches in the compartment walls outside flats: 33,35,41,42,45,48,50,65,66. These have been reviewed by the Compliance Manager (Gareth Basterfiled) previously and will not be actioned further. Many have been blanked off with a steel plate - it could not be confirmed if the fitting provides 60 mins fire resistance but is an improvement over an open vent.

Measures to Limit Fire Spread and Development

Complete building **3 x 2 = 6 | Substantial Risk**

1 / 3

It is considered that there is: **Compartmentation of a reasonable standard including external faces of buildings** **No**

Compartmentation does not appear to be to the required fire resistance. Following fires in blocks of similar design breaches in the service riser became apparent. The design of the riser in this block is very similar and likely to present the same issues allowing smoke and

possibly fire spread through the building affecting other occupants away from the compartment of origin.

Likelihood: Moderate Consequence: High Harm **3 x 2 = 6 | Substantial Risk**

— RB, SC ⌚ 22 Jun 2023 08:41:06

✓ Tasks 2

- Compartmentation to provide 60 minutes fire resistance in blocks above of 6 storeys

There is a requirement for compartmentation to provide 60 minutes fire resistance in blocks of 6 storeys and above.

Location Complete building (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

High Priority

— complete by 23 Sep 2021 to reduce the risk by 50% RB, SC

Assigned Users Fire Safety Compliance

- Structural investigation-breach of compartment wall/floor and external wall system

Further structural investigation is required to ascertain the consequence of the compartmentation breach, to establish if the following actions are required:

- Type 2, 3 or 4 Fire Risk Assessment.
- Change to the Fire Strategy of the building from “Stay Put” to Simultaneous Evacuation or other evacuation strategy as appropriate.
- Installation of Automatic Fire Detection System

The survey should include a fire risk appraisal of the external wall system (PAS 9980) to inform the Building Safety Case under The Building Safety Act 2022.

Location Complete building (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

High Priority

— complete by 23 Dec 2020 to reduce the risk by 50% RB, SC

Assigned Users Fire Safety Compliance

☑ It is considered that there is: Reasonable limitation of linings that might promote fire spread **Yes**

Escape routes are mostly sterile with non-combustible linings (Believed to be Class O/B-s3,d2 - subject to test).

— RB, SC ⌚ 22 Jun 2023 15:31:42

☑ As far as can reasonably be ascertained, fire dampers are provided as necessary to protect critical means of escape against passage of fire, smoke and combustion products in the early stages of a fire? **N/A**

See recommendation above regarding compartmentation/service risers.

— SC ⌚ 22 Jun 2023 15:31:46

Complete building **2 x 1 = 2 | Tolerable Risk**

2 / 3

✘ It is considered that there is: Compartmentation of a reasonable standard including external faces of buildings **No**

The materials on the external face of the building and/or the installation methods and materials could not be determined and appeared to be of sufficient amounts to be regarded as likely to contribute to external fire spread unless of a non-combustible material and should be examined/tested and the installation confirmed.

Balconies have been enclosed by residents. It is not known if these were authorised and compliant with building regulations.

Likelihood: Low Consequence: Medium Harm **2 x 1 = 2 | Tolerable Risk**

— SC, RB ⌚ 22 Jun 2023 15:31:53



IMG_2391

— SC ⌚ 17 May 2023 14:15:29



IMG_2383

— SC ⌚ 17 May 2023 14:15:29



IMG_2384

— SC ⌚ 17 May 2023 14:15:29

Tasks 2

External balconies-testing

The materials on the external face of the building and/or the installation methods and materials could not be determined and appeared to be of sufficient amounts to be regarded as likely to contribute to external fire spread unless of a non-combustible material and should be examined/tested and the installation confirmed. (Government cladding ban for combustible cladding on buildings limits materials to products achieving a European Classification of Class A1 or A2-s1,d0 when tested in accordance with BS EN 13501-1 :2007+A1:2009. This also includes balconies attached to external walls as regarded by building regulations as specified attachments and above 18m are subject to the same requirements and must achieve the same European Classification. Below this height the specified attachment should be risk assessed and appropriate measures implemented).

There are a number of balcony enclosures that may have fire safety implications both internally and externally and require further investigation and assessment.

Location Complete building (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

Medium Priority

— complete by 04 Jul 2023 to reduce the risk by 50%  SC, RB

Assigned Users  Fire Safety Compliance

Resident use of balconies

It was not possible for the assessor to externally check by observation the use of all the resident balcony spaces given the height of the building. In discussing this with the caretaker there are some balconies of concern (flats 15 and 20) that may present additional fire hazards. With the support of the housing management team these should be investigated, and information provided to residents more generally about the usage of balconies.

Location Complete building (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

Medium Priority



— complete by 04 Jan 2023 to reduce the risk by 50%  SC, RB

Assigned Users  Fire Safety Compliance

Before



IMG_0486

—  SC  13 Jul 2022 10:41:17

Hanover Court, Coronation Street, Cambridge **1 x 1 = 1 | Trivial Risk**

3 / 3



✖ It is considered that there is: **Compartmentation of a reasonable standard including external faces of buildings** **No**

Refuse chute cover missing - this could lead to smoke from a bin room fire emerging on the landing/walkway although this is at the end of the walkway so its impact would not be so significant on the means of escape.

Likelihood: Low

Consequence: Low Harm

1 x 1 = 1 | Trivial Risk

—  SC, RB  22 Jun 2023 15:32:07



Tasks 1

Refuse chute cover missing

The refuse chute cover near the lift on the 3rd floor walkway is missing and should be replaced.

Location Hanover Court, Coronation Street, Cambridge (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

Low Priority

— complete by 16 Nov 2023 to reduce the risk by 100% SC, RB

Assigned Users Fire Safety Compliance

A flat fire in Hanover Court early in 2020 and in block 4 at Kingsway flats in May 2020 resulted in either smoke and/or fire spread through the service riser. The outcomes of a subsequent specific FRA (see Documents) included a review of the stay put policy, installation of linked early warning of fire and further surveys of service risers in all blocks at Kingsway flats. This was also planned for Hanover/Princess Courts (as the buildings are from the same era and very similar in design) to provide solutions to the lack of fire resistance/compartimentation.

This work is being progressed by CCC at Kingsway (in 2023) and has coincided with replacing most flat entrance doors to FD30S standard in 2020-21.

At time of assessment no progress had been made regarding surveys or compartmentation works and is pending completion of Kingsway flats which is likely to inform the approach taken with Hanover (and Princess) Court. The external walls should be part of the type 4 assessment (PAS 9980 FRAEW), although the fire in block 4 at Kingsway Flats indicates there are not specific issues with the EWS.

Resident balconies are not constructed of combustible materials. From external observations, generally the use of balconies does not appear to present significant additional fire hazards although it is difficult to confirm this without being intrusive. There is one exception where a quantity of cardboard is being stored on a first floor balcony.

However, in 2020 the Caretaker highlighted at least two flats of concern - see recommendation above. As of 2023 this does not appear to have been followed up.

There are several balcony enclosures that could have fire safety implications both externally and internally.

As residents are being decanted this risk is likely to decrease.

Previously identified vent breaches (outside flats 23,35,41,42,48,56) have been reviewed and accepted as no further action required by the Risk and Compliance Manager in 2021. If a more detailed FRA (compartmentation survey/fire risk appraisal of external wall construction) is undertaken, as recommended above, these should be included in that assessment to confirm the decision taken.

Escape routes are mostly sterile with non-combustible linings (Believed to be Class O/B-s3,d2).

2023 update: now that changes to fire safety legislation have come into force and the requirement to produce a building safety case, the need for at least some sampling of the EWS and fire compartmentation to inform interim measures and to demonstrate management of the issue and thus risk, is not diminished by the building's short term future.

Emergency Escape Lighting

Hanover Court, Coronation Street, Cambridge

1 / 1

Reasonable standard of emergency escape lighting system provided? **Yes**

Emergency lighting is provided in the escape routes and appeared to be in working order.

Note. the test records on site show continual failures which has been fed back by the assessor to TSG to be followed up.

— SC 22 Jun 2023 15:32:16

Emergency lighting is provided throughout the communal areas and appeared to be in working order. The assessor was not able to verify its effectiveness at time of assessment.

🔗 Fire Safety Signs and Notices

Hanover Court, Coronation Street, Cambridge

1 / 2

✔ Reasonable standard of fire safety signs and notices? Yes

Fire safety signage where required is in place.

Additional wayfinding signage is programmed to be installed (change to guidance for buildings over 11m to be adopted as best practice).

— SC ⌚ 22 Jun 2023 15:32:20

All Areas

3 / 2

✔ Reasonable standard of fire safety signs and notices? Yes

Where appropriate fire safety signage and notices are provided including fire action notices, fire exit directional signage, some store/electrical cupboards and dry riser inlets.

— SC ⌚ 17 May 2023 14:55:09



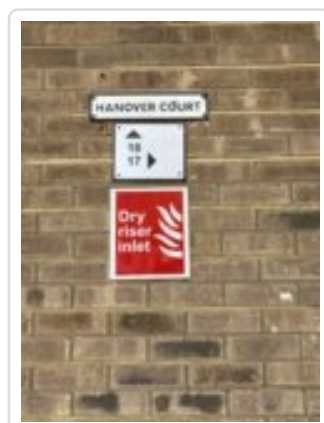
IMG_2369

— SC ⌚ 17 May 2023 14:55:09



IMG_2363

— SC ⌚ 17 May 2023 14:55:10



IMG_2368

— SC ⌚ 17 May 2023 14:55:10



IMG_2372

— SC ⌚ 17 May 2023 14:55:10



IMG_2345

— SC ⌚ 17 May 2023 14:55:10

Fire exit signage incorporates pictogram and text format. The position and location of signage is generally satisfactory in terms of compliance and give the layout/design of the block.

🕒 Means of Giving Warning in Case of Fire

Complete building

3 x 2 = 6 | Substantial Risk

1 / 1

✔ Reasonable manually operated electrical fire alarm system provided? N/A

There is no communal fire alarm system.

— SC ⌚ 17 May 2023 14:49:58

✔ Automatic fire detection provided- Throughout the Premises? N/A

✔ Automatic fire detection provided- Part of the premises only? Yes

Flat units only have fire detection believed to be BS 5839-6 systems providing at least LD3 coverage.

— SC, RB ⌚ 22 Jun 2023 15:32:29

✘ Extent of automatic fire detection generally appropriate for the occupancy and fire risk? No

The premises should be provided with an appropriate fire warning system to a correct grade and with a correct detection level according to the occupancy, design and use of the building.

Likelihood: Moderate

Consequence: High Harm

3 x 2 = 6 | Substantial Risk

— SC, RB 17 May 2023 14:49:58

✔ Tasks 1

Fire warning system-correct grade/detection

In light of recent findings concerning compartmentation (service risers) and flat entrance doors, subject to further investigations/survey, the premises should be provided with an appropriate fire warning system to provide early warning to residents of a fire in other parts of the building which could facilitate full evacuation of a specific area of the block. Based on the findings of a compartmentation survey, additional fire detectors in flats should be considered as an interim measure until the building is emptied for redevelopment.

Location Complete building (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

High Priority

— complete by 23 Mar 2021 to reduce the risk by 100% SC, RB

Assigned Users Fire Safety Compliance

✔ Remote transmission of alarm signals? NA

This assessment has considered the communal areas where there is currently no fire alarm system or fire detection to initiate fire safety systems such as AOV.

Flats have only a smoke alarm in the hallways (LD3) and were due to have additional heat detection installed in kitchens/living area in 2021/22. The assessor is unable to confirm if these were installed.

Where this is not an open-plan area a smoke alarm is recommended for the living area providing LD2 coverage.

Following the fire at Kingsway flats, in Hanover Court earlier in 2020 and a specific fire risk assessment, the need to provide early warning to residents of a fire other than in their own dwelling was identified. This was in conjunction with providing an interim measure until all flat entrance doors are replaced with FD30S units and compartmentation work on service risers is completed.

A survey to determine fire alarm requirements is required and may link dwellings in particular off staircases that could become compromised by a fire due to the design and layout of the building.

See more up to date comments above in 'Premises Description' and 'Evacuation Strategy'.

2023: At time of assessment this work is still pending with the Kingsway blocks to be completed first and form a template for Hanover Court. The addition of smoke alarms in flats (not linked) may provide an acceptable interim solution by providing early warning should smoke enter a service riser from the fire compartment of origin and spread to other flats.

✔ Manual Fire Extinguishing Appliances

Hanover Court, Coronation Street, Cambridge

1 / 1

✔ Reasonable provision of portable fire extinguishers? N/A

Fire extinguishers might be located in caretakers office as per FRA in 2020. Also, FFE in the lift motor room. Neither area accessible by the assessor. No communal FFE.

— SC 22 Jun 2023 15:33:06

✔ Hose reels provided? N/A

✔ Are all fire extinguishing appliances readily accessible? N/A

Unable to confirm due to lack of access to the lift motor room and care takers office.

— SC 22 Jun 2023 15:32:57

It is not appropriate to provide fire extinguishers in the communal areas. The caretaker has two water (9L) in his office (Note. from 2020 FRA).

Relevant Fire Extinguishing Systems

Hanover Court, Coronation Street, Cambridge

1 / 2

✘ Is fixed firefighting equipment and fire safety systems provided where required and are they suitable for the risks identified? **No**

Fire fighters lift - assess

— SC, RB @ 22 Apr 2024 13:09:00



IMG_6484

— SC @ 15 Jul 2021 11:51:11

✔ Tasks 1

✔ Fire fighters lift - assess

The lift installation appears to have been a fire fighters lift when new. This should be confirmed or otherwise by lift engineers and its current suitability/reliability for use as such.

Location Hanover Court, Coronation Street, Cambridge (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

Medium Priority

— complete by 12 Jan 2022 to reduce the risk by 100% SC, RB

Assigned Users Steph Coppola

Completed Steph Coppola @ 22 Apr 2024 13:09:00

✔ Is a natural or mechanical smoke control system employed where necessary and is it appropriate for the location? **N/A**

There are no specifically designed smoke control provisions - see commentary above regarding the open walkway and main escape staircases.

— SC @ 22 Jun 2023 15:33:10

All Areas

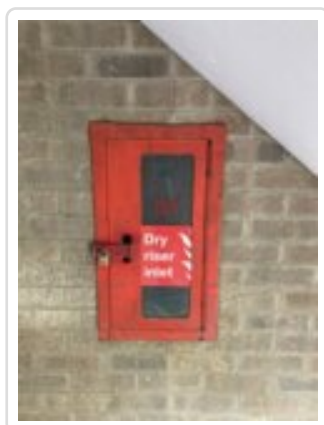
2 / 2

✔ Is fixed firefighting equipment and fire safety systems provided where required and are they suitable for the risks identified? **Yes**

Secure information box (SIB) and Dry Riser (DR) installed.

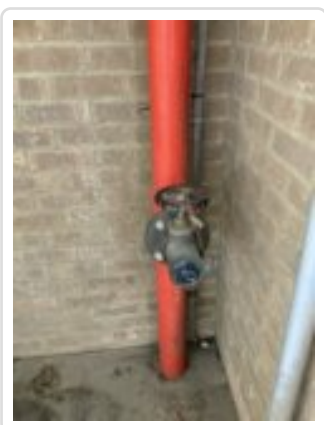
The DR outlets are not enclosed in a box for protection but were secured with a strap and lock.

— SC @ 22 Jun 2023 15:33:20



IMG_2369

— SC @ 18 May 2023 10:29:55



IMG_2359

— SC @ 18 May 2023 10:29:55



IMG_2346

— SC @ 18 May 2023 10:29:56



IMG_2363

— SC @ 18 May 2023 10:29:56



IMG_2365

— SC 18 May 2023 10:29:56



IMG_2354

— SC 18 May 2023 10:29:56

Is a natural or mechanical smoke control system employed where necessary and is it appropriate for the location? N/A

None installed.

— SC 22 Jun 2023 15:33:23

A dry riser outlet is provided on the 3rd and 6th floor walkways at each end of the building with the inlet directly below.

A SIB is located at the Coronation Street end of the block adjacent the access staircase. The information contained within it requires updating to be in line with the latest NFCC/FIA guidance. See Procedures and Arrangements below in this report.

It is recommended that the fire service are invited to use the DR's as part of a training/familiarisation exercise.

The lift has a fire fighters control switch outside the lift doors at ground level. It is not clear if this is still operative - see recommendation above and section below.

Other Relevant Fixed Systems and Equipment

All Areas 2 / 1

Has suitable provision of fire-fighters switch(es) for high voltage luminous tube signs, etc been made? N/A

Fire Doors

All Areas 1 / 1

Are Fire doors regularly maintained in accordance with the Fire Safety Order Yes

CCC have a survey program in place (this does not include leaseholders).
Leaseholders are being written to in order to establish the compliance of their flat entrance door.
— SC 22 Jun 2023 15:33:27

Does the fire door compliance documentation indicate that the doors have test reports to : BS 476 or BS EN 1634? Yes

Where the Council has instigated a door replacement program (2020/21) the contract specified doors to meet this standard and to be installed by a BM Trada Q Mark installer with documentation supplied to CCC.
— SC 22 Jun 2023 15:33:31

Are Fire Door test reports available for both sides of the fire door as required by Building Regulations Yes

As above.
— SC 18 May 2023 08:20:53

Do the electronic locks on fire exit doors fail safe on actuation of the fire alarm system? N/A

There are no fire exit doors linked to a fire alarm system although manual over ride devices are installed adjacent the bib room doors.
— SC 22 Jun 2023 15:33:35



IMG_2371

— SC 18 May 2023 08:20:11

✔ **Have you examined the fire door compliance documentation?** N/A

Compliance documentation is held centrally in Estates and Facilities.

— SC 22 Jun 2023 15:33:39

✔ **Has a fire door survey been conducted?** Yes

See comment above.

— SC 18 May 2023 08:20:53

With regard to leaseholders, a process has been agreed between the Risk Assurance and Compliance Team and the Leasehold Team (Housing Services) to write to the leaseholder for them to confirm and provide evidence that their FED is compliant.

There are high priority actions that have already been highlighted in May 2020 following the fire in Kingsway flats and the flat entrance door survey carried out in 2019. Progress to rectify these deficiencies is underway and was previously delayed by the national Covid issue in 2020/21.

July 2021: new FD30S flat entrance doors have been fitted in this block in the tenanted flats (except for one door) but leaseholder doors remain noncompliant.

As of 2023 only fire doors have been progressed and even then most leasehold doors appear to be noncompliant.

The other linked fire safety issue is the design of the building and how a fire might affect escape routes along with the service riser potentially not being adequately fire separated (subject to survey/appraisal).

A combination of measures would address this given it is not known how a fire may affect the semi open escape routes and includes linked fire warning systems.

Due to the pending redevelopment of the building (as of May 2023), work undertaken is likely to be limited but still needs to take account of the risk and implement the necessary to reduce this to a tolerable level.

Where possible, as residents are decanted, those at the highest levels and furthest from the escape routes/staircases should be relocated first. Flats that are located in the two main staircases should also be vacated to reduce the risk of the staircase being affected by a fire emanating from a flat entrance door. Where units are adopted for temporary accommodation those closest to the ground should be utilised over those at higher levels.

MANAGEMENT OF FIRE SAFETY

📄 Procedures and Arrangements

Complete building

3 x 2 = 6 | Substantial Risk

1 / 1

✔ **Competent person(s) appointed to assist in undertaking the preventive and protective measures (i.e. relevant general fire precautions)?** Yes

The Council has a fire safety advisor in place to assist Estates and Facilities/Compliance Team.

— SC 22 Jun 2023 15:33:42

✔ **Is there a suitable record of the fire safety arrangements?** Yes

The Fire Risk Management Strategy includes blocks of flats.

— SC 22 Jun 2023 15:33:48

✔ **Appropriate fire procedures in place?** Yes

Fire procedures (stay put) are displayed in Fire Action Notices around the block.
Where required these should be updated and the information shared with residents.
— SC @ 22 Jun 2023 15:33:45

✘ **Are procedures in the event of fire appropriate and properly documented?** No

Resident fire safety information

Likelihood: Low Consequence: Medium Harm **2 x 1 = 2 | Tolerable Risk**
— SC, RB @ 22 Jun 2023 11:11:56

✔ **Tasks** 1

Resident fire safety information - provide

To comply with The Fire Safety (England) Regulations 2022, residents should be supplied with fire safety information and instruction appropriate to the building to include what to do in the event of a fire and the importance of a flat entrance fire door (where installed).

Location Complete building (Housing Services, Hanover Court, All Areas)

High Priority

— complete by 16 Aug 2023 to reduce the risk by 100% SC, RB

Assigned Users Fire Safety Compliance

✔ **Are there suitable arrangements for summoning the fire and rescue service?** N/A

Residents would be expected to call the FRS.
— SC @ 22 Jun 2023 15:33:51

✘ **Are there suitable arrangements to meet the fire and rescue service on arrival and provide relevant information, including that relating to hazards to fire-fighters?** No

Information available for firefighters on arrival at the premises requires updating.
— SC, RB @ 14 Feb 2024 11:49:53

✔ **Tasks** 1

✔ Information to firefighters (SIB)

Ensure the Secure information box (SIB) contains all information relevant to the emergency services. In particular in the case of the fire service, provide keys to the fire warning panel/s, relevant site and floor plans annotated with, or; separate details of hazards and risk rooms, as well as a vulnerability list where appropriate.

This should include evacuation arrangements, risks and location of residents - note. the current plans date from October 2007.

Once any PCFRAs have been carried out any relevant information/PEEPS should be held in the SIB.

Following further liaison with CFRS additional plans/information relating to the layout/numbering of flats might be required to be held in the PIB.

May 2023 - A contractor has been engaged to update the fire plans in line with the latest guidance for SIB/ERP.

Location Complete building (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

High Priority

— complete by 23 Mar 2021 to reduce the risk by 100% SC, RB

Assigned Users Alex Myhill

Completed Alex Myhill @ 14 Feb 2024 11:49:53

✔ **Are there suitable arrangements for ensuring that the premises have been evacuated?** N/A

✔ **Is there a suitable fire assembly point(s)?** N/A

✘ **Are there adequate procedures for evacuation of any disabled people who are likely to be present?** No

Procedures for people with restricted mobility (PRM) and/or who are vulnerable to be confirmed through person centred fire risk assessments (PCFRA).

Likelihood: Moderate Consequence: High Harm 3 x 2 = 6 | Substantial Risk

— SC, RB 22 Jun 2023 15:34:00

Tasks 1

PRM procedures

An action point from the recent specific fire risk assessment (SFRA) is to establish if there are residents who need assistance to evacuate their flat given the suspension of the stay put policy established through PCFRAs.

On completion of this survey PEEPs maybe required for individual residents with copies kept in the secure information box (SIB).

Location Complete building (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

High Priority

— complete by 23 Mar 2021 to reduce the risk by 100% SC, RB

Assigned Users Fire Safety Compliance Fire Safety Compliance

Persons nominated and trained to use fire extinguishing appliances? N/A

Fire extinguishers may still be kept in caretakers office

— SC 22 Jun 2023 15:33:54

Persons nominated and trained to assist with evacuation, including evacuation of disabled people? N/A

Appropriate liaison with fire and rescue service (e.g. by fire and rescue service crews visiting for familiarization visits)? Yes

Should CFRS require site visits this can be facilitated.

Building plans have been supplied to CFRS in accordance with the FS(E) Regs 2022.

— SC 22 Jun 2023 15:33:57

Routine in-house inspections of fire precautions (e.g. in the course of health and safety inspections)? Yes

The need to assess for potentially vulnerable residents who may have difficulty escaping independently has been highlighted following the fire in Kingsway. In 2020 a meeting to initiate a survey for PCFRA's took place. This was delayed by Covid-19. Letters sent out to residents resulted in no feedback regarding vulnerable residents although there seems to be 'local' awareness of such persons and this needs to be revisited through the residents groups. The need for this action will reduce as residents are decanted.

Temporary fire procedure arrangements (change to the evacuation strategy) may be required to be put in place following more information regarding fire compartmentation and fire doors being made available. In the interim period until the building is emptied, an early fire warning system extending beyond individual dwellings may also be required.

With regard to any changes in fire procedure, notices located at the entrances to the block would need to be amended/changed and an assembly point should be considered to assist the fire service in establishing who is involved in any fire incident as per Kingsway flats.

To comply with The Fire Safety (England) Regulation 2022, and to tie in with concerns about fire safety risks with the building, residents should be updated with fire safety information. This should be carried out ASAP and not be further delayed by decisions re surveys. A second wave of information/fire safety instruction would follow as required.

Training and Drills

Hanover Court, Coronation Street, Cambridge

1 / 1

Are all staff given adequate fire safety instruction and training on induction? Yes

CCC Caretaker only. residents are not required to undertake fire safety instruction and training (although CCC must provide relevant fire safety information).

— SC 22 Jun 2023 15:34:20

Are all staff given adequate periodic "refresher training" at suitable intervals? Yes

As above.

— SC 22 Jun 2023 11:13:28

Does all staff training provide information and instruction on the following: fire risks and fire safety measures in the

premises, action in the event of fire, action on hearing the fire alarm , method and operation of manual call points, location and use of fire extinguishers, means for summoning the fire and rescue service, the identity of persons nominated to assist with evacuation and the identity of persons nominated to use fire extinguishing appliances **Yes**

As above.

— SC 22 Jun 2023 15:34:23

- ✔ Are staff with special responsibilities (e.g. fire wardens) given additional training? **N/A**
- ✔ Are fire drills carried out at appropriate intervals? **N/A**
- ✔ When the employees of another employer work in the premises: Is their employer given appropriate information (e.g. on fire risks and general fire precautions)? **N/A**
- ✔ Is it ensured that the employees in the above question are provided with adequate instructions and information? **N/A**

Contractors are subject to the fire safety and health and safety policies of the Council.

The caretaker has received fire awareness training as a CCC employee.

Testing and Maintenance

Complete building

1 / 1

- ✔ Are the premises fire safety provisions adequately maintained? **Yes**

See actions below.

— SC 22 Jun 2023 15:34:26

- ✔ Weekly testing and periodic servicing of fire detection and alarm system? **N/A**

Resident should be advised to test their fire alarms regularly and report any defects.

— SC 22 Jun 2023 15:34:29

- ✔ Monthly and annual testing routines for emergency escape lighting? **Yes**

ATL test EL system.

The record shows continual failures - this has been fed back to TSG by the assessor.

Annual test carried out 11.05.2023 by ATL.

— SC 22 Jun 2023 15:34:38



IMG_2367

— SC 17 May 2023 15:34:15

- ✘ Annual maintenance of fire extinguishing appliances? **No**

Portable fire fighting equipment in Caretakers office and lift motor room was not maintained in accordance with the current relevant standard and subject to an annual inspection by a qualified competent engineer.

— SC, RB 22 Jul 2024 09:01:19

Tasks 1

- ✔ Portable fire extinguishers-annual maintenance

Portable fire fighting equipment should be maintained in accordance with the current relevant standard and subject to an annual inspection by a qualified competent engineer.

If there is a fire extinguisher located in the lift motor room (TBC) this should also be serviced.

Location Complete building (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

High Priority

— complete by 16 Aug 2023 to reduce the risk by 100% SC, RB

Assigned Users John Conroy

Completed John Conroy @ 22 Jul 2024 09:01:18

✔ **Periodic inspection of external escape staircases and gangways?** Yes

The short stairs up to the 1st floor flats are external and should be part of the care takers routines to ensure they are in good condition.
— SC @ 22 Jun 2023 15:34:43

✔ **Six-monthly inspection and annual testing of rising mains?** Yes

The DR installation was tested 01.06.2023.
A defective outlet valve (seized) was observed on one of the risers. This was approved for remedial action by CCC on 13.06.2023 (e-mail from John Conroy 13.06.2023). This should be undertaken ASAP to ensure the DR system is available for FRS use in the event of a fire on the upper levels - the lack of availability of this facility may delay the fire service n search and rescue/fire fighting operations.
A copy of the report is located in the documents section.
— SC, RB @ 22 Jun 2023 15:34:35

✔ **Weekly and monthly testing, six-monthly inspection and annual testing of fire-fighting lifts?** Yes

Testing in place - still not clear if the lifts are fire fighting installations - see above.
— SC @ 22 Jun 2023 15:34:40

✔ **Weekly testing and periodic inspection of sprinkler installations and smoke control systems?** N/A

✘ **Routine checks of final exit doors and/or security fastenings?** No

Testing of push to exit over rides (green boxes)
— SC, RB @ 22 Jul 2024 08:55:53

✔ Tasks 1

✔ Testing of push to exit over rides (green boxes)

These are located in the refuse rooms and should be regularly tested. Monthly testing with the emergency lighting is suggested.

Location Complete building (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

Low Priority

— complete by 16 Nov 2023 to reduce the risk by 100% SC, RB

Assigned Users John Conroy

Completed John Conroy @ 22 Jul 2024 08:55:53

✔ **Annual inspection and test of lightning protection system?** Yes

Carried out by Rodells 27.05.2022.
TSG have stated that they haven't been allocated this for 2023 - this should be followed up.
— SC, RB @ 22 Jun 2023 15:34:47

✔ **Are suitable systems in place for reporting and subsequent restoration of safety measures that have fallen below standard?** Yes

Arrangements are in put in place for all relevant tests for items in both the communal areas and individual dwellings by TSG.

Note. The door release buttons in the refuse rooms have manual over rides (green boxes) - these should be subject to regular testing (suggest monthly with emergency lighting).

The lift (including the lift for Hanover Ct) has a fire fighters switch to enable control of the lift. It is not clear if this is still effective.

An assessment by lift engineers is recommended. Given the height of the building this facility would be of use to the fire service.

🕒 Records

Hanover Court, Coronation Street, Cambridge

1 / 1

✔ **Appropriate records of: Fire drills?** N/A

✔ **Appropriate records of: Fire training?** N/A

✔ **Appropriate records of: Fire alarm tests?** N/A

✔ **Appropriate records of: Emergency escape lighting tests?** Yes

Testing in place with ATL.

— SC © 22 Jun 2023 15:35:01

✔ **Appropriate records of: Maintenance and testing of other fire protection systems?** Yes

See recommendations above re lifts (fire fighters??) and fire extinguishers.

— SC © 22 Jun 2023 15:35:06

Records are kept centrally and electronically.

There is a fire log on site (in the SIB) with limited records (emergency lighting only).

Further reports provided by TSG - need to ensure where failures have occurred they are fixed and this is recorded.

This building is encompassed within Cambridge City Council's Fire Safety Policy and Fire Risk Management Strategy. See the 'documents' section below.

There is liaison with the local fire protection officer (CFRS) and also with residents through leasehold representatives and CCC Estate Champions.

Management of fire safety has improved and the significant findings of fire risk assessments of recent assessments are being actioned with monitoring in place through the Fire Risk Management Group.

Legislative requirements and new technical guidance including flat entrance door inspections and external faces of the building have been considered in this assessment.

2023: Now that the building is going to be redeveloped with the occupancy reducing (and use of some units as temporary accommodation), fire safety management must not be reduced and should robustly remain in place.

The following are suggested interim actions/items to be explored by Cambridge City Council in mitigation for the unsatisfactory fire safety measures. These are for consideration against the fire risk actions highlighted in the significant findings above where, due to the pending development, it is not desirable to undertake full remedial works. The list is not exhaustive and combined is intended to reduce the risk to a more tolerable level for a short/medium period of time only. They are not intended as long term solutions.

1. Sample survey (Type 4) to establish condition of any fire compartmentation issues whereby fire and smoke may spread between flats via service risers. This will influence to what extent the other interim measures are suitable and acceptable. This information will also be required for the building safety case report to comply with the Building Safety Act and subsequent application for a building assessment certificate.
2. Amend the fire evacuation strategy to one where there is evacuation should occupants become aware of a fire rather than stay put and wait until/if they become at risk. This is not a full evacuation strategy but one where there is less of a delay, i.e. once residents are aware of a fire they leave the building immediately. Occupants away from a fire and unaware of it may therefore stay in situ in their flats. Note. this has been implemented at Kingsway flats in Cambridge's as an interim fire safety measure.
3. Point 2 links with providing updated fire safety information to residents which is required to comply with new legislation that came into force in January 2023.
4. Ensure information about the building and residents is up to date and appropriate for the risk level of the building taking account of the fire safety measures (and lack of) assessed in this report. This should be contained in the SIB and also provided to CFRS as required (some building information has already been passed to them). There are fire plans in the SIB and these are currently in the process of being updated by a CCC (using a contractor).
5. Provide wayfinding signage throughout the common areas as per ADB.
6. Consider installing additional automatic fire detection in the remaining occupied flats to provide improved early warning.
7. The risk profile may change through the use of some flat units for temporary accommodation where the occupancy is transitional and there is less familiarity with the building's layout. Such occupants along with the existing residents may be vulnerable. Where appropriate person centred fire risk assessments (PCFRA) should be carried out. This has been explored previously by CCC by attempting to identify vulnerable residents (via tenant reps') but did not bring to light any significant issues. Where voids are being reused as temporary accommodation PCFRAs might be relevant and should be considered when people are allocated flat units.

8. Where voids are selected for temporary accommodation usage, ideally they should be the ones closest to the ground and nearest the escape staircases but not those flats located in the stair (at each end of the building). Note. Those in the best condition might pose a greater fire risk due to their location.
9. Flats located in the stair present a risk from fire (if the flat entrance door is non compliant) potentially affecting the whole of the stair above the fire floor. Consideration should be given to these flats being voided before others if at all possible to ensure the staircases are available for escape purposes.
10. It might be appropriate (based on a sample fire compartmentation survey) to install a building fire alert system that enables the FRS to evacuate the whole building. This should be carefully considered not least as the staircase widths are not designed to evacuate large numbers of persons.

➤ References

Guidance in Support of Fire Safety Legislation

England and Wales

HM Government Guides to Fire Safety Risk Assessment, DCLG:

- Offices and Shops.
- Factories and Warehouses.
- Sleeping Accommodation.
- Residential Care Premises.
- Educational Premises.
- Small and Medium Places of Assembly.
- Large Places of Assembly.
- Theatres, Cinemas and Similar Premises.
- Open Air Events and Venues.
- Healthcare Premises.
- Animal Premises and Stables.
- Transport Premises and Facilities.
- Means of Escape for Disabled People.

Scotland

Scottish Government: Practical Fire Safety Guidance:

- Existing Non-Residential Premises.
- Existing Premises with Sleeping Accommodation.
- Care Homes.
- Healthcare Premises.
- The Evacuation of Disabled Persons from Buildings.

Northern Ireland

DHSSPS Sector Specific Guidance Documents:

- Sleeping Accommodation.
- Offices and Shops.
- Healthcare Premises.
- Theatres, Cinemas and Similar Premises.
- Small and Medium Places of Assembly.
- Open Air Events.

Guidance in Support of Building Regulations

England and Wales

- Approved Document B Vol 2, 2019 edition (as amended).

Scotland

- Technical Handbook 2019, Non-Domestic – Fire.

Northern Ireland

- Technical Booklet E 2012.

Fire Safety Design and Management

- BS 9991:2015. (Incorporating corrigendum No. 1.) Fire safety in the design, management and use of residential buildings. Code of practice.
- BS 9999:2017. Fire safety in the design, management and use of buildings. Code of practice.

Fire Detection and Fire Alarm Systems

- BS 5839-1:2017. Fire detection and fire alarm systems for buildings. Code of practice for design, installation, commissioning and maintenance of systems in non-domestic premises.
- BS 5839-6:2019. Fire detection and fire alarm systems for buildings - Code of practice for the design, installation, commissioning and maintenance of fire detection and fire alarm systems in domestic premises.
- BS 5839-8:2013. Fire detection and fire alarm systems for buildings - Code of practice for the design, installation, commissioning and maintenance of voice alarm systems.
- BS 5839-9:2011. Fire detection and fire alarm systems for buildings - Code of practice for the design, installation, commissioning and maintenance of emergency voice communication systems.

Fire Extinguishing Appliances

- BS 5306-1: 2006. Code of practice for fire extinguishing installations and equipment on premises - hose reels and foam inlets.
- BS 5306-3:2017. Fire extinguishing installations and equipment on premises. Commissioning and maintenance of portable fire extinguishers. Code of practice.
- BS 5306-8:2012. Fire extinguishing installations and equipment on premises - Selection and positioning of portable fire extinguishers - Code of practice.
- BS EN 3. Portable fire extinguishers.
- BS EN 671-3:2009. Fixed fire-fighting systems. Hose systems. Maintenance of hose reels with semi-rigid hose and hose systems with lay-flat hose.
- BS EN 1869:2019. Fire blankets.

Emergency Escape Lighting

- BS 5266-1:2016. Emergency lighting - Code of practice for the emergency lighting of premises.
- BS 5266-8:2004. (BS EN 50172: 2004). Emergency escape lighting systems.
- BS EN 1838:2013. Lighting applications - Emergency lighting.

Fire Safety Signs

- BS 5499-4:2013. Safety signs. Code of practice for escape route signing.
- BS ISO 3864-1:2011. Graphical symbols. Safety colours and safety signs. Design principles for safety signs and safety markings.
- BS EN ISO 7010:2020. Graphical symbols. Safety colours and safety signs. Registered safety signs.
- BS 5499-10:2014. Guidance for the selection and use of safety signs and fire safety notices.

Fixed Fire Extinguishing Systems and Equipment

- BS EN 12845:2015+A1 2019. Fixed fire-fighting systems. Automatic sprinkler systems. Design, installation and maintenance.
- BS 9990:2015. Non-automatic fire-fighting systems in buildings. Code of practice.

Lightning

- BS EN 62305-1:2011. Protection against lightning. General principles.
- BS EN 62305-2:2012. Protection against lightning. Risk management.
- BS EN 62305-3:2011. Protection against lightning. Physical damage to structures and life hazard.
- BS EN 62305-4:2011. Protection against lightning. Electrical and electronic systems within structures. Miscellaneous
- BS 7176:2007+A1: 2011. Specification for resistance to ignition of upholstered furniture for non-domestic seating by testing composites.
- BS 7273-4:2015. Code of practice for the operation of fire protection measures. Actuation of release mechanisms for doors.
- BS 7671:2018/A1:2020. Requirements for Electrical Installations. IET Wiring Regulations. Eighteenth Edition.
- BS 8899:2016. Improvement of fire-fighting and evacuation provisions in existing lifts.

Codes of practice

- PAS 79-1:2020. Fire risk assessment - Guidance and a recommended methodology.

Published Guidance on Control of Contractors

- Standard Fire Precautions for Contractors Engaged on Crown Works, Department of Environment, HMSO.
 - Fire Prevention on Construction Sites. Fire Protection Association.
 - Fire Safety in Construction. HSG168 (2nd edition) HSE.
-

PRIVATE & CONFIDENTIAL

REGULATORY REFORM (FIRE SAFETY) ORDER 2005

Fire Risk Assessment

SERVICE AREA: Housing Services



Assessed Area: Princess Court > All Areas

Responsible Person: Will Barfield

Manager: Fire Safety Compliance

Risk Assessor: Fire Safety Compliance

Date of Inspection: 08 May 2023

Recommended Review Date: 08 May 2024



Executive Summary

This assessment records the fire safety measures in place at the time the assessment was conducted, and lists significant findings and a recommended appropriate remedial action. It also provides guidance for the Responsible Person on how to maintain a satisfactory standard of fire precautions within the building concerned. The subject areas concerned are;

Responsible Person

The Responsible Person should ideally hold a senior or at least a responsible position within the company and have sufficient authority to allocate and mobilise finances and to control and organise members of staff.

Manager

In the context of this report the Manager is the person who will receive all the actions found during the assessment and will allocate them to the relevant people to get the risk removed or reduced to a manageable level.

Competent Persons

Competent Persons (Fire Wardens) are employees that have had additional instruction and training in fire safety, they are there to assist the responsible person in fulfilling their statutory duties.

Managing Fire Safety

Good management of fire safety is essential to ensure that fires are unlikely to occur; that if they do occur they are likely to be controlled quickly, effectively, and safely, and that everyone should be able to escape to a place of safety easily and quickly.

Record Keeping

In the event of a fire in the workplace you may need to provide evidence to the enforcing authorities when asked that you have complied with the fire regulations. It is helpful to keep a dedicated record of all maintenance of fireprotection equipment and staff training. In all cases the quality of records may be regarded as a good indicator to the enforcing authorities of the overall quality of the fire safety management structure.

Building Occupancy

Some buildings may have two or more main uses that are not ancillary to one another. For example offices over shops from which they are independent. In such cases, each of the uses should be considered as belonging to a purpose group in its own right. In other cases and particularly in some large buildings, there may be a complex mix of uses. In such cases it is necessary to consider the possible risk that one part of a complex may have on another and special measures to reduce the risk may be necessary.

Fire Alarm

All buildings or occupied areas should have arrangements for detecting fire, where a work place is equipped with fire detectors and alarms they should be in operational order whilst the premises are occupied and be maintained and tested to comply with the relevant code of practice.

Emergency Lighting

The primary purpose of emergency escape lighting is to illuminate escape routes, but it is also required to illuminate safety equipment such as firefighting equipment, fire alarm call points, and safety signage. The size and type of your premises will determine the complexity of the emergency escape lighting required. Where installed it should be in good working order and maintained to comply with the relevant code of practice.

Compartmentation/Fire-stopping

The spread of fire within a building or area can be restricted by sub-dividing it into compartments separated from one another by walls and/or floors of fire-resisting construction. The object is twofold:

- a) to prevent rapid fire spread which could trap occupants of the building; and
- b) to reduce the chance of fires becoming large, on the bases that large fires are more dangerous, not only to occupants and fire and rescue personnel, but also to people in the vicinity of the building.

Fire Fighting Equipment

You have a responsibility for the provision of appropriate fire-fighting equipment. It is also your responsibility to check that all fire-fighting equipment is in the correct position and in satisfactory order before the premises is used.

Means of Escape

A Route or routes provided to ensure safe egress from the premises or other locations to a place of safety. The general principle for means of escape is that any person confronted by an outbreak of fire within a building can turn away from it and make a safe escape initially to a place of relative safety, a protected stair, or corridor; which should lead to a place of ultimate safety which should be clear and free of the building.

Hazards: Arson/heating/smoking/cooking/electricity

The first step in the assessment is the identification of fire hazards. In determining these hazards, account should be taken of the three most common causes of fire, which together account for around two-thirds of all fires. These are arson, smokers' materials and electrical faults.

Further consideration should be given to other recognised or common causes of fire, such as heating appliances, cooking and contractors' operations.

Fixed installations

These are fire-fighting systems which are sometimes installed within the structure of the building and could include hose-reels and sprinkler systems.

Contractors & industrial processes

Carelessness by outside contractors is a common cause of fire, including many fires that result in serious financial loss. Cutting, welding and use of blow torches are particular sources of ignition,

Not all of such works are caused by outside contractors. It has been estimated, however, that perhaps 20-25% of all non-domestic fires result from on-going work', such as refurbishment, repair and construction. The Building occupants/employees should be informed as to the significant findings of assessments. The following should be displayed for the benefit of all occupants and visitors.

- A copy of the building plan indicating the means of escape (where escape routes are complex and building occupants are not familiar with the building).
- Details of any significant findings
- Details of the Responsible Person

It is considered that the building occupants/users will include employees, contractors, visitors and emergency service personnel as well as any other person who may be in and around the premises.

Ownership of the Fire Risk Assessment

Regardless of whether the fire risk assessment is carried out by, for example, staff from an outside organisation, or a third party fire risk assessor, the ultimate responsibility for the adequacy of the risk assessment rests with the "responsible person" defined by legislation as responsible for ensuring that the fire risk assessment is carried out and that the fire precautions are adequate.

Introduction

For the Responsible Person at these premises, this document provides information regarding the standard of fire safety observed, and serves as a record as required by The Regulatory Reform (Fire Safety) Order 2005 and the

Management of Health and Safety at Work Regulations 1999.

The RRO places a requirement for all responsible persons to:

- Appoint one or more competent persons, depending on the size and use of the premises, to carry out any of the preventative and protective measures required by the Order.
- Provide your employees with clear and relevant information on the risks to them identified by the fire risk assessment, and about the measures you have taken to reduce the risks and prevent fire occurring.
- Consult your employees or their elected representatives about nominating people to carry out particular roles in connection with fire safety and improving the general fire precautions in the workplace.
- Before you employ a child, provide a parent or guardian with clear and relevant information regarding the risks to that child that have been identified in the fire risk assessment, and the measures you have or propose to put in place to safeguard that child.
- Inform non-employees, such as contractors and temporary workers of the risks to them, and provide them with information as to the nominated competent persons, and the general fire precautions provided in the workplace.
- Co-operate and co-ordinate with other building or site responsible persons regarding the findings of your risk assessment which may affect the safety of their employees.
- Provide the employer of any person from an outside organisation who may be working on your premises with relevant information as to the risks to them as outlined in your risk assessment, and the preventative and protective measures taken to secure their safety.
- If you are not the employer but have any control of premise which contain more than one workplace, you are responsible for ensuring that the requirements of the Order are complied with in those parts over which you have control.
- Consider the presence of any Hazardous or dangerous substances and the risk that they present to the occupants of the building, and undertake further assessment in the form of a Dangerous Substance Explosive Atmosphere Regulations assessment (DSEAR) assessment.
- Establish a suitable means of contacting the emergency services and providing them with relevant information regarding the storage or use of dangerous substances.
- Provide appropriate information, instruction and training to you employees, during normal working hours, about the fire precautions in your premises , when they first start working for you, (induction training) and from time to time during their employment (refresher training).
- Ensure that the premises are provided with appropriate fire-fighting equipment, fire detection and warning and emergency routes and exits, and that any equipment provide is maintained by competent persons and in efficient working order, good repair and fir for purpose.
- Your employees must co-operate with you to ensure that the premises are safe from fire and its effects, and must not do anything that will place themselves or other people at risk.

RISK PROFILE

To determine the appropriate means of escape and design features of the building, for life safety, a Risk Profile has been established following the methodology detailed in the current edition of 'BS9999: Code of practice for fire safety in the design, management and use of buildings'. This calculation is based on two main factors: occupancy characteristic and fire growth rate.

Once the risk profile has been determined, the minimum package of fire safety measures that should be provided, in accordance with BS9999, such as: travel distance, stair and exit widths and level of fire alarm and detection can be established.

Establishing the Risk Profile gives scope for a more interpretative approach, on a case by case basis, which takes into account the specific features of an individual building. This is especially significant when considering the issue of escape routes and fire exits in existing premises, particularly if they are of an historical or heritage nature.

Variation of the risk profile can be achieved by looking at existing and/or additional measures, which could be provided beyond what is determined as the minimum standard by BS9999. This allows for a more flexible approach to determine the fire safety measures that are required as an alternative to following other prescriptive guidance.

Risk Profile Matrix

Occupancy Characteristic	Fire Growth Rate			
	Slow	Medium	Fast	Ultra-Fast
Occupants awake & familiar with building	A1	A2	A3	Unacceptable without the addition of an effective localized suppression system or sprinklers
Occupants who are awake and unfamiliar with the building	B1	B2	B3	
Occupants who are likely to be asleep; long-term individual occupancy	Ci1	Ci2	Ci3	
Occupants who are likely to be asleep; long-term managed occupancy	Cii1	Cii2	Cii3	
Occupants who are likely to be asleep; short-term occupancy	Ciii1	Ciii2	Ciii3	
Other	Property is outside the scope of BS9999			

Your Risk Assessment Summary

Summary of Areas Requiring Attention

Risk Level Key: Trivial Risk Tolerable Risk Moderate Risk Substantial Risk Intolerable Risk

FIRE PROTECTION MEASURES

Means of Escape

Means of Giving Warning in Case of Fire

Measures to Limit Fire Spread and Development

Relevant Fire Extinguishing Systems

MANAGEMENT OF FIRE SAFETY

Procedures and Arrangements

Greater detail on the areas requiring attention can be found in the relevant sections of this document.

Summary of Findings and Action Plan

Section	Risk Grading	Finding and Action Required	Photo Y N	Job No / Date
---------	--------------	-----------------------------	-----------	---------------

				work complete
Means of Escape	-	<p>Is it considered that the premises are provided with reasonable means of escape in case of fire?: <i>N/A</i></p> <p>📌 Complete building (Complete Building)</p> <p>Finding</p> <p>The means of escape are not ideal when compared to current benchmark standards, but reasonable given the age and features of the building if other measures are addressed as per the recommendations for action contained in this and other sections of this report.</p>	N	
Means of Escape	-	<p>Adequate design of escape routes?: <i>N/A</i></p> <p>📌 Complete building (Complete Building)</p> <p>Finding</p> <p>As above</p>	N	
Means of Escape	-	<p>Adequate provision of exits?: <i>Yes</i></p> <p>📌 Complete building (Complete Building)</p> <p>Finding</p> <p>Exits are at the walkways and into the two main staircases with an open exit at the base of the stairs leading to ultimate safety.</p>	N	
Means of Escape	Trivial Risk	<p>Exits easily and immediately openable where necessary?: <i>No</i></p> <p>📌 Complete building (Complete Building)</p> <p>Finding</p> <p>Manual override devices activated.</p>	Y	
Means of Escape	-	<p>Fire exits open in direction of escape where necessary?: <i>N/A</i></p> <p>📌 Complete building (Complete Building)</p> <p>Finding</p> <p>As above - exits are open (no doors).</p>	N	
Means of Escape	-	<p>Avoidance of sliding or revolving doors as fire exits where necessary?: <i>N/A</i></p> <p>📌 Complete building (Complete Building)</p> <p>Finding</p> <p>None present.</p>	N	
Means of Escape	-	<p>Reasonable distances of travel: Where there is a single direction of travel?: <i>Yes</i></p> <p>📌 Complete building (Complete Building)</p> <p>Finding</p> <p>Depending on the benchmark technical approach taken (balcony access) the travel distances are acceptable. However, other areas of this report make reference to smoke venting and how this is potentially limited impacting on the travel distances from different parts of the building.</p>	N	
Means of Escape	-	<p>Reasonable distances of travel: Where there are alternative means of escape?: <i>Yes</i></p> <p>📌 Complete building (Complete Building)</p> <p>Finding</p> <p>Depending on the benchmark technical approach taken (balcony access) the travel distances are acceptable. However, other areas of this report make reference to smoke venting and how this is potentially limited impacting on the travel distances from different parts of the building.</p>	N	
Means of Escape	Tolerable Risk	<p>Suitable protection of escape routes including provision of fire doors/hatches including to roof voids, individual dwellings/flats, compartment doors, riser cupboard doors and risk rooms?: <i>No</i></p>	N	

		<p>📌 Complete building (Complete Building)</p> <p>Finding</p> <p>An inspection of the storage/electrical cupboard doors revealed that the doors are non fire rated and the integrity of the door set and therefore the escape route may be compromised.</p> <p>Actions Required</p> <p>⊗ Storage cupboard doors - upgrade/replace</p> <p><i>An inspection of the storage cupboard doors revealed that the doors are non fire rated and the integrity of the door set and therefore the escape route may be compromised. These doors should be added to the program of works for upgrading or replacement. The doors are secure without openings at the top and bottom (like Kingsway). From being able to observe one cupboard (empty and unlocked) there is no power supply so no ignition source.</i></p> <p>— complete by 04 Jul 2023 to reduce the risk by 50%</p> <p>⊗ Electrical cupboard doors - upgrade/replace</p> <p><i>An inspection of the storage cupboard doors revealed that the doors are non fire rated and the integrity of the door set and therefore the escape route may be compromised. These doors should be added to the program of works for upgrading or replacement.</i></p> <p>— complete by 16 May 2024 to reduce the risk by 50%</p>		
Means of Escape	-	<p>Suitable fire precautions for all inner rooms?: N/A</p> <p>📌 Complete building (Complete Building)</p> <p>Finding</p> <p>None present.</p>	N	
Means of Escape	-	<p>Escape routes unobstructed?: Yes</p> <p>📌 Complete building (Complete Building)</p> <p>Finding</p> <p>Escape routes generally clear - see Housekeeping section for minor items.</p>	N	
Means of Escape	-	<p>It is considered that the premises are provided with reasonable arrangements for means of escape for disabled people.: N/A</p> <p>📌 Complete building (Complete Building)</p> <p>Finding</p> <p>The building was not designed to accommodate disabled persons/PRM. Any issues with individual occupants being able to escape should be identified through a PCFRA (person centred fire risk assessment).</p>	N	
Means of Escape	Substantial Risk	<p>Suitable protection of escape routes including provision of fire doors/hatches including to roof voids, individual dwellings/flats, compartment doors, riser cupboard doors and risk rooms?: No</p> <p>📌 Princess Court, Coronation Street, Cambridge (Complete Building)</p> <p>Finding</p> <p>A survey of flat entrance doors and the door furniture in 2019 revealed that the doors on escape routes were non fire rated doors. All tenant doors (27) in the block were replaced in 2020/21. However, leasehold doors are still mostly non-compliant.</p> <p>Actions Required</p> <p>⊗ Leaseholder Flat entry doors-non FR</p> <p><i>All leasehold doors in a recent survey (end of 2019) were identified as HIGH priority as they are non fire rated flat entry doors and need to be replaced with an FD30S standard door. Leaseholders were written to in 2020 and offered a replacement door as part of the Councils program of work. However, many of the doors across the block remain non-compliant. The Council should continue to pursue flat entry door replacement where there is non-</i></p>	Y	

		<p>compliance. The Leasehold Team are currently in the process of writing to leaseholders again to request evidence of compliance.</p> <p>— complete by 12 Apr 2022 to reduce the risk by 100%</p>		
Measures to Limit Fire Spread and Development	Substantial Risk	<p>It is considered that there is: Compartmentation of a reasonable standard including external faces of buildings: <i>No</i></p> <p>📌 Complete building (Complete Building)</p> <p>Finding</p> <p>Compartmentation does not appear to be to the required fire resistance. Following fires in other blocks of similar design breaches in the service riser became apparent. The design of the riser in this block is very similar and likely to present the same issues</p> <p>Actions Required</p> <p>⊗ Compartmentation to provide 30 minutes fire resistance in blocks up to 5 storeys</p> <p><i>There is a requirement for compartmentation to provide at least 30 minutes fire resistance in blocks up to 5 storeys.</i></p> <p>— complete by 23 Jun 2021 to reduce the risk by 50%</p> <p>⊗ Structural investigation-breach of compartment wall/floor</p> <p><i>Further structural investigation is required to ascertain the consequence of the compartmentation breach, to establish if the following actions are required:</i></p> <ul style="list-style-type: none"> • Type 2, 3 or 4 Fire Risk Assessment. • Change to the Fire Strategy of the building from “Stay Put” to Simultaneous Evacuation • Installation of Automatic Fire Detection System <p><i>The survey should include a fire risk appraisal of the external wall system (PAS 9980) to inform the fire risk assessment.</i></p> <p>— complete by 23 Dec 2020 to reduce the risk by 50%</p>	N	
Measures to Limit Fire Spread and Development	-	<p>It is considered that there is: Reasonable limitation of linings that might promote fire spread: <i>Yes</i></p> <p>📌 Complete building (Complete Building)</p> <p>Finding</p> <p>Escape routes are mostly sterile with non-combustible linings (Believed to be Class O/B-s3,d2 - subject to test).</p>	N	
Measures to Limit Fire Spread and Development	-	<p>As far as can reasonably be ascertained, fire dampers are provided as necessary to protect critical means of escape against passage of fire, smoke and combustion products in the early stages of a fire?: <i>N/A</i></p> <p>📌 Complete building (Complete Building)</p> <p>Finding</p> <p>See recommendation above regarding compartmentation/service risers.</p>	N	
Means of Giving Warning in Case of Fire	Substantial Risk	<p>Extent of automatic fire detection generally appropriate for the occupancy and fire risk?: <i>No</i></p> <p>📌 Complete building (Complete Building)</p> <p>Finding</p> <p>The premises should be provided with an appropriate fire warning system to a correct grade and with a correct detection level according to the occupancy, design and use of the building.</p> <p>Actions Required</p> <p>⊗ Fire warning system-correct grade/detection</p> <p><i>In light of recent findings concerning compartmentation (service risers) and flat entrance doors, subject to further investigations/survey, the premises should be provided with an appropriate fire warning system to provide early warning to residents</i></p>	N	

		<p>of a fire in other parts of the building which could facilitate full evacuation of a specific area of the block.</p> <p>— complete by 23 Mar 2021 to reduce the risk by 100%</p>		
Relevant Fire Extinguishing Systems	Trivial Risk	<p>Is fixed firefighting equipment and fire safety systems provided where required and are they suitable for the risks identified?: No</p> <p>📍 Princess Court, Coronation Street, Cambridge (Ground Floor)</p> <p>Finding</p> <p>SIB - access and provision of information for fire fighters</p> <p>Actions Required</p> <p>✔ PIB - access and provision of information for fire fighters</p> <p><i>A new SIB has been installed, however, it is not accessible. The lock type should be checked to ensure it is consistent with CCCs PIB key.</i></p> <p><i>The assessor does not believe fire plans are located inside - these should be provided. (copies of those located in the SIB for Hanover Ct will suffice until plans for both blocks are brought up to date).</i></p> <p>— complete by 04 Aug 2022 to reduce the risk by 50%</p>	N	
Procedures and Arrangements	-	<p>Competent person(s) appointed to assist in undertaking the preventive and protective measures (i.e. relevant general fire precautions)?: Yes</p> <p>📍 Complete building (Complete Building)</p> <p>Finding</p> <p>The Council has a fire safety advisor in place to assist Estates and Facilities/Compliance Team.</p>	N	
Procedures and Arrangements	-	<p>Is there a suitable record of the fire safety arrangements?: Yes</p> <p>📍 Complete building (Complete Building)</p> <p>Finding</p> <p>The Fire Risk Management Strategy includes blocks of flats.</p>	N	
Procedures and Arrangements	-	<p>Appropriate fire procedures in place?: Yes</p> <p>📍 Complete building (Complete Building)</p> <p>Finding</p> <p>Fire procedures (stay put) are displayed in Fire Action Notices around the block. Where required these should be updated and the information shared with residents.</p>	N	
Procedures and Arrangements	Tolerable Risk	<p>Are procedures in the event of fire appropriate and properly documented?: No</p> <p>📍 Complete building (Complete Building)</p> <p>Finding</p> <p>Resident fire safety information</p> <p>Actions Required</p> <p>✖ Resident fire safety information - provide</p> <p><i>To comply with The Fire Safety (England) Regulations 2022, residents should be supplied with fire safety information and instruction appropriate to the building to include what to do in the event of a fire and the importance of a flat entrance fire door (where installed).</i></p> <p>— complete by 16 Aug 2023 to reduce the risk by 100%</p>	N	
Procedures and Arrangements	-	<p>Are there suitable arrangements for summoning the fire and rescue service?: N/A</p> <p>📍 Complete building (Complete Building)</p> <p>Finding</p>	N	

		Residents would be expected to call the FRS.		
Procedures and Arrangements	-	<p>Are there suitable arrangements to meet the fire and rescue service on arrival and provide relevant information, including that relating to hazards to fire-fighters?: <i>No</i></p> <p>📍 Complete building (Complete Building)</p> <p>Finding</p> <p>Information available for firefighters on arrival at the premises requires updating.</p> <p>Actions Required</p> <p>✔ Information to firefighters (PIB)</p> <p><i>Ensure any secure information box (SIB) contains all information relevant to the emergency services. In particular in the case of the fire service, provide keys to the fire warning panel/s, relevant site and floor plans annotated with, or; separate details of hazards and risk rooms, as well as a vulnerability list where appropriate.</i></p> <p><i>This should include evacuation arrangements and risks following and identified from PCFRA's and PEEP's.</i></p> <p><i>The current plans date from October 2007. Once PCFRAs have been carried out any relevant information/PEEPS should be held in the SIB.</i></p> <p><i>May 2023 - A contractor has been engaged to update the fire plans in line with the latest guidance for SIB/ERP.</i></p> <p><i>— complete by 23 Mar 2021 to reduce the risk by 100%</i></p>	N	
Procedures and Arrangements	Substantial Risk	<p>Are there adequate procedures for evacuation of any disabled people who are likely to be present?: <i>No</i></p> <p>📍 Complete building (Complete Building)</p> <p>Finding</p> <p>Procedures for people with restricted mobility (PRM) and/or who are vulnerable to be confirmed through person centered fire risk assessments.</p> <p>Actions Required</p> <p>✖ PRM procedures</p> <p><i>An action point from the recent specific fire risk assessment is to establish if there are residents who need assistance to evacuate their flat.</i></p> <p><i>On completion of this survey PEEPs maybe required for individual residents with copies kept in the secure information box (SIB).</i></p> <p><i>— complete by 23 Mar 2021 to reduce the risk by 100%</i></p>	N	
Procedures and Arrangements	-	<p>Appropriate liaison with fire and rescue service (e.g. by fire and rescue service crews visiting for familiarization visits)?: <i>Yes</i></p> <p>📍 Complete building (Complete Building)</p> <p>Finding</p> <p>Should CFRS require site visits this can be facilitated.</p> <p>Building plans have been supplied to CFRS in accordance with the FS(E) Regs 2022.</p>	N	

⚠ Assessment Details

URN 1368-3

Overall Building Risk Rating **Substantial Risk**

Assessed building OR area name OR No Princess Court > All Areas

Risk Assessor Fire Safety Compliance

Date of Assessment 08 May 2023**Validated By** Renier Barnard**Date of Validation** 22 Jun 2023

📁 Client Details

Name Cambridge City Council**Address 1** Mandela House**Address 2** 4 Regent St**Town** Cambridge**Post Code**

🏠 Premises Description

Number of Floors 5: Ground + 4 floors: >11m /<18m**Approximate floor area** NA**Building Construction and Layout**

Constructed approx 1968 - concrete block and beam + brick. Flat asphalt roof. There is no external cladding, only brick walls. The building would have been built to design codes at that time. It is not thought that there have been any significant upgrades from a fire safety perspective other than to fit a smoke alarm in each flat.

Building description: There are 49 one/two-bedroom flats which form separate fire compartments with service risers running the full height of the building believed to contain bathroom ventilation, SVP's, electrics, water and gas pipework (see further comment in the report re gas installations). There is access to these at ground floor level opposite flat entrances and possibly from other locations in the block. From the recent fires in this and other similar blocks of flats (Hanover Ct & Kingsway Flats) it is not thought these are adequately fire separated from the flats themselves (see sections below). Flats have recessed balconies constructed of non-combustible materials. All 31 tenant flat entrance doors have been replaced by the Council with FD30S compliant doors. Most if not all the leasehold flat entrance doors, of which there are 18, appear not to be FD30S.

There is a full length walkway at 3rd floor level with a full height unprotected staircase at each end of the block with approx. 60m between staircases. There are three sets of short staircases off each walkway. Ground floor flats have access at the front and rear of the block. First floor flats are accessed (in pairs) by individual external single storey staircases at the rear of the building. 2nd and 4th floor flats are accessed off the 3rd floor walkway - this arrangement means a pair of flats can be reached by going either down a level or up a level from the same entry point off the walkway. The escape staircase at each end of the block provides an alternative means of escape for most, but not all flats. Staircase widths are minimal (approx 800mm) and not designed for full evacuation. There is also a pair of flats at each level off these staircases.

The walkway is undivided and quite deep (at least 3m) with no dedicated down stands to channel smoke away. The walkway is open on one side, but also partially enclosed by storage cupboards. There is a passenger lift at the north end of the block - it is not an emergency evacuation lift, but has controls for firefighters to use it in the event of a fire (see report for an action concerning the status of these).

There is a refuse chute at each end of the 3rd floor off the walkways; one is off the south staircase with its own access landing, setting this facility back and away from the block. The other chute is at the north end of the walkway near the lift. Both chutes are contained in a full height shaft with bins at the base in a secure storage area. Resident storage cupboards are located in the escape routes on each walkway and on most landings. There could also be riser cupboards on the walkways, but the assessor was unable to confirm this.

Princess Court runs parallel with neighbouring block, Hanover Court. There is a green space in between, along with a community room (separate FRA). There is good access to the block for the fire service - a high reach appliance could be used on some areas of the block, but not all.

The block is generally open in that there are no access/fire exit doors and all areas can be freely accessed.

	There are 49 1/2-bedroom flats in the block. Most are Council tenants, but a number of flats have been purchased and are leasehold residents. (31/18split). Some of the latter are sub let.
Main use of Building	General needs block of flats.
Disabled / vulnerable persons	Potentially, some residents will be disabled/vulnerable.
Other persons at risk	The residents living in this block. A caretaker is employed to be on site Monday to Friday. Also, visitors to the block and other persons who may need to access it for various purposes.
Fire loss experience	There have been flat fires in these blocks over the years, with some smaller arson fires.
Fire Service station serving site / estimated travel time	Approx 5 mins from Parkside Fire Station (24hr crewed station) or approx 12-15 mins from the training facility at Milton. High rise PDA for 5 floors and above is mobilised for this block.
Additional sources of oxygen or flammable gases stored on site	None
Relevant Fire Safety Legislation	Regulatory Reform (Fire Safety Order) 2005, Fire Safety Act 2021, Fire Safety (England) Regulations 2022.
Legislation Enforced by	Cambridgeshire Fire & Service
Enforcement Notice issued by Fire Authority	NA

Assessment Details

Assessor	Stephen Cotton MIFireE
Date of Assessment	16.05.2023
Date of previous assessment	04.07.2022
Date for review	May 2024 - or sooner as deemed necessary based on more information about the building becoming available or how it is being utilised as residential accommodation.
Management area of responsibility	Estates & Facilities/Housing Services
Survey type	Type 1 - PAS 79 - Review
"The Risk Profile" for this building has been calculated as	NA
Areas not accessible during visit	Private storage areas. Roof/plant not accessed or individual dwellings. Riser cupboards. The exact layouts of the flats are not known and may vary in their design. Lift motor room.
Other relevant information	<p>A specific fire risk assessment (SFRA) was carried out in May-June 2020 following a fire at Kingsway flats. The SFRA included Princess Court as the design is very similar, and the same issues have been highlighted in previous FRA's and by other fires. The assessment focused on flat entrance doors and service risers (compartmentation). This assessment is referred to in other sections of this report. A copy of the SFRA can be found in 'Documents'.</p> <p>There are garages at the end of the block - these are separate and do not form part of this assessment.</p> <p>There is a Fire Risk Management Group within Cambridge City Council to ensure delivery of its Fire Safety Policy and Fire Risk Management Strategy. Fire risk assessments are part of the strategy to achieve compliance with the FSO.</p> <p>In carrying out this assessment relevant guidance has been considered including 'Fire safety in purpose built blocks of flats', PAS 79-2 and current updates from MHCLG relating to external walls/Fire Safety Act 2021/Fire Safety (England) Regulations 2022.</p> <p>The completion of this report has been delayed awaiting dry riser testing information from TSG which highlighted a significant defect - see testing and maintenance section below.</p>

Fire Evacuation Strategy	At time of assessment there is a stay put policy. However, further investigations regarding the service risers may be undertaken following the Kingsway fire and the SFRA mentioned above. This may result in changes to the evacuation strategy and an interim early warning system and/or additional fire detection in flats might be installed.
AFD ; Warning System	There is currently no fire alarm or detection in the communal areas. It is believed flats are fitted with a smoke alarm in the hallway (LD3). A heat detector was programmed to be installed in the kitchen areas - if these are open-plan living areas, then this will achieve LD2 coverage. Given the comments above regarding the future of the building, additional fire detectors might be provided in flat units.
Escape Routes	<p>Escape from ground floor flats is either from their front or rear access doors. Means of escape from 1st floor flats is via a short open air landing and external staircases. Escape for 2nd, 3rd, 4th floors is via the walkways at 3rd floor level. There is a full height unprotected staircase at both ends of the block providing alternative escape routes once the walkways are reached. There is a travel distance of approx. 60m between the main escape staircases. The exception is for the pairs of flats located off the main escape staircases where this provides single direction directly down the staircase (in theory occupants could travel upwards to access the walkway and the alternative staircase, but this is not ideal if there was smoke in the staircase area). This is an option for 4th floor occupants when descending their staircase, i.e. to go to the other staircase once a walkway is reached. There is also an initial dead end for flats at the end of each walkway, but it is only 3m to the escape staircase and a well ventilated space so acceptable.</p> <p>The main escape staircases are mostly open with no glazing but also no separation at 3rd floor (walkway level). At the uppermost level (4th floor) there is no vent at ceiling/roof level (although there is a skylight that potentially could be upgraded to provide an AOV/OV).</p> <p>The depth of the walkway which is quite deep (3m + with no down stands), along with partial enclosure, may result in (lateral) smoke logging of the escape route. This may occur by either fire emerging from windows below the walkway or from a flat entrance way if the door is not closed. The windows below the walkways are believed to be bedrooms, so a lesser a risk than the kitchen/living room spaces that open onto the balconies on the other side of the building. This also means the higher fire risk rooms are on the opposite face of the building to the escape routes, and may have been an intentional part of the design when built.</p> <p>The walkway provides alternative means of escape but is not a fully 'open balcony/ventilated' approach and protection of the route is not currently afforded by fire resistant flat entrance doors (leasehold doors are unlikely to be FD30S) and storage cupboards.</p> <p>The layout of the staircases to the upper floors and off the walkways mean they are in a vertical channel running the full height of the building which also encourages any smoke and heat to travel upwards, affecting the escape route. In mitigation there are no windows opening onto any of the staircases and tenanted flat entrance doors have been replaced with FD30S units through 2020-21. These have been installed to the BM Trada Q-Mark scheme. Leasehold doors remain a risk to escape route protection/compartimentation.</p> <p>Escape routes are generally sterile with non-combustible linings (believed to be Class O/B-s3,d2).</p> <p>It will be important to maintain the fire doors in good condition and to ensure the self-closing devices are not disconnected by residents. This will be vital to protecting the escape routes and provide occupants the opportunity to escape should they choose to or if they are at risk and need to leave their flat. Changes to fire safety legislation has incorporated recommendations from MHCLG (Grenfell recommendations/Hackitt review) requiring these doors to be regularly inspected by the responsible person and residents informed of the importance of fire doors.</p> <p>There are no final exit doors at ground level, just openings to the stairways.</p>
Emergency Escape Lighting	Emergency lighting is installed throughout the communal areas and appears to be in accordance with BS 5266
Fire Exit Directional Signage	Directional fire exit signage is provided from the 3rd floor walkway, which is illuminated by the accommodation lighting.
Fire Lobbies	There are no fire lobbies.
Smoke ventilation AOV	There is no AOV - see further comments in this report. The staircases and 3rd floor walkway are semi open, which may provide smoke ventilation.
Dry Riser	

Dry riser outlets are installed on the 3rd floor walkway near the lift and on the refuse chute landing, with the inlets at ground level directly below. The hydrants to supply the risers are located in Union Road and Coronation Street. A fire appliance can get within 18-25m of the DR inlet.

Type; Number of Fire Extinguishers

There are no fire extinguishers in the communal areas. It is believed a CO2 extinguisher is located in the lift motor room (not accessed by the assessor).

⊕ Scope of Assessment

- Type 1 assessment only. Recommendations for a type 4 assessment are contained within the FRA report.

🏠 Contact Details

Identity of Client -

Any persons with responsibility for fire safety within the premises (refer to artical 5 of RRF50) -

Telephone number -

➤ Documents

The documents table below shows the documents associated with the assessable area that this assessment belongs to. Showing the version and and expiry date.

Total **7** items.

Document	Contractor	Expiry Date	Version
Fire Strategy Document frmg -fire risk management strategy_final _1_.docx	Steve Cotton	-	1
FRA Supporting Document sfra - ccc flat entrance doors _ service riser__ compartmentaion _1_.docx	Steve Cotton	-	1
Fire Risk Assessment (1 year) RiskAssessment_1368.pdf	Steve Cotton	-	1
FRA Supporting Document kingsway flats - fra supporting pics.docx	Steve Cotton	-	1
Fire Risk Assessment (1 Year) RiskAssessment_1368-1.pdf	Steve Cotton	-	1
Fire Risk Assessment (1 Year) RiskAssessment_1368-2.pdf	Steve Cotton	-	1
FRA Supporting Document princess way dry riser inspection.pdf	CROMWELL FIRE	-	1

Your Risk Assessment Grading

The following section reflects the overall assessment rating.

The risk rating is the qualitative evaluation by the risk assessor on the likelihood of a hazardous event occurring, and the consequence in consideration of harm to life. The risk assessor's methodology is reflected by the risk matrix, which is applied to establish a risk score and risk rating.

When a risk is adequately controlled, the acceptable risk that remains is known as the 'Residual Risk', reflecting a well-controlled and well-managed hazard, considered to meet the legal duty of 'so far as is reasonably practicable'. This means that, although the hazard is adequately controlled, risk remains and so an appropriate level of control and management is required. The acceptable residual risk is stated for each hazard category, reflecting the desired risk rating, against what is currently being achieved.

The risk matrix is utilised throughout the assessment to evaluate the likelihood of a hazardous event occurring and the consequences.

Risk Matrix			LIKELIHOODS					
			Low	1	Moderate	2	Extreme	3
CONSEQUENCES	High Harm	3	Moderate Risk	3	<input checked="" type="checkbox"/> Substantial Risk	6	Intolerable Risk	9
	Medium Harm	2	Tolerable Risk	2	Moderate Risk	4	Substantial Risk	6
	Low Harm	1	<input checked="" type="checkbox"/> Trivial Risk	1	Tolerable Risk	2	Moderate Risk	3

Legend Current Risk Score Residual/Baseline Risk Score

In consideration of the risk control measures evident during the risk assessment, and in consideration of the acceptable residual risk, the **overall likelihood** risk rating is:

1 Low 2 Moderate Extreme

In this context, a definition of the above terms is as follows:

Low: Outbreak of fire unlikely to result in serious injury or death of any occupant (other than an occupant sleeping in a room in which a fire occurs).

Moderate: Outbreak of fire could foreseeably result in injury (including serious injury) of one or more occupants, but it is unlikely to involve multiple fatalities.

Extreme: Significant potential for serious injury or death of one or more occupants.

In consideration of the risk control measures evident during the risk assessment, and in consideration of the acceptable residual risk, the **overall consequence** risk rating is:

1 Low Harm Medium Harm 3 High Harm

In this context, a definition of the above terms is as follows:

High Harm: Lack of adequate controls applied to one or more significant fire hazards, such as to result in significant increase in likelihood of fire.

Medium Harm: Normal fire hazards (e.g. potential ignition sources) for this type of occupancy, with fire hazards generally subject to appropriate controls (other than minor shortcomings).

Low Harm: Unusually low likelihood of fire as a result of negligible potential sources of ignition.

Therefore, it is considered that the current **overall risk** to persons potentially associated with the premises is:

1 Trivial Risk Tolerable Risk Moderate Risk 6 Substantial Risk Intolerable Risk

Overall Residual Risk

In consideration of the premises, activities, and risk profile applied, the **overall residual risk** is:

1 Trivial Risk Tolerable Risk Moderate Risk Substantial Risk Intolerable Risk

Risk Rating Definition

A suitable risk-based control plan should involve effort and urgency that is proportional to risk:

Risk level	Action and timescale
Trivial Risk	No action is required and no detailed records need be kept.
Tolerable Risk	No major additional fire precautions required. However, there might be a need for reasonably practicable improvements that involve minor or limited cost.
Moderate Risk	It is essential that efforts are made to reduce the risk. Risk reduction measures, which should take cost

Substantial Risk
Intolerable Risk

into account, should be implemented within a defined time period. Where moderate risk is associated with consequences that constitute extreme harm, further assessment might be required to establish more precisely the likelihood of harm as a basis for determining the priority for improved control measures.

Considerable resources might have to be allocated to reduce the risk. If the premises are unoccupied, it should not be occupied until the risk has been reduced. If the premises are occupied, urgent action should be taken.

Premises (or relevant area) should not be occupied until the risk is reduced.

[View All Historical](#)

Assessment Report

FIRE HAZARDS AND THEIR ELIMINATION OR CONTROL

Electrical Sources of Ignition

Princess Court, Coronation Street, Cambridge1 / 1

- Reasonable measures taken to prevent fires of electrical origin?** Yes

Yes

FWT due in May 2024.
— SC @ 22 Jun 2023 13:50:45
- Fixed installation periodically inspected and tested?** Yes

Yes

FWT due in May 2024.
— SC @ 22 Jun 2023 13:50:45
- Portable appliance testing (where appropriate) carried out?** N/A

N/A

No PA equipment in the communal areas.
— SC @ 22 Jun 2023 13:50:48
- Suitable policy regarding the use of personal electrical appliances?** N/A

N/A

No personal electrical appliances in use in the communal areas.
— SC, RB @ 22 Jun 2023 13:50:54
- Suitable limitation of trailing leads and adapters?** N/A

N/A

No trailing leads in use in the communal areas.
— SC @ 22 Jun 2023 13:50:57
- Is photovoltaic equipment present and appropriately tested?** N/A

N/A

NO PV equipment installed on the building.
— SC @ 22 Jun 2023 13:51:00
- Are external vehicle charging facilities suitably positioned / protected?** N/A

N/A

No EV charging equipment installed at this site.
— SC @ 22 Jun 2023 13:51:04

FWT: May 2019

Smoking

Princess Court, Coronation Street, Cambridge1 / 1

- Reasonable measures taken to prevent fires as a result of smoking?** Yes

Yes

A no smoking policy is applied to the communal areas in accordance with The Health Act 2006 and signage displayed accordingly.
— SC @ 22 Jun 2023 13:51:08



IMG_2378

— SC 18 May 2023 08:50:14

✔ **Smoking prohibited on the premises?** Yes

Smoking is only permitted in the flat units and not in the communal or ancillary areas.

— SC 22 Jun 2023 13:51:11

✔ **Smoking prohibited in appropriate areas?** N/A

As above.

— SC 22 Jun 2023 13:51:14

✔ **Suitable arrangements for those who wish to smoke?** N/A

As above.

— SC 22 Jun 2023 13:51:16

✔ **This policy appeared to be observed at time of inspection?** Yes

At time of assessment there was no evidence of smoking taking place in the communal areas.

— SC 22 Jun 2023 13:51:21

No smoking signs are located at the main entrances to the building and at access points to the first floor landings.

They are also displayed on the walkway at 3rd floor.

🔥 Arson

Princess Court, Coronation Street, Cambridge

1 / 1

✔ **Does basic security against arson by outsiders appear reasonable?** Yes

The building has fully open access that can lead to unauthorised access with the potential for arson. It would benefit from an estate improvement scheme to make it more secure, however, this is unlikely to take place given the future of the building.

Bin storerooms were in reasonable condition.

See also Housekeeping section.

— SC 22 Jun 2023 13:51:26



IMG_2398

— SC 18 May 2023 08:55:33

✔ **Is there an absence of unnecessary fire load in close proximity to the premises or available for ignition by outsiders?**

Yes

A couple of items were noted dumped outside bin room 2 which should be collected. They are away from the building and did not pose a significant risk.

— SC 22 Jun 2023 13:51:30



IMG_2405

— SC 18 May 2023 08:56:25

There is open access to these flats, although the refuse/bin rooms are limited in their availability to residents and locked at other times. Storage cupboards were secure and fully enclosed. Some stored items on a few landings could be a source of combustibles, but this is generally low risk. Anecdotally, arson is not a significant issue.

Portable Heaters and Heating Installations

All Areas 2 / 1

- ✔ **Is the use of portable heaters avoided as far as practicable?** N/A
- ✔ **If portable heaters are used: Is the use of the more hazardous type (e.g. radiant bar fires or lpg appliances) avoided?** N/A
- ✔ **If portable heaters are used: Are suitable measures taken to minimize the hazard of ignition of combustible materials?** N/A
- ✔ **Are fixed heating installations subject to regular maintenance?** N/A

There is no heating in the communal areas.

⚡ Lightning

Complete building 1 / 1

- ✔ **Do the premises have a lightning protection system and if so does it appear satisfactory?** Yes

A LPS is in place - the assessor was not able to confirm if it is satisfactory, however, it is tested/maintained.

— SC 22 Jun 2023 13:51:34

The lightening equipment was tested: 27/05/2022.

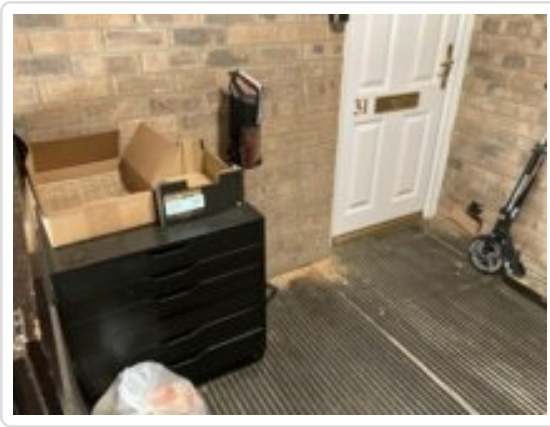
🏠 Housekeeping

All Areas 1 / 1

- ✘ **Is the standard of housekeeping to the assessed area generally adequate?** No

Items located in escape routes. These can be an obstruction to the means of escape, a trip hazard for fighters and add to fire loading in an area that should be managed as a sterile space.

— SC, RB 27 Dec 2023 11:20:47



IMG_2379

— SC 18 May 2023 09:02:44

IMG_2397

— SC 18 May 2023 09:02:44

Tasks 1

Items located in escape routes - manage/remove

A range of items were observed in the communal areas outside flat entrances. See photographs.
Outside flats: 14 and 31
These should be managed/removed in accordance with the Councils Zero Tolerance policy.

Location All Areas (Housing Services, Princess Court, All Areas)

Medium Priority

— complete by 16 Aug 2023 to reduce the risk by 100% SC, RB

Assigned Users Jamie Lambert

Completed Jamie Lambert @ 27 Dec 2023 11:20:47

More specifically do combustible materials appear to be separated from ignition sources? Yes

Although there are a few items outside flats they are not near ignition sources.

— SC 22 Jun 2023 13:51:39

More specifically is there an avoidance of an unnecessary accumulation of combustible materials or waste? Yes

Bin rooms in good housekeeping condition - see Arson above re Bin Room 2

— SC 22 Jun 2023 13:51:54

More specifically is there appropriate storage of hazardous materials? N/A

No hazardous materials observed.

— SC 22 Jun 2023 13:51:42

More specifically is there an avoidance of inappropriate storage of combustible materials? Yes

As above.

— SC 22 Jun 2023 13:51:52

Generally housekeeping is satisfactory with only a few items to be dealt with.

Hazards Introduced By Outside Contractors and Building Works

Princess Court, Coronation Street, Cambridge

1 / 1

Are fire safety conditions imposed on outside contractors? Yes

Is there satisfactory control over works carried out on the premises by outside contractors (including "hot work" permits)? Yes

If there are in-house maintenance personnel, are suitable precautions taken during "hot work", including use of "hot work" permits? Yes

Contractors and building work are subject to the Council's Health and safety + Fire Safety Policies.

Other Significant Fire Hazards That Warrant Consideration Including Process Hazards That Impact on General Fire Precautions

⊗ Are there other Significant Fire Hazards That Warrant Consideration Including Process Hazards That Impact on General Fire Precautions? **Yes**

Gas installations - building structural stability and capacity

— SC, RB 27 Dec 2023 16:55:35

✓ Tasks **1**

✓ Gas installations - building structural stability and capacity

A report has been submitted to CCC regarding the ability the structures at Hanover and Princess Courts to cope with a gas installation explosion. The report recommends removal of gas installations at Hanover and Princess Courts to completely negate the risk of a progressive building collapse. The Council has accepted and will implement this recommendation.

Depending on the time taken to undertake removal and fitting alternative appliances, it is recommended that the Fire and Rescue Service are made aware of this hazard and resulting risk so that they can plan accordingly. Discussion with them regarding information in the PIB might be appropriate as well as means to evacuate the block if required.

Location Princess Court, Coronation Street, Cambridge (Estates & Facilities, Princess Court, Coronation Street, Cambridge)

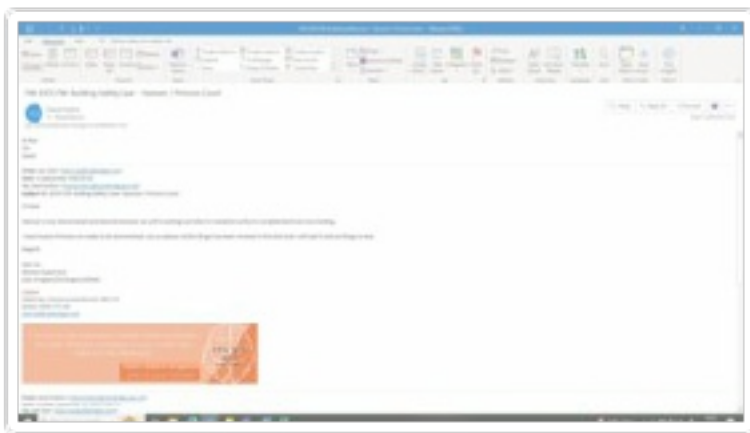
High Priority

— complete by 12 Sep 2021 to reduce the risk by 100% SC, RB

Assigned Users Renier Barnard

Completed Renier Barnard @ 27 Dec 2023 16:55:35

After



Hanover Princess Gas Removal

— RB 27 Dec 2023 16:55:32

The building has Estate Safety checks in place, which includes the reduction and elimination of fire hazards.

Generally, housekeeping is very good.

Where there is plenty of space such as on walkways and underneath staircases, bicycles are not so much of a concern compared to the small stairways off the main walkway that need to be monitored and managed in accordance with the Council's zero tolerance policy.

The issue with gas supply/installations into the block is a work in progress to reduce the risk from gas.

FIRE PROTECTION MEASURES

Means of Escape

Complete building **2 x 1 = 2 | Tolerable Risk** **▼ Trivial Risk**

1 / 3

✓ Is it considered that the premises are provided with reasonable means of escape in case of fire? **N/A**

The means of escape are not ideal when compared to current benchmark standards, but reasonable given the age and features of the building if other measures are addressed as per the recommendations for action contained in this and other sections of this report.

— RB, SC 22 Jun 2023 13:52:20

✓ Adequate design of escape routes? **N/A**

As above

— SC 22 Jun 2023 13:52:23

✔ **Adequate provision of exits?** Yes

Exits are at the walkways and into the two main staircases with an open exit at the base of the stairs leading to ultimate safety.

— SC 22 Jun 2023 13:52:26

✘ **Exits easily and immediately openable where necessary?** No

Manual override devices activated.

Likelihood: Low

Consequence: Low Harm

1 x 1 = 1 | Trivial Risk

— SC 22 Jun 2023 13:52:51



IMG_2394

— SC 18 May 2023 09:38:35

✔ **Fire exits open in direction of escape where necessary?** N/A

As above - exits are open (no doors).

— SC 22 Jun 2023 13:52:29

✔ **Avoidance of sliding or revolving doors as fire exits where necessary?** N/A

None present.

— SC 22 Jun 2023 13:52:32

✔ **Satisfactory means for securing exits?** N/A

✔ **Reasonable distances of travel: Where there is a single direction of travel?** Yes

Depending on the benchmark technical approach taken (balcony access) the travel distances are acceptable. However, other areas of this report make reference to smoke venting and how this is potentially limited impacting on the travel distances from different parts of the building.

— SC 22 Jun 2023 13:52:35

✔ **Reasonable distances of travel: Where there are alternative means of escape?** Yes

Depending on the benchmark technical approach taken (balcony access) the travel distances are acceptable. However, other areas of this report make reference to smoke venting and how this is potentially limited impacting on the travel distances from different parts of the building.

— SC 22 Jun 2023 13:52:39

✘ **Suitable protection of escape routes including provision of fire doors/hatches including to roof voids, individual dwellings/flats, compartment doors, riser cupboard doors and risk rooms?** No

An inspection of the storage/electrical cupboard doors revealed that the doors are non fire rated and the integrity of the door set and therefore the escape route may be compromised.

Likelihood: Low

Consequence: Medium Harm

2 x 1 = 2 | Tolerable Risk

— SC, RB 18 May 2023 09:38:35

✔ **Tasks** 2

- Storage cupboard doors - upgrade/replace

An inspection of the storage cupboard doors revealed that the doors are non fire rated and the integrity of the door set and therefore the escape route may be compromised.

These doors should be added to the program of works for upgrading or replacement.

The doors are secure without openings at the top and bottom (like Kingsway). From being able to observe one cupboard (empty and unlocked) there is no power supply so no ignition source.

Location Complete building (Housing Services, Princess Court, All Areas)

Low Priority

— complete by 04 Jul 2023 to reduce the risk by 50% SC, RB

Assigned Users Fire Safety Compliance

Electrical cupboard doors - upgrade/replace

An inspection of the storage cupboard doors revealed that the doors are non fire rated and the integrity of the door set and therefore the escape route may be compromised.

These doors should be added to the program of works for upgrading or replacement.

Location Ground floor

Low Priority

— complete by 16 May 2024 to reduce the risk by 50% SC, RB

Assigned Users Fire Safety Compliance

✔ Suitable fire precautions for all inner rooms? N/A

None present.

— SC 22 Jun 2023 13:52:41

✔ Escape routes unobstructed? Yes

Escape routes generally clear - see Housekeeping section for minor items.

— SC 22 Jun 2023 13:52:43

✔ It is considered that the premises are provided with reasonable arrangements for means of escape for disabled people. N/A

The building was not designed to accommodate disabled persons/PRM. Any issues with individual occupants being able to escape should be identified through a PCFRA (person centred fire risk assessment).

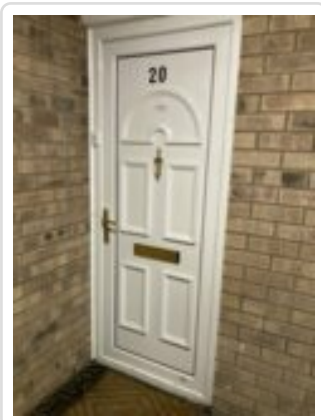
— SC 22 Jun 2023 13:52:48

✘ Suitable protection of escape routes including provision of fire doors/hatches including to roof voids, individual dwellings/flats, compartment doors, riser cupboard doors and risk rooms? No

A survey of flat entrance doors and the door furniture in 2019 revealed that the doors on escape routes were non fire rated doors. All tenant doors (27) in the block were replaced in 2020/21. However, leasehold doors are still mostly non-compliant.

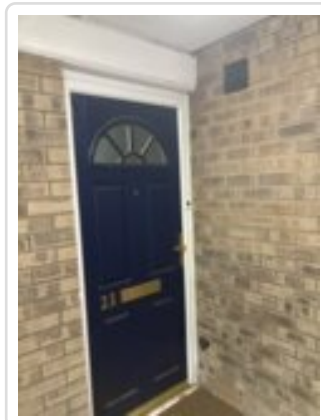
Likelihood: Moderate **Consequence: High Harm** **3 x 2 = 6 | Substantial Risk**

— SC, RB 19 Jun 2023 09:56:41



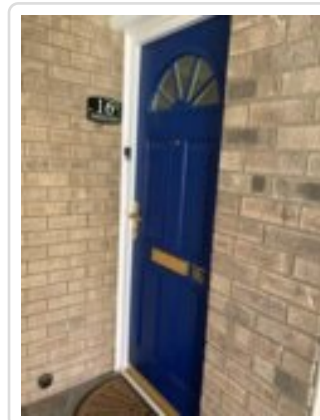
IMG_0465

— SC 12 Jul 2022 11:19:40



IMG_0464

— SC 12 Jul 2022 11:19:40



IMG_0487

— SC 12 Jul 2022 11:22:16



IMG_0488

— SC 12 Jul 2022 11:22:16



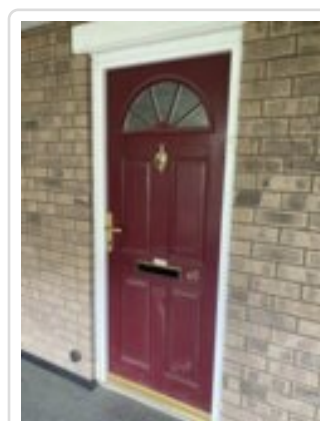
IMG_0485

— SC 12 Jul 2022 11:22:16



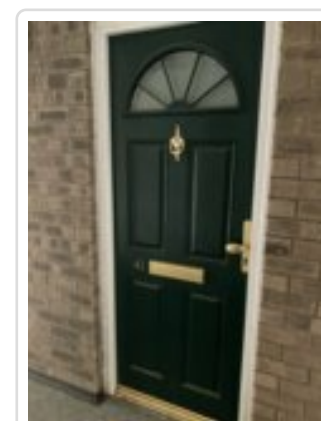
IMG_0483

— SC 12 Jul 2022 11:22:16



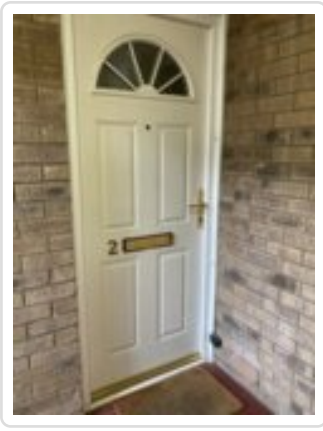
IMG_0480

— SC 12 Jul 2022 11:22:16



IMG_0479

— SC 12 Jul 2022 11:22:16



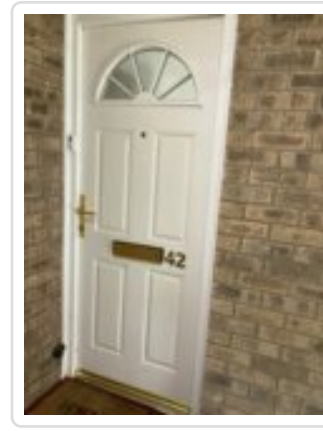
IMG_0484

— SC ⌚ 12 Jul 2022 11:22:17



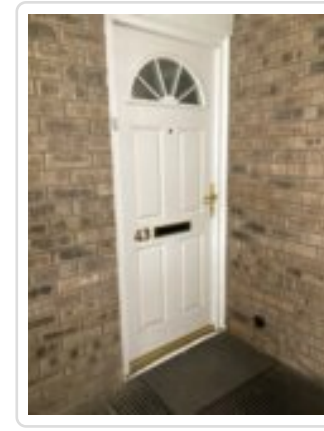
IMG_0481

— SC ⌚ 12 Jul 2022 11:22:17



IMG_0478

— SC ⌚ 12 Jul 2022 11:22:17



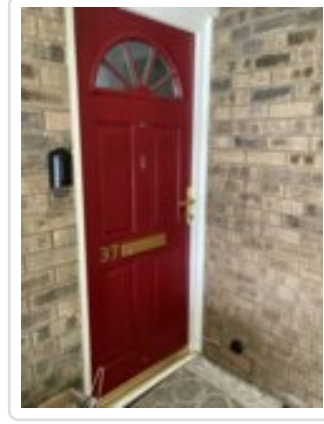
IMG_0477

— SC ⌚ 12 Jul 2022 11:22:17



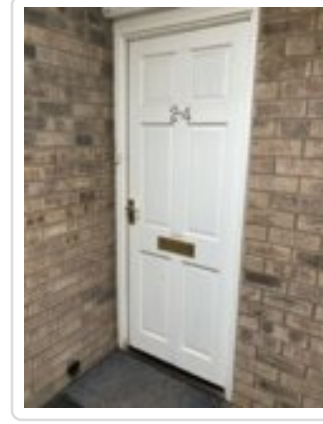
IMG_0476

— SC ⌚ 12 Jul 2022 11:22:17



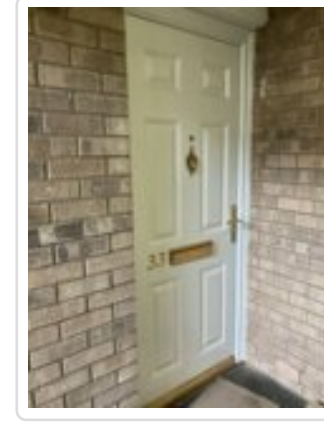
IMG_0472

— SC ⌚ 12 Jul 2022 11:22:17



IMG_0467

— SC ⌚ 12 Jul 2022 11:22:18



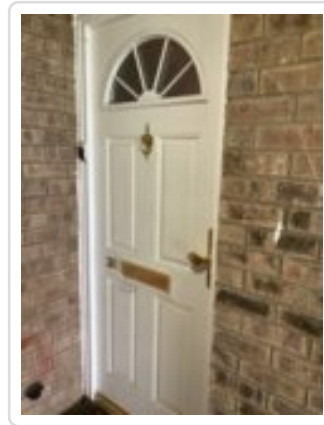
IMG_0474

— SC ⌚ 12 Jul 2022 11:22:18



IMG_0468

— SC ⌚ 12 Jul 2022 11:22:18



IMG_0473

— SC ⌚ 12 Jul 2022 11:22:18

Tasks 1

Leaseholder Flat entry doors-non FR

All leasehold doors in a recent survey (end of 2019) were identified as HIGH priority as they are non fire rated flat entry doors and need to be replaced with an FD30S standard door.

Leaseholders were written to in 2020 and offered a replacement door as part of the Councils program of work.

However, many of the doors across the block remain non-compliant.

The Council should continue to pursue flat entry door replacement where there is non-compliance. The Leasehold Team are currently in the process of writing to leaseholders again to request evidence of compliance.

Location Princess Court, Coronation Street, Cambridge (Estates & Facilities, Princess Court, Coronation Street, Cambridge)

High Priority

— complete by 12 Apr 2022 to reduce the risk by 100% SC, RB

Assigned Users Fire Safety Compliance

⊛ Suitable protection of escape routes including provision of fire doors/hatches including to roof voids, individual dwellings/flats, compartment doors, riser cupboard doors and risk rooms? No

Damage to flat entrance door

— SC, RB ⌚ 24 May 2024 15:59:30



IMG_0475

— SC 12 Jul 2022 11:36:06

✓ Tasks 1

✓ Damage to flat entrance door - repair/replace

The fire resisting glazing to flat 35 FED has been damaged. This should be replaced.

Location All Areas (Housing Services, Princess Court, All Areas)

High Priority

— complete by 04 Aug 2022 to reduce the risk by 100% SC, RB

Assigned Users Fire Safety Compliance

Completed Fire Safety Compliance @ 24 May 2024 15:59:30

The escape for most of the flats above ground floor is via generally semi-open routes which provides venting for smoke, This includes the staircases from ground to first floor flats and those serving 2nd/4th flats off the walkways at 3rd floor. However, also see comment above in 'assessment info - escape routes' regarding impact of a fire on these.

The main staircases at each end running the full height of the building are open (and unprotected) at all levels except the head of the stair. The walkways are also ventilated at each end of the block.

There are skylights at the head of the escape stairs which appear to be openable. These could be investigated further to provide smoke ventilation by adaptation or modification to enable them to be opened manually (remotely) or by AOV, although the benefit may be limited.

The travel distances on the walkways are acceptable, however, they are undivided. These escape routes are neither enclosed corridors or fully open balconies (as per technical guidance). There might be some benefit in providing doors across the walkway where the short staircases emerge on the walkway, but given smoke from a fire below could affect both sides of the partition, it is not clear if these would be effective. Potentially, this offers a progressive horizontal evacuation approach for persons with restricted mobility.

A program to replace all tenant flat entrance doors and to address leasehold doors has been implemented. All tenanted doors have been replaced, whereas all leasehold doors remain non-compliant. This remains a significant risk to the means of escape.

There are no other openings onto the escape routes, which also helps to reduce the likelihood of them being affected by a fire. It is also proposed to replace store cupboard doors with FD30 standard doors, which will also reduce the opportunity for arson. The electrical intake cupboards/risers on the ground floor should also be part of this program.

There are various ventilator breaches in the compartment walls outside flats: 21,26,30,31,49. These have been reviewed by the Compliance Manager (Gareth Basterfield) previously and will not be actioned further. Many have been blanked off with a steel plate - it could not be confirmed if the fitting provides 60 mins fire resistance but is an improvement over an open vent.

🔒 Measures to Limit Fire Spread and Development

Complete building **3 x 2 = 6 | Substantial Risk**

1 / 1

⊗ It is considered that there is: **Compartmentation of a reasonable standard including external faces of buildings** **No**

Compartmentation does not appear to be to the required fire resistance. Following fires in other blocks of similar design breaches in the service riser became apparent. The design of the riser in this block is very similar and likely to present the same issues

Likelihood: Moderate **Consequence: High Harm** **3 x 2 = 6 | Substantial Risk**

— RB, SC 22 Jun 2023 13:53:14

✓ Tasks 2

Compartmentation to provide 30 minutes fire resistance in blocks up to 5 storeys

There is a requirement for compartmentation to provide at least 30 minutes fire resistance in blocks up to 5 storeys.

Location Complete building (Estates & Facilities, Princess Court, Coronation Street, Cambridge)

High Priority

— complete by 23 Jun 2021 to reduce the risk by 50% RB, SC

Assigned Users Fire Safety Compliance

Structural investigation-breach of compartment wall/floor

Further structural investigation is required to ascertain the consequence of the compartmentation breach, to establish if the following actions are required:

- Type 2, 3 or 4 Fire Risk Assessment.
- Change to the Fire Strategy of the building from “Stay Put” to Simultaneous Evacuation
- Installation of Automatic Fire Detection System

The survey should include a fire risk appraisal of the external wall system (PAS 9980) to inform the fire risk assessment.

Location Complete building (Estates & Facilities, Princess Court, Coronation Street, Cambridge)

High Priority

— complete by 23 Dec 2020 to reduce the risk by 50% RB, SC

Assigned Users Fire Safety Compliance

It is considered that there is: Reasonable limitation of linings that might promote fire spread Yes

Escape routes are mostly sterile with non-combustible linings (Believed to be Class O/B-s3,d2 - subject to test).

— SC 22 Jun 2023 13:53:08

As far as can reasonably be ascertained, fire dampers are provided as necessary to protect critical means of escape against passage of fire, smoke and combustion products in the early stages of a fire? N/A

See recommendation above regarding compartmentation/service risers.

— SC 22 Jun 2023 13:53:11

A flat fire in Hanover Court early in 2020 and in block 4 at Kingsway flats in May 2020 resulted in smoke and fire spread through the service riser. The outcomes of a subsequent specific FRA (see 'Evidence') included a review of the stay put policy, installation of linked early warning of fire and further surveys of service risers in all blocks at Kingsway flats and Hanover/Princess Courts (as the buildings are from the same era and very similar in design) to provide solutions to the lack of fire resistance/compartmentation.

This work is being progressed by CCC at Kingsway (in 2023) and has coincided with replacing most flat entrance doors to FD30S standard in 2020-21.

At time of assessment no progress had been made regarding surveys or compartmentation works and is pending completion of Kingsway flats which is likely to inform the approach taken with Princess (and Hanover) Court. The external walls should be part of the type 4 assessment (PAS 9980 FRAEW). The fire in block 4 at Kingsway Flats indicates there are not specific issues with the EWS.

Resident balconies are not constructed of combustible materials. From external observations, generally the use of balconies does not appear to present significant additional fire hazards, although it is difficult to confirm this without being intrusive.

Previously identified vent breaches (outside flats 21,30,31,49) have been reviewed and accepted as no further action required by the Risk and Compliance Manager in 2021. If a more detailed FRA is undertaken, as recommended above, these should be included in that assessment to confirm the decision taken.

Escape routes are mostly sterile with non-combustible linings (believed to be Class O/B-s3,d2).

Emergency Escape Lighting

Princess Court, Coronation Street, Cambridge

1 / 1

Reasonable standard of emergency escape lighting system provided? Yes

Emergency lighting is provided in the escape routes and appeared to be in working order.

The test records show continual failures as highlighted in 2022. See Test and Maintenance below.

— RB, SC 22 Jun 2023 13:53:29

Emergency lighting is provided throughout the communal areas and appeared to be in working order. The assessor was not able to verify its effectiveness at the time of assessment.

Re testing - see section below

🔗 Fire Safety Signs and Notices

Princess Court, Coronation Street, Cambridge

1 / 1

✔ Reasonable standard of fire safety signs and notices? **Yes**

Fire action notices with fire procedures are in place as are no smoking signs. Fire exit directional signage is satisfactory given the layout of the block.

One of the DR inlet boxes has been defaced with stickers - the box is still identifiable to the FRS but it is recommended these are removed.

— 👤 SC ⌚ 22 Jun 2023 13:53:34



IMG_2392

— 👤 SC ⌚ 18 May 2023 10:16:38



IMG_2395

— 👤 SC ⌚ 18 May 2023 10:16:39



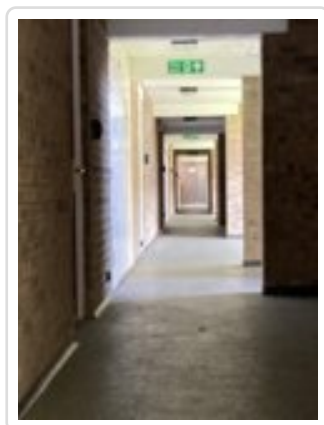
IMG_2389

— 👤 SC ⌚ 18 May 2023 10:16:39



IMG_2385

— 👤 SC ⌚ 18 May 2023 10:16:39



IMG_2386

— 👤 SC ⌚ 18 May 2023 10:16:39



IMG_2375

— 👤 SC ⌚ 18 May 2023 10:16:39



IMG_2374

— 👤 SC ⌚ 18 May 2023 10:16:40



IMG_2378

— 👤 SC ⌚ 18 May 2023 10:16:40

Fire exit signage incorporates pictogram and text format.

The position and location of signage is generally satisfactory in terms of compliance and give the layout/design of the blocks.

🔔 Means of Giving Warning in Case of Fire

Complete building

3 x 2 = 6 | Substantial Risk

1 / 1

✔ Reasonable manually operated electrical fire alarm system provided? **N/A**

✔ Automatic fire detection provided- Throughout the Premises? **N/A**

✔ Automatic fire detection provided- Part of the premises only? **N/A**

✘ Extent of automatic fire detection generally appropriate for the occupancy and fire risk? **No**

The premises should be provided with an appropriate fire warning system to a correct grade and with a correct detection level according to the occupancy, design and use of the building.

Likelihood: Moderate

Consequence: High Harm

3 x 2 = 6 | Substantial Risk

— 👤 SC, RB ⌚ 22 Jun 2023 13:53:37

✔ Tasks **1**

- Fire warning system-correct grade/detection

In light of recent findings concerning compartmentation (service risers) and flat entrance doors, subject to further investigations/survey, the premises should be provided with an appropriate fire warning system to provide early warning to

residents of a fire in other parts of the building which could facilitate full evacuation of a specific area of the block.

Location Complete building (Estates & Facilities, Princess Court, Coronation Street, Cambridge)

High Priority

— complete by 23 Mar 2021 to reduce the risk by 100% 👤 SC, RB

Assigned Users 👤 Fire Safety Compliance

✔ **Remote transmission of alarm signals?** NA

This assessment has considered the communal areas where there is currently no fire alarm system or fire detection to initiate fire safety systems such as AOV.

Flats have only a smoke alarm in the hallways (LD3) and are due to have additional heat detection installed in kitchens/living area in a program of works in 2021/22. The assessor is unable to confirm if these were installed.

Where this is not an open plan area a smoke alarm is recommended for the living area providing LD2 coverage.

Where this is not an open plan area a smoke alarm is recommended for the living area providing LD2 coverage.

Following the fire at Kingsway flats, in Hanover Court earlier in 2020 and a specific fire risk assessment, the need to provide early warning to residents of a fire other than in their own dwelling was identified. This was in conjunction with providing an interim measure until all flat entrance doors are replaced with FD30S units and compartmentation work on service risers is completed.

A survey to determine fire alarm requirements is required and may link dwellings in particular off staircases that could become compromised by a fire due to the design and layout of the building.

See more up to date comments above in 'Premises Description' and 'Evacuation Strategy'.

2023: At time of assessment this work is still pending with the Kingsway blocks to be completed first and form a template for Hanover Court. The addition of smoke alarms in flats (not linked) may provide an acceptable interim solution by providing early warning should smoke enter a service riser from the fire compartment of origin and spread to other flats.

🔧 Manual Fire Extinguishing Appliances

Princess Court, Coronation Street, Cambridge

1 / 1

✔ **Reasonable provision of portable fire extinguishers?** Yes

✔ **Hose reels provided?** N/A

✔ **Are all fire extinguishing appliances readily accessible?** N/A

Unable to confirm due to lack of access to the lift motor room.

— 👤 SC ⌚ 22 Jun 2023 13:53:45

It is not appropriate to provide fire extinguishers in the communal areas.

The assessor believes a CO2 fire extinguisher is provided in the lift motor room which was not accessed.

🔧 Relevant Fire Extinguishing Systems

Complete building

1 / 3

✔ **Is fixed firefighting equipment and fire safety systems provided where required and are they suitable for the risks identified?** Yes

Secure information box (SIB) and Dry Riser (DR) installed.

The DR outlets are not enclosed in a box for protection but were secured with a strap and lock.

— 👤 SC ⌚ 18 May 2023 10:28:17



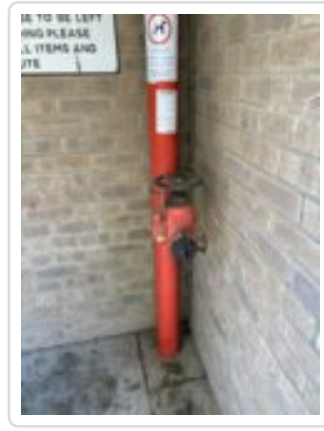
IMG_2392

— SC ⌚ 18 May 2023 10:27:19



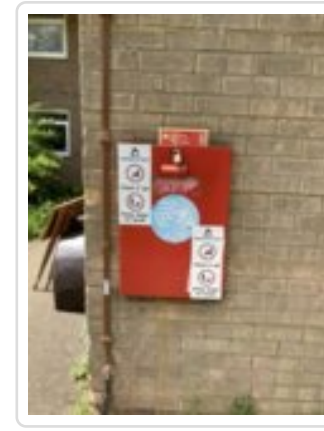
IMG_2377

— SC ⌚ 18 May 2023 10:27:20



IMG_2388

— SC ⌚ 18 May 2023 10:27:20



IMG_2395

— SC ⌚ 18 May 2023 10:27:20



IMG_2374

— SC ⌚ 18 May 2023 10:27:20

☒ **Is a natural or mechanical smoke control system employed where necessary and is it appropriate for the location?** N/A

There are no specifically designed smoke control provisions - see commentary above regarding the open walkway and main escape staircases.

— SC ⌚ 22 Jun 2023 13:53:48

☒ **Is fixed firefighting equipment and fire safety systems provided where required and are they suitable for the risks identified?** No

SIB - access and provision of information for fire fighters

Original Likelihood: Low Original Consequence: Low Harm 1 x 1 = 1 | Trivial Risk

— RB, SC ⌚ 2 Feb 2024 12:06:16

☑ **Tasks** 1

☑ **PIB - access and provision of information for fire fighters**

A new SIB has been installed, however, it is not accessible. The lock type should be checked to ensure it is consistent with CCCs PIB key.

The assessor does not believe fire plans are located inside - these should be provided. (copies of those located in the SIB for Hanover Ct will suffice until plans for both blocks are brought up to date).

Location Ground floor

High Priority

— complete by 04 Aug 2022 to reduce the risk by 50% RB, SC

Assigned Users Fire Safety Compliance

Completed Fire Safety Compliance @ 2 Feb 2024 12:06:16

☒ **Is fixed firefighting equipment and fire safety systems provided where required and are they suitable for the risks identified?** No

Fire fighters lift - assess

— SC, RB ⌚ 25 Mar 2024 12:39:31

☑ **Tasks** 1

☑ Fire fighters lift - assess

The lift installation appears to have been a fire fighters lift when new. This should be confirmed or otherwise by lift engineers and its current suitability/reliability for use as such.

Location Princess Court, Coronation Street, Cambridge (Estates & Facilities, Princess Court, Coronation Street, Cambridge)

Medium Priority

— complete by 16 Nov 2023 to reduce the risk by 100% 👤 SC, RB

Assigned Users 👤 Steph Coppola

Completed Steph Coppola @ 25 Mar 2024 12:39:31

A dry riser outlet is provided on the 3rd floor walkway at each end of the building, with the inlet directly below.

A SIB for Princess Court is located at the Coronation Street end of the block adjacent the access staircase. The assessor was unable to access the box (wrong key) to check that fire plans for the block are located inside.

It is doubtful there is any info for FRS contained in the box. It requires to be in line with the latest NFCC/FIA guidance. See Procedures and Arrangements below in this report.

It is recommended that the fire service are invited to use the DR's as part of a training/familiarisation exercise.

The lift has a fire fighters control switch located outside the doors at ground level - it is not clear if this is still operative. See action above and section below.

See section below regarding DR testing and seizure of outlet valve requiring rectification.

↕ Other Relevant Fixed Systems and Equipment

All Areas 2 / 1

☑ **Has suitable provision of fire-fighters switch(es) for high voltage luminous tube signs, etc been made?** N/A

🚪 Fire Doors

All Areas 1 / 1

☑ **Are Fire doors regularly maintained in accordance with the Fire Safety Order** Yes

CCC have a survey program in place (this does not include leaseholders).

Leaseholders are being written to in order to establish the compliance of their flat entrance door.

— 👤 SC 🕒 22 Jun 2023 13:53:58

☑ **Does the fire door compliance documentation indicate that the doors have test reports to : BS 476 or BS EN 1634?** Yes

Where the Council has instigated a door replacement program (2020/21) the contract specified doors to meet this standard and to be installed by a BM Trada Q Mark installer with documentation supplied to CCC.

— 👤 SC 🕒 22 Jun 2023 13:54:02

☑ **Are Fire Door test reports available for both sides of the fire door as required by Building Regulations** Yes

As above.

— 👤 SC 🕒 18 May 2023 11:12:51

☑ **Do the electronic locks on fire exit doors fail safe on actuation of the fire alarm system?** Yes

There are no fire exit doors linked to a fire alarm system, however, the bin room doors have a push to exit button with a manual override device.

— 👤 SC 🕒 22 Jun 2023 13:54:05

☑ **Have you examined the fire door compliance documentation?** N/A

Compliance documentation is held centrally in Estates and Facilities.

— 👤 SC 🕒 22 Jun 2023 13:54:09

☑ **Has a fire door survey been conducted?** Yes

See comment above.

— SC 22 Jun 2023 13:54:12

With regard to leaseholders, a process has been agreed between the Risk Assurance and Compliance Team and the Leasehold Team (Housing Services) to write to the leaseholder for them to confirm and provide evidence that their FED is compliant.

The other linked fire safety issue is the design of the building and how a fire might affect escape routes along with the service riser potentially not being adequately fire separated (subject to survey/appraisal).

A combination of measures would address this given it is not known how a fire may affect the semi open escape routes and includes linked fire warning systems.

Due to the pending redevelopment of the building (as of May 2023), work undertaken is likely to be limited but still needs to take account of the risk and implement the necessary to reduce this to a tolerable level.

Where possible, as residents are decanted, those at the highest levels and furthest from the escape routes/staircases should be relocated first. Flats that are located in the two main staircases should also be vacated to reduce the risk of the staircase being affected by a fire emanating from a flat entrance door. Where units are adopted for temporary accommodation those closest to the ground should be utilised over those at higher levels.

MANAGEMENT OF FIRE SAFETY

Procedures and Arrangements

Complete building

3 x 2 = 6 | Substantial Risk

1 / 1

✔ **Competent person(s) appointed to assist in undertaking the preventive and protective measures (i.e. relevant general fire precautions)?** Yes

The Council has a fire safety advisor in place to assist Estates and Facilities/Compliance Team.

— SC 22 Jun 2023 13:54:14

✔ **Is there a suitable record of the fire safety arrangements?** Yes

The Fire Risk Management Strategy includes blocks of flats.

— SC 22 Jun 2023 13:54:16

✔ **Appropriate fire procedures in place?** Yes

Fire procedures (stay put) are displayed in Fire Action Notices around the block.

Where required these should be updated and the information shared with residents.

— SC 22 Jun 2023 13:54:24

✘ **Are procedures in the event of fire appropriate and properly documented?** No

Resident fire safety information

Likelihood: Low

Consequence: Medium Harm

2 x 1 = 2 | Tolerable Risk

— SC, RB 24 May 2023 13:04:55

✔ **Tasks** 1

Resident fire safety information - provide

To comply with The Fire Safety (England) Regulations 2022, residents should be supplied with fire safety information and instruction appropriate to the building to include what to do in the event of a fire and the importance of a flat entrance fire door (where installed).

Location Complete building (Housing Services, Princess Court, All Areas)

High Priority

— complete by 16 Aug 2023 to reduce the risk by 100% SC, RB

Assigned Users Fire Safety Compliance

✔ **Are there suitable arrangements for summoning the fire and rescue service?** N/A

Residents would be expected to call the FRS.

— SC @ 24 May 2023 13:04:56

⊗ **Are there suitable arrangements to meet the fire and rescue service on arrival and provide relevant information, including that relating to hazards to fire-fighters?** No

Information available for firefighters on arrival at the premises requires updating.

— SC, RB @ 14 Feb 2024 11:50:58

✓ **Tasks** 1

✓ Information to firefighters (PIB)

Ensure any secure information box (SIB) contains all information relevant to the emergency services. In particular in the case of the fire service, provide keys to the fire warning panel/s, relevant site and floor plans annotated with, or; separate details of hazards and risk rooms, as well as a vulnerability list where appropriate.

This should include evacuation arrangements and risks following and identified from PCFRA's and PEEP's.

The current plans date from October 2007. Once PCFRAs have been carried out any relevant information/PEEPS should be held in the SIB.

May 2023 - A contractor has been engaged to update the fire plans in line with the latest guidance for SIB/ERP.

Location Complete building (Estates & Facilities, Princess Court, Coronation Street, Cambridge)

High Priority

— complete by 23 Mar 2021 to reduce the risk by 100% SC, RB

Assigned Users Alex Myhill Alex Myhill

Completed Alex Myhill @ 14 Feb 2024 11:50:58

✓ **Are there suitable arrangements for ensuring that the premises have been evacuated?** N/A

✓ **Is there a suitable fire assembly point(s)?** N/A

⊗ **Are there adequate procedures for evacuation of any disabled people who are likely to be present?** No

Procedures for people with restricted mobility (PRM) and/or who are vulnerable to be confirmed through person centered fire risk assessments.

Likelihood: Moderate **Consequence: High Harm** **3 x 2 = 6 | Substantial Risk**

— SC, RB @ 22 Jun 2023 13:54:35

✓ **Tasks** 1

□ PRM procedures

An action point from the recent specific fire risk assessment is to establish if there are residents who need assistance to evacuate their flat.

On completion of this survey PEEPs maybe required for individual residents with copies kept in the secure information box (SIB).

Location Complete building (Estates & Facilities, Princess Court, Coronation Street, Cambridge)

High Priority

— complete by 23 Mar 2021 to reduce the risk by 100% SC, RB

Assigned Users Fire Safety Compliance Fire Safety Compliance

✓ **Persons nominated and trained to use fire extinguishing appliances?** N/A

✓ **Persons nominated and trained to assist with evacuation, including evacuation of disabled people?** N/A

✓ **Appropriate liaison with fire and rescue service (e.g. by fire and rescue service crews visiting for familiarization visits)?** Yes

Should CFRS require site visits this can be facilitated.

Building plans have been supplied to CFRS in accordance with the FS(E) Regs 2022.

— SC @ 22 Jun 2023 13:54:27

✔ **Routine in-house inspections of fire precautions (e.g. in the course of health and safety inspections)?** Yes

The need to assess for potentially vulnerable residents who may have difficulty escaping independently has been highlighted following the fire in Kingsway.

A meeting to initiate a survey for PCFRA's has taken place. This was delayed by Covid. Letters sent out to residents resulted in no feedback regarding vulnerable residents, although there seems to be 'local' awareness of such persons, and this needs to be revisited through the residents groups.

There are tenant representatives who have good liaison with Council Officers to ensure resident engagement.

Temporary fire procedure arrangements (changes to the evacuation strategy) may be required to be put in place until upgrading of compartmentation and fire doors has been completed. In this interim period an early fire warning system extending beyond individual dwellings may also be installed as per Kingsway and subject to further surveys of the buildings' compartmentation/means of escape that require a permanent linked fire warning system.

With regard to any changes in fire procedure, notices located at the entrances to the block would need to be amended/changed and an assembly point should be considered to assist the fire service in establishing who is involved in any fire incident as per Kingsway flats.

To comply with The Fire Safety (England) Regulation 2022, and to tie in with concerns about fire safety risks with the building, residents should be updated with fire safety information. This should be carried out ASAP and not be further delayed by decisions re surveys. A second wave of information/fire safety instruction would follow as required.

🕒 Training and Drills

All Areas

2 / 1

✔ **Are all staff given adequate fire safety instruction and training on induction?** Yes

CCC Caretaker only. Residents are not required to undertake fire safety training (although CCC must provide relevant fire safety information/instruction).

— SC 22 Jun 2023 13:54:46

✔ **Are all staff given adequate periodic “refresher training” at suitable intervals?** Yes

As above.

— SC 22 Jun 2023 11:14:11

✔ **Does all staff training provide information and instruction on the following: fire risks and fire safety measures in the premises, action in the event of fire, action on hearing the fire alarm, method and operation of manual call points, location and use of fire extinguishers, means for summoning the fire and rescue service, the identity of persons nominated to assist with evacuation and the identity of persons nominated to use fire extinguishing appliances?** Yes

As above.

— SC 22 Jun 2023 11:14:11

✔ **Are staff with special responsibilities (e.g. fire wardens) given additional training?** N/A

✔ **Are fire drills carried out at appropriate intervals?** N/A

✔ **When the employees of another employer work in the premises: Is their employer given appropriate information (e.g. on fire risks and general fire precautions)?** N/A

✔ **Is it ensured that the employees in the above question are provided with adequate instructions and information?** N/A

Contractors are subject to the fire safety and health and safety policies of the Council.

The caretaker has received fire awareness training as a CCC employee.

🛠️ Testing and Maintenance

Complete building

1 / 1

✔ **Are the premises fire safety provisions adequately maintained?** Yes

With the exception of monthly emergency lighting/lifts - see below

— SC 22 Jun 2023 13:54:52

✓ **Weekly testing and periodic servicing of fire detection and alarm system?** N/A

✓ **Monthly and annual testing routines for emergency escape lighting?** Yes

Testing carried out by ATL - more failures as per 2022 FRA - fed back to TSG.

— SC 20 Jun 2023 08:21:07



IMG_2366

— SC 18 May 2023 11:27:47

✓ **Annual maintenance of fire extinguishing appliances?** N/A

If there is a CO2 fire extinguisher in the lift plant room it should be maintained.

— RB, SC 22 Jun 2023 13:54:58

✓ **Periodic inspection of external escape staircases and gangways?** Yes

This should be part of caretaker routines.

— SC 22 Jun 2023 13:55:00

✓ **Six-monthly inspection and annual testing of rising mains?** Yes

The DR installation was tested 01.06.2023.

A defective outlet valve (seized) was observed on one of the risers. This was approved for remedial action by CCC on 13.06.2023 (e mail from John Conroy 13.06.2023). This should be undertaken ASAP to ensure the DR system is available for FRS use in the event of a fire on the upper levels - the lack of availability of this facility may delay the fire service in search and rescue/fire fighting operations.

A copy of the report is located in the documents section.

— SC 22 Jun 2023 13:54:55

✓ **Weekly and monthly testing, six-monthly inspection and annual testing of fire-fighting lifts?** Yes

Contract arranged through TSG but no records available with regard to treating the lift as a fire-fighters lift. See action above.

— SC 22 Jun 2023 13:55:02

✓ **Weekly testing and periodic inspection of sprinkler installations and smoke control systems?** N/A

✗ **Routine checks of final exit doors and/or security fastenings?** No

Testing of push to exit; overrides (green boxes)

— SC 22 Jul 2024 08:56:41

✓ **Tasks** 1

✓ **Testing of push to exit over rides (green boxes)**

These are located in the refuse rooms and should be regularly tested. Monthly testing with the emergency lighting is suggested.

Location Bin rooms 1 and 2

Medium Priority

— complete by 16 Nov 2023 to reduce the risk by 100% SC

Assigned Users John Conroy

Completed John Conroy @ 22 Jul 2024 08:56:41

✓ **Annual inspection and test of lightning protection system?** Yes

Carried out by Rodells 27.05.2022.

TSG have stated that they haven't been allocated this for 2023 - this should be followed up.

— SC, RB 22 Jun 2023 13:55:08

✔ **Are suitable systems in place for reporting and subsequent restoration of safety measures that have fallen below standard** **Yes**

Arrangements are in put in place for all relevant tests for items in both the communal areas and individual dwellings by TSG.

Note. The door release buttons in the refuse rooms have manual over-rides (green boxes) - these should be subject to regular testing (suggest monthly with emergency lighting).

The lift (including the lift for Hanover Ct) has a firefighters switch to enable control of the lift. It is not clear if this is still effective. An assessment by lift engineers is recommended. Given the height of the building this facility would be of use to the fire service.

Records

Princess Court, Coronation Street, Cambridge

1 / 1

✔ **Appropriate records of: Fire drills?** **N/A**

✔ **Appropriate records of: Fire training?** **N/A**

✔ **Appropriate records of: Fire alarm tests?** **N/A**

✔ **Appropriate records of: Emergency escape lighting tests?** **Yes**

Records kept in (Hanover Ct) SIB.

Further records supplied by TSG.

— SC © 22 Jun 2023 13:56:09

✔ **Appropriate records of: Maintenance and testing of other fire protection systems?** **Yes**

Records available through TSG.

See recommendations above re lifts (fire fighters??) and fire extinguishers.

— SC © 22 Jun 2023 13:56:13

Records are kept centrally and electronically with some records on site in the PIB, although these are incomplete.

This building is encompassed within Cambridge City Council's Fire Safety Policy and Fire Risk Management Strategy. See 'Documents' for these.

There is liaison with the local fire protection officer (CFRS) and also with residents through leasehold representatives and CCC Estate Champions.

Legislative requirements and new technical guidance including flat entrance door inspections and external faces of the building have been considered in this assessment.

2023: As the building is going to be redeveloped with the occupancy reducing (and use of some units as temporary accommodation), fire safety management must not be reduced and should robustly remain in place.

The following are suggested interim actions/items to be explored by Cambridge City Council in mitigation for some of the unsatisfactory fire safety measures contained in this report. These are for consideration against the fire risk actions highlighted in the significant findings above where, due to the pending development, it may not be desirable to undertake full remedial works. The list is not exhaustive and combined is intended to reduce the risk to a more tolerable level for a short/medium period of time only. They are not intended as long term solutions.

1. Sample survey (Type 4) to establish condition of any fire compartmentation issues whereby fire and smoke may spread between flats via service risers. This will influence to what extent the other interim measures are suitable and acceptable.
2. Amend the fire evacuation strategy to one where there is evacuation should occupants become aware of a fire rather than stay put and wait until/if they become at risk. This is not a full evacuation strategy but one where there is less of a delay, i.e. once residents are aware of a fire they leave the building immediately. Occupants away from a fire and unaware of it may therefore stay in situ in their flats. Note. this has been implemented at Kingsway flats in Cambridge's as an interim fire safety measure.
3. Point 2 links with providing updated fire safety information to residents which is required to comply with new legislation that came into force in January 2023.

4. Ensure information about the building and residents is up to date and appropriate for the risk level of the building taking account of the fire safety measures (and lack of) assessed in this report. This should be contained in the SIB and also provided to CFRS as required (some building information has already been passed to them). There are fire plans in the SIB (at Hanover Court as the Princess Ct SIB is still not accessible - see action in main report) and these are currently in the process of being updated by a CCC (using a contractor).
5. Provide wayfinding signage throughout the common areas as per ADB.
6. Consider installing additional automatic fire detection in the remaining occupied flats to provide improved early warning.
7. The risk profile may change through the use of some flat units for temporary accommodation where the occupancy is transitional and there is less familiarity with the building's layout. Such occupants along with the existing residents may be vulnerable. Where appropriate person centred fire risk assessments (PCFRA) should be carried out. This has been explored previously by CCC by attempting to identify vulnerable residents (via tenant reps') but did not bring to light any significant issues. Where voids are being reused as temporary accommodation PCFRAs might be relevant and should be considered when people are allocated flat units.
8. Where voids are selected for temporary accommodation usage, ideally they should be the ones closest to the ground and nearest the escape staircases but not those flats located in the stair (at each end of the building). Note. Those in the best condition might pose a greater fire risk due to their location.
9. Flats located in the stair present a risk from fire (if the flat entrance door is non compliant) potentially affecting the whole of the stair above the fire floor. Consideration should be given to these flats being voided before others if at all possible to ensure the staircases are available for escape purposes.
10. It might be appropriate (based on a sample fire compartmentation survey) to install a building fire alert system (even though it is below 18m) that enables the FRS to evacuate the whole building. This should be carefully considered not least as the staircase widths are not designed to evacuate large numbers of persons.

➤ References

Guidance in Support of Fire Safety Legislation

England and Wales

HM Government Guides to Fire Safety Risk Assessment, DCLG:

- Offices and Shops.
- Factories and Warehouses.
- Sleeping Accommodation.
- Residential Care Premises.
- Educational Premises.
- Small and Medium Places of Assembly.
- Large Places of Assembly.
- Theatres, Cinemas and Similar Premises.
- Open Air Events and Venues.
- Healthcare Premises.
- Animal Premises and Stables.
- Transport Premises and Facilities.
- Means of Escape for Disabled People.

Scotland

Scottish Government: Practical Fire Safety Guidance:

- Existing Non-Residential Premises.
- Existing Premises with Sleeping Accommodation.
- Care Homes.
- Healthcare Premises.
- The Evacuation of Disabled Persons from Buildings.

Northern Ireland

DHSSPS Sector Specific Guidance Documents:

- Sleeping Accommodation.
- Offices and Shops.
- Healthcare Premises.
- Theatres, Cinemas and Similar Premises.
- Small and Medium Places of Assembly.
- Open Air Events.

England and Wales

- Approved Document B Vol 2, 2019 edition (as amended).

Scotland

- Technical Handbook 2019, Non-Domestic – Fire.

Northern Ireland

- Technical Booklet E 2012.

Fire Safety Design and Management

- BS 9991:2015. (Incorporating corrigendum No. 1.) Fire safety in the design, management and use of residential buildings. Code of practice.
- BS 9999:2017. Fire safety in the design, management and use of buildings. Code of practice.

Fire Detection and Fire Alarm Systems

- BS 5839-1:2017. Fire detection and fire alarm systems for buildings. Code of practice for design, installation, commissioning and maintenance of systems in non-domestic premises.
- BS 5839-6:2019. Fire detection and fire alarm systems for buildings - Code of practice for the design, installation, commissioning and maintenance of fire detection and fire alarm systems in domestic premises.
- BS 5839-8:2013. Fire detection and fire alarm systems for buildings - Code of practice for the design, installation, commissioning and maintenance of voice alarm systems.
- BS 5839-9:2011. Fire detection and fire alarm systems for buildings - Code of practice for the design, installation, commissioning and maintenance of emergency voice communication systems.

Fire Extinguishing Appliances

- BS 5306-1: 2006. Code of practice for fire extinguishing installations and equipment on premises - hose reels and foam inlets.
- BS 5306-3:2017. Fire extinguishing installations and equipment on premises. Commissioning and maintenance of portable fire extinguishers. Code of practice.
- BS 5306-8:2012. Fire extinguishing installations and equipment on premises - Selection and positioning of portable fire extinguishers - Code of practice.
- BS EN 3. Portable fire extinguishers.
- BS EN 671-3:2009. Fixed fire-fighting systems. Hose systems. Maintenance of hose reels with semi-rigid hose and hose systems with lay-flat hose.
- BS EN 1869:2019. Fire blankets.

Emergency Escape Lighting

- BS 5266-1:2016. Emergency lighting - Code of practice for the emergency lighting of premises.
- BS 5266-8:2004. (BS EN 50172: 2004). Emergency escape lighting systems.
- BS EN 1838:2013. Lighting applications – Emergency lighting.

Fire Safety Signs

- BS 5499-4:2013. Safety signs. Code of practice for escape route signing.
- BS ISO 3864-1:2011. Graphical symbols. Safety colours and safety signs. Design principles for safety signs and safety markings.
- BS EN ISO 7010:2020. Graphical symbols. Safety colours and safety signs. Registered safety signs.
- BS 5499-10:2014. Guidance for the selection and use of safety signs and fire safety notices.

Fixed Fire Extinguishing Systems and Equipment

- BS EN 12845:2015+A1 2019. Fixed fire-fighting systems. Automatic sprinkler systems. Design, installation and maintenance.
- BS 9990:2015. Non-automatic fire-fighting systems in buildings. Code of practice.

Lightning

- BS EN 62305-1:2011. Protection against lightning. General principles.
- BS EN 62305-2:2012. Protection against lightning. Risk management.

- BS EN 62305-3:2011. Protection against lightning. Physical damage to structures and life hazard.
- BS EN 62305-4:2011. Protection against lightning. Electrical and electronic systems within structures. Miscellaneous
- BS 7176:2007+A1: 2011. Specification for resistance to ignition of upholstered furniture for non-domestic seating by testing composites.
- BS 7273-4:2015. Code of practice for the operation of fire protection measures. Actuation of release mechanisms for doors.
- BS 7671:2018/A1:2020. Requirements for Electrical Installations. IET Wiring Regulations. Eighteenth Edition.
- BS 8899:2016. Improvement of fire-fighting and evacuation provisions in existing lifts.

Codes of practice

- PAS 79-1:2020. Fire risk assessment - Guidance and a recommended methodology.

Published Guidance on Control of Contractors

- Standard Fire Precautions for Contractors Engaged on Crown Works, Department of Environment, HMSO.
- Fire Prevention on Construction Sites. Fire Protection Association.
- Fire Safety in Construction. HSG168 (2nd edition) HSE.

PRIVATE & CONFIDENTIAL

REGULATORY REFORM (FIRE SAFETY) ORDER 2005

Fire Risk Assessment

COST CENTER: Estates & Facilities



CAMBRIDGE
CITY COUNCIL

Assessed Area: Hanover Court, Coronation Street, Cambridge

Responsible Person: Will Barfield

Manager: John Conroy

Risk Assessor: Steve Cotton

Date of Inspection: Jul 17, 2020

Recommended Review Date: Jul 17, 2021

Trivial Risk

Tolerable Risk

Moderate Risk

Substantial Risk

Intolerable Risk

Executive Summary

This assessment records the fire safety measures in place at the time the assessment was conducted, and lists significant findings and a recommended appropriate remedial action. It also provides guidance for the Responsible Person on how to maintain a satisfactory standard of fire precautions within the building concerned. The subject areas concerned are;

Responsible Person

The Responsible Person should ideally hold a senior or at least a responsible position within the company and have sufficient authority to allocate and mobilise finances and to control and organise members of staff.

Manager

In the context of this report the Manager is the person who will receive all the actions found during the assessment and will allocate them to the relevant people to get the risk removed or reduced to a manageable level.

Competent Persons

Competent Persons (Fire Wardens) are employees that have had additional instruction and training in fire safety, they are there to assist the responsible person in fulfilling their statutory duties.

Managing Fire Safety

Good management of fire safety is essential to ensure that fires are unlikely to occur; that if they do occur they are likely to be controlled quickly, effectively, and safely, and that everyone should be able to escape to a place of safety easily and quickly.

Record Keeping

In the event of a fire in the workplace you may need to provide evidence to the enforcing authorities when asked that you have complied with the fire regulations. It is helpful to keep a dedicated record of all maintenance of fireprotection equipment and staff training. In all cases the quality of records may be regarded as a good indicator to the enforcing authorities of the overall quality of the fire safety management structure.

Building Occupancy

Some buildings may have two or more main uses that are not ancillary to one another. For example offices over shops from which they are independent. In such cases, each of the uses should be considered as belonging to a purpose group in its own right. In other cases and particularly in some large buildings, there may be a complex mix of uses. In such cases it is necessary to consider the possible risk that one part of a complex may have on another and special measures to reduce the risk may be necessary.

Fire Alarm

All buildings or occupied areas should have arrangements for detecting fire, where a work place is equipped with fire detectors and alarms they should be in operational order whilst the premises are occupied and be maintained and tested to comply with the relevant code of practice.

Emergency Lighting

The primary purpose of emergency escape lighting is to illuminate escape routes, but it is also required to illuminate safety equipment such as firefighting equipment, fire alarm call points, and safety signage. The size and type of your premises will determine the complexity of the emergency escape lighting required. Where installed it should be in good working order and maintained to comply with the relevant code of practice.

Compartmentation/Fire-stopping

The spread of fire within a building or area can be restricted by sub-dividing it into compartments separated from one another by walls and/or floors of fire-resisting construction. The object is twofold:

- a) to prevent rapid fire spread which could trap occupants of the building; and
- b) to reduce the chance of fires becoming large, on the bases that large fires are more dangerous, not only to occupants and fire and rescue personnel, but also to people in the vicinity of the building.

Fire Fighting Equipment

You have a responsibility for the provision of appropriate fire-fighting equipment. It is also your responsibility to check that all fire-fighting equipment is in the correct position and in satisfactory order before the premises is used.

Means of Escape

A Route or routes provided to ensure safe egress from the premises or other locations to a place of safety. The general principle for means of escape is that any person confronted by an outbreak of fire within a building can turn away from it and make a safe escape initially to a place of relative safety, a protected stair, or corridor; which should lead to a place of ultimate safety which should be clear and free of the building.

Hazards: Arson/heating/smoking/cooking/electricity

The first step in the assessment is the identification of fire hazards. In determining these hazards, account should be taken of the three most common causes of fire, which together account for around two-thirds of all fires. These are arson, smokers' materials and electrical faults. Further consideration should be given to other recognised or common causes of fire, such as heating appliances, cooking and contractors' operations.

Fixed installations

These are fire-fighting systems which are sometimes installed within the structure of the building and could include hose-reels and sprinkler systems.

Contractors & industrial processes

Carelessness by outside contractors is a common cause of fire, including many fires that result in serious financial loss. Cutting, welding and use of blow torches are particular sources of ignition,

Not all of such works are caused by outside contractors. It has been estimated, however, that perhaps 20-25% of all non-domestic fires result from on-going work', such as refurbishment, repair and construction. The Building occupants/employees should be informed as to the significant findings of assessments. The following should be displayed for the benefit of all occupants and visitors.

- A copy of the building plan indicating the means of escape (where escape routes are complex and building occupants are not familiar with the building).

- Details of any significant findings
- Details of the Responsible Person

It is considered that the building occupants/users will include employees, contractors, visitors and emergency service personnel as well as any other person who may be in and around the premises.

Ownership of the Fire Risk Assessment

Regardless of whether the fire risk assessment is carried out by, for example, staff from an outside organisation, or a third party fire risk assessor, the ultimate responsibility for the adequacy of the risk assessment rests with the “responsible person” defined by legislation as responsible for ensuring that the fire risk assessment is carried out and that the fire precautions are adequate.

Introduction

For the Responsible Person at these premises, this document provides information regarding the standard of fire safety observed, and serves as a record as required by The Regulatory Reform (Fire Safety) Order 2005 and the

Management of Health and Safety at Work Regulations 1999.

The RRO places a requirement for all responsible persons to:

- Appoint one or more competent persons, depending on the size and use of the premises, to carry out any of the preventative and protective measures required by the Order.
- Provide your employees with clear and relevant information on the risks to them identified by the fire risk assessment, and about the measures you have taken to reduce the risks and prevent fire occurring.
- Consult your employees or their elected representatives about nominating people to carry out particular roles in connection with fire safety and improving the general fire precautions in the workplace.
- Before you employ a child, provide a parent or guardian with clear and relevant information regarding the risks to that child that have been identified in the fire risk assessment, and the measures you have or propose to put in place to safeguard that child.
- Inform non-employees, such as contractors and temporary workers of the risks to them, and provide them with information as to the nominated competent persons, and the general fire precautions provided in the workplace.
- Co-operate and co-ordinate with other building or site responsible persons regarding the findings of your risk assessment which may affect the safety of their employees.
- Provide the employer of any person from an outside organisation who may be working on your premises with relevant information as to the risks to them as outlined in your risk assessment, and the preventative and protective measures taken to secure their safety.
- If you are not the employer but have any control of premise which contain more than one workplace, you are responsible for ensuring that the requirements of the Order are complied with in those parts over which you have control.
- Consider the presence of any Hazardous or dangerous substances and the risk that they present to the occupants of the building, and undertake further assessment in the form of a Dangerous Substance Explosive Atmosphere Regulations assessment (DSEAR) assessment.
- Establish a suitable means of contacting the emergency services and providing them with relevant information regarding the storage or use of dangerous substances.
- Provide appropriate information, instruction and training to you employees, during normal working hours, about the fire precautions in your premises , when they first start working for you, (induction training) and from time to time during their employment (refresher training).
- Ensure that the premises are provided with appropriate fire-fighting equipment, fire detection and warning and emergency routes and exits, and that any equipment provide is maintained by competent persons and in efficient working order, good repair and fir for purpose.
- Your employees must co-operate with you to ensure that the premises are safe from fire and its effects, and must not do anything that will place themselves or other people at risk.

RISK PROFILE

To determine the appropriate means of escape and design features of the building, for life safety, a Risk Profile has been established following the methodology detailed in the current edition of 'BS9999: Code of practice for fire safety in the design, management and use of buildings'. This calculation is based on two main factors: occupancy characteristic and fire growth rate.

Once the risk profile has been determined, the minimum package of fire safety measures that should be provided, in accordance with BS9999, such as: travel distance, stair and exit widths and level of fire alarm and detection can be established.

Establishing the Risk Profile gives scope for a more interpretative approach, on a case by case basis, which takes into account the specific features of an individual building. This is especially significant when considering the issue of escape routes and fire exits in existing premises, particularly if they are of an historical or heritage nature.

Variation of the risk profile can be achieved by looking at existing and/or additional measures, which could be provided beyond what is determined as the minimum standard by BS9999. This allows for a more flexible approach to determine the fire safety measures that are required as an alternative to following other prescriptive guidance.

Risk Profile Matrix

Occupancy Characteristic	Fire Growth Rate			
	Slow	Medium	Fast	Ultra-Fast
Occupants awake & familiar with building	A1	A2	A3	Unacceptable without the addition of an effective localized suppression system or sprinklers
Occupants who are awake and unfamiliar with the building	B1	B2	B3	
Occupants who are likely to be asleep; long-term individual occupancy	Ci1	Ci2	Ci3	
Occupants who are likely to be asleep; long-term managed occupancy	Cii1	Cii2	Cii3	
Occupants who are likely to be asleep; short-term occupancy	Ciii1	Ciii2	Ciii3	
Other	Property is outside the scope of BS9999			

Your Risk Assessment Summary

Summary of Areas Requiring Attention

Risk Level Key: Trivial Risk Tolerable Risk Moderate Risk Substantial Risk Intolerable Risk

FIRE HAZARDS AND THEIR ELIMINATION OR CONTROL

Electrical Sources of Ignition

Housekeeping

Lightning

FIRE PROTECTION MEASURES

Fire Safety Signs and Notices

Means of Escape

Means of Giving Warning in Case of Fire

Measures to Limit Fire Spread and Development

MANAGEMENT OF FIRE SAFETY

Procedures and Arrangements

Testing and Maintenance

Greater detail on the areas requiring attention can be found in the relevant sections of this document.

Summary of Significant Findings and Action Plan

Section	Risk Grading	Significant Finding and Action Required	Photo Y N	Job No / Date work complete
Electrical Sources of Ignition	Tolerable Risk	Reasonable measures taken to prevent fires of electrical origin?: No ⚠ Complete building (Complete Building) Significant Finding Electrical intake cupboards Actions Required ⚠ Electrical intake cupboards not fire resisting <i>The electrical intake cupboards opposite ground floor flat entrance doors should be kept locked shut. Appropriate signage should be applied to the outer face of</i>	N	

		<p>the doors. (Although these cupboards are not in a fully enclosed escape route, a fire in them could affect the staircases above. Enclosure in fire resistance is recommended as part of future programmed improvements).</p> <p>— complete within 6 months to reduce the risk by 100%</p>		
Lightning	Tolerable Risk	<p>Do the premises have a lightning protection system and if so does it appear satisfactory?: No</p> <p>📍 Complete building (Complete Building)</p> <p>Significant Finding</p> <p>It is noted that the building has been fitted with lightning protection equipment; however, no evidence was observed allowing the assessor to verify that the system is subject to inspection and maintenance in accordance with BS EN 62305.</p> <p>Actions Required</p> <p>⊗ Lightning protection equipment-inspection and maintenance</p> <p>Verify that the lightning protection equipment is subject to inspection and maintenance in accordance with BS EN 62305.</p> <p>— complete within 3 months to reduce the risk by 100%</p>	N	
Housekeeping	Tolerable Risk	<p>Is the standard of housekeeping to the assessed area generally adequate?: No</p> <p>📍 Complete building (Complete Building)</p> <p>Significant Finding</p> <p>Housekeeping to the premises was poor in the following areas due to storage of bicycles/items outside flats causing an obstruction and trip hazard.</p> <p>Actions Required</p> <p>⊗ Housekeeping-improve</p> <p>Housekeeping to the premises should be improved by removal of items/bicycles that may obstruct escape routes. These are outside flats 5,7,30,31,37,67,71,77,78 and on the walkway. The picture outside flat 31 is not a particular fire hazard but should be discouraged so as not to set precedent for other residents.</p> <p>— complete within 3 months to reduce the risk by 100%</p>	Y	
Means of Escape	Substantial Risk	<p>Suitable protection of escape routes including provision of fire doors/hatches including to roof voids, individual dwellings/flats, compartment doors, riser cupboard doors and risk rooms?: No</p> <p>📍 Complete building (Complete Building)</p> <p>Significant Finding</p> <p>A recent survey of flat entry doors and the door furniture revealed that the doors are non fire rated doors. The majority of doors whether notional or non-fire rated are provided with a combination of letterboxes, spyglasses, and some are fitted with Georgian wired glazing but many areas were not fire rated glazing or could not be determined. An inspection of the storage cupboard doors revealed that the doors are non fire rated and the integrity of the door set and therefore the escape route may be compromised.</p> <p>Actions Required</p> <p>⊗ Tenanted Flat entry doors-non FR</p> <p>All CCC tenant doors in a recent survey have been identified as HIGH priority as they are non fire rated flat entry doors and need to be replaced with an FD30S standard door</p> <p>— complete within 9 months to reduce the risk by 33%</p> <p>⊗ Leaseholder Flat entry doors-non FR</p> <p>All leasehold doors in a recent survey have been identified as HIGH priority as they are non fire rated flat entry doors and need to be replaced with an FD30S standard door.</p> <p>— complete within 9 months to reduce the risk by 33%</p> <p>⊗ Storage cupboard door upgrade programme</p> <p>All store cupboard doors has on escape routes have been identified as a non fire rated door and needs to be included in the current storage cupboard door</p>	N	

		<p>upgrade programme (to FD30 standard). — complete within 12 months to reduce the risk by 34%</p>		
Means of Escape	Tolerable Risk	<p>Suitable protection of escape routes including provision of fire doors/hatches including to roof voids, individual dwellings/flats, compartment doors, riser cupboard doors and risk rooms?: No</p> <p>📍 Complete building (Complete Building)</p> <p>Significant Finding</p> <p>Ventilator breaching escape staircase.</p> <p>Actions Required</p> <p>✖ Ventilator breaching escape staircase.</p> <p><i>There is ventilator in the external wall outside flats: 17,35,42,48,50,65 & 66. Depending on its position inside the flat it may allow smoke to enter the stair in the event of a fire. It is noted that there is some ventilation to open air but this is not at the head of the stair and smoke logging may occur. It is recommended that this is investigated and if necessary the ventilation re routed or an appropriate fire rated block fitted.</i></p> <p>— complete within 9 months to reduce the risk by 100%</p>	Y	
Means of Escape	Tolerable Risk	<p>Suitable protection of escape routes including provision of fire doors/hatches including to roof voids, individual dwellings/flats, compartment doors, riser cupboard doors and risk rooms?: No</p> <p>📍 First floor (First Floor)</p> <p>Significant Finding</p> <p>Escape route fire protection</p> <p>Actions Required</p> <p>✖ Escape route separation - not FR</p> <p><i>The external wall to flat 18 on the first floor is constructed of glass blocks. This flat is at the base of the escape staircase and was the former caretakers flat. It is believed to be an original constructional feature. An inspection in 2019 was unable to confirm that it provides the required fire resistance (integrity/insulation/stability) to protect the escape route. Options should be considered to remedy this and might include: replacing the wall or, providing a protected inner hallway or, linking fire detection in flat 18 to the flats above on the escape staircase.</i></p> <p>— complete within 9 months to reduce the risk by 100%</p>	Y	
Measures to Limit Fire Spread and Development	Substantial Risk	<p>It is considered that there is: Compartmentation of a reasonable standard including external faces of buildings: No</p> <p>📍 Complete building (Complete Building)</p> <p>Significant Finding</p> <p>Compartmentation does not appear to be to the required fire resistance. Following fires in blocks of similar design breaches in the service riser became apparent. The design of the riser in this block is very similar and likely to present the same issues</p> <p>Actions Required</p> <p>✖ Compartmentation to provide 60 minutes fire resistance in blocks above of 6 storeys</p> <p><i>There is a requirement for compartmentation to provide 60 minutes fire resistance in blocks of 6 storeys and above.</i></p> <p>— complete within 12 months to reduce the risk by 50%</p> <p>✖ Structural investigation-breach of compartment wall/floor</p> <p><i>Further structural investigation is required to ascertain the consequence of the compartmentation breach, to establish if the following actions are required: • Type 2, 3 or 4 Fire Risk Assessment. • Change to the Fire Strategy of the building from “Stay Put” to Simultaneous Evacuation • Installation of Automatic Fire Detection System</i></p> <p>— complete within 3 months to reduce the risk by 50%</p>	N	
Measures to	Tolerable		Y	

Limit Fire Spread and Development	Risk	<p>It is considered that there is: Compartmentation of a reasonable standard including external faces of buildings: <i>No</i></p> <p>📍 Complete building (Complete Building)</p> <p>Significant Finding</p> <p>The materials on the external face of the building and/or the installation methods and materials could not be determined and appeared to be of sufficient amounts to be regarded as likely to contribute to external fire spread unless of a non combustible material and should be examined/tested and the installation confirmed. Balconies have been enclosed by residents. It is not known if these were authorised and compliant with building regulations.</p> <p>Actions Required</p> <p>⊗ External balconies-testing</p> <p><i>The materials on the external face of the building and/or the installation methods and materials could not be determined and appeared to be of sufficient amounts to be regarded as likely to contribute to external fire spread unless of a non combustible material and should be examined/tested and the installation confirmed. {Government cladding ban for combustible cladding on buildings limits materials to products achieving a European Classification of Class A1 or A2-s1,d0 when tested in accordance with BS EN 13501-1 :2007+A1:2009. This also includes balconies attached to external walls as regarded by building regulations as specified attachments and above 18m are subject to the same requirements and must achieve the same European Classification. Below this height the 'specified attachment' should be risk assessed and appropriate measures implemented.}</i></p> <p>— complete within 12 months to reduce the risk by 50%</p> <p>⊗ Resident use of balconies</p> <p><i>It was not possible for the assessor to externally check by observation the use of all the resident balcony spaces given the height of the building. In discussing this with the caretaker there are some balconies of concern (flats 15 and 20) that may present additional fire hazards. With the support of the housing management team these should be investigated and information provided to residents more generally about the usage of balconies.</i></p> <p>— complete within 6 months to reduce the risk by 50%</p>		
Fire Safety Signs and Notices	Trivial Risk	<p>Reasonable standard of fire safety signs and notices?: <i>No</i></p> <p>📍 Complete building (Complete Building)</p> <p>Significant Finding</p> <p>There was no signage indicating the use of lifts</p> <p>Actions Required</p> <p>⊗ Lift Signage-do not use</p> <p><i>Signage indicating the use of lifts should be provided. Where lifts are not to be used in the event of fire provide 'in the event of fire do not use lift' signage at each floor level and in accordance with current standards</i></p> <p>— complete within 3 months to reduce the risk by 100%</p>	Y	
Fire Safety Signs and Notices	Tolerable Risk	<p>Reasonable standard of fire safety signs and notices?: <i>No</i></p> <p>📍 Complete building (Complete Building)</p> <p>Significant Finding</p> <p>General signage review</p> <p>Actions Required</p> <p>⊗ General fire exit signage review</p> <p><i>The fire exit signage appears to be adequate. Some improved signage including pictogram style, locating specific levels and flats is to be reviewed in light of the changes to ADB (Grenfell Inquiry) through liaison with Cambridgeshire Fire & Rescue Service and residents. This review could incorporate improvements to the exit signage. For example, signage to avoid confusion regarding staircases off the 3rd/6th floor walkways which are non escape stairs is recommended (as at Kingsway flats). Fire procedure notices detailing the stay put policy are located at the entrances to the block at ground floor level and on entrances to the walkways at 3rd and 6th floors.</i></p> <p>— complete within 6 months to reduce the risk by 100%</p>	N	

Means of Giving Warning in Case of Fire	Substantial Risk	<p>Extent of automatic fire detection generally appropriate for the occupancy and fire risk?: <i>No</i></p> <p>📍 Complete building (Complete Building)</p> <p>Significant Finding</p> <p>The premises should be provided with an appropriate fire warning system to a correct grade and with a correct detection level according to the occupancy, design and use of the building</p> <p>Actions Required</p> <p>⊗ Fire warning system-correct grade/detection</p> <p><i>In light of recent findings concerning compartmentation (service risers) and flat entrance doors, subject to further investigations/survey, the premises should be provided with an appropriate fire warning system to provide early warning to residents of a fire in other parts of the building which could facilitate full evacuation of a specific area of the block.</i></p> <p>— complete within 6 months to reduce the risk by 100%</p>	N	
Procedures and Arrangements	Substantial Risk	<p>Are there adequate procedures for evacuation of any disabled people who are likely to be present?: <i>No</i></p> <p>📍 Complete building (Complete Building)</p> <p>Significant Finding</p> <p>Procedures for people with restricted mobility (PRM) and/or who are vulnerable to be confirmed through person centred fire risk assessments (PCFRA).</p> <p>Actions Required</p> <p>⊗ PRM procedures</p> <p><i>An action point from the recent specific fire risk assessment (SFRA) is to establish if there are residents who need assistance to evacuate their flat given the suspension of the stay put policy established through PCFRAs. On completion of this survey PEEPs maybe required for individual residents with copies kept in the premises information box (PIB).</i></p> <p>— complete within 6 months to reduce the risk by 100%</p>	N	
Procedures and Arrangements	Moderate Risk	<p>Are there suitable arrangements to meet the fire and rescue service on arrival and provide relevant information, including that relating to hazards to fire-fighters?: <i>No</i></p> <p>📍 Complete building (Complete Building)</p> <p>Significant Finding</p> <p>Information available for firefighters on arrival at the premises requires updating.</p> <p>Actions Required</p> <p>⊗ Information to firefighters (PIB)</p> <p><i>Ensure any premises information box (PIB) contains all information relevant to the emergency services. In particular in the case of the fire service, provide keys to the fire warning panel/s, relevant site and floor plans annotated with, or; separate details of hazards and risk rooms, as well as a vulnerability list where appropriate. This should include evacuation arrangements and risks following and identified from PCFRA's and PEEP's. The current plans date from October 2007. Once PCFRA's have been carried out any relevant information/PEEPS should be held in the PIB. Following further liaison with CFRS additional plans/information relating to the layout/numbering of Kingsway flats might be required to be held in the PIB.</i></p> <p>— complete within 6 months to reduce the risk by 100%</p>	N	
Testing and Maintenance	Tolerable Risk	<p>Monthly and annual testing routines for emergency escape lighting?: <i>No</i></p> <p>📍 Complete building (Complete Building)</p> <p>Significant Finding</p> <p>The emergency lighting installation and equipment could not be confirmed as periodically inspected, tested and maintained</p> <p>Actions Required</p> <p>⊗ Emergency Lighting Monthly Testing</p> <p><i>Ensure monthly function testing of all emergency lighting luminaires is</i></p>	N	

		<p><i>undertaken. This is to establish the switching from normal to standby supply is working correctly. Ensure a suitable system of defect reporting and repairs is in place and repairs/replacements are made in a timely fashion.</i></p> <p><i>— complete within 3 months to reduce the risk by 100%</i></p>		
Testing and Maintenance	Tolerable Risk	<p>Annual maintenance of fire extinguishing appliances?: No</p> <p>📍 Complete building (Complete Building)</p> <p>Significant Finding</p> <p>Portable fire fighting equipment in Caretakers office was not maintained in accordance with the current relevant standard and subject to an annual inspection by a qualified competent engineer.</p> <p>Actions Required</p> <p>⊗ Portable fire extinguishers-annual maintenance</p> <p><i>Portable fire fighting equipment should be maintained in accordance with the current relevant standard and subject to an annual inspection by a qualified competent engineer.</i></p> <p><i>— complete within 3 months to reduce the risk by 100%</i></p>	N	
Testing and Maintenance	Tolerable Risk	<p>Weekly and monthly testing, six-monthly inspection and annual testing of fire-fighting lifts?: No</p> <p>📍 Complete building (Complete Building)</p> <p>Significant Finding</p> <p>Firefighting lifts were not maintained and tested at prescribed intervals in accordance with current standards or records were not available to verify testing.</p> <p>Actions Required</p> <p>⊗ Firefighting/evacuation lifts-maintained and tested</p> <p><i>Where fitted ensure firefighting/evacuation lifts are maintained and tested at prescribed intervals in accordance with current standards with appropriate records being kept</i></p> <p><i>— complete within 3 months to reduce the risk by 100%</i></p>	N	
Testing and Maintenance	Trivial Risk	<p>Routine checks of final exit doors and/or security fastenings?: No</p> <p>📍 Complete building (Complete Building)</p> <p>Significant Finding</p> <p>Testing of 'push to exit' over rides (green boxes)</p> <p>Actions Required</p> <p>⊗ Testing of 'push to exit' over rides (green boxes)</p> <p><i>These are located in the refuse rooms and should be regularly tested. Monthly testing with the emergency lighting is suggested.</i></p> <p><i>— complete within 6 months to reduce the risk by 100%</i></p>	N	

⚠ Assessment Details

URN 1367

Overall Building Risk Rating **Substantial Risk**

Assessed building OR area name OR No Estates & Facilities > Hanover Court, Coronation Street, Cambridge

Risk Assessor Steve Cotton
✉ icenifiresafety@btinternet.com

Date of Assessment Jul 17, 2020

Validated By Renier Barnard

Date of Validation Sep 23, 2020

🏠 Client Details

Name Cambridge City Council

Address 1 The Guildhall

Town Cambridge

Post Code

🏠 Premises Description

Number of Floors Ground + seven floors

Approximate floor area NA

Building Construction Constructed approx 1968 - concrete block and beam + brick. Flat asphalt roof. There is no external cladding only brick walls. The building would have been built to design codes at that time. It is not thought that there have been any significant upgrades from a fire safety perspective other than to fit a smoke alarm in each flat. See comment below re flat entrance doors.

Building description: There are 78 one/two bedroom flats which form separate fire compartments with service risers running the full height of the building believed to contain bathroom ventilation, SVP's, electrics, water and gas pipework. There is access to these at ground floor level opposite flat entrances and possibly from other locations in the block. From the recent fires in this and other similar blocks of flats (Kingsway) it is not thought these are adequately fire separated from the flats themselves (see sections below). Flats have recessed balconies constructed of non combustible materials. Flat entrance doors are not the original installations and have also been replaced by leaseholders. From a sample survey in 2019 none of the doors in Hanover Court are FD30S units.

There is a full length walkway at 3rd and 6th floor levels with a full height staircase at each end of the block with 60m between staircases. There are three sets of short staircases off each walkway.

Ground floor flats have access to the front and rear of the block. First floor flats are accessed (in pairs) by individual external single storey staircases at the rear of the building. 2nd and 4th floor flats are accessed off the 3rd floor walkway. 5th and 7th floor flats are accessed off the 6th floor walkway - this arrangement means a pair of flats can be reached by going either down a level or up a level from the same entry point off the walkway. There is an escape staircase at each end of the block providing alternative means of escape for most but not all flats. There is also a pair of flats at each level off these staircases.

The walkway is undivided and quite deep (at least 3m) with no dedicated down stands to channel smoke away. The walkway is open on one side but also partially enclosed by storage cupboards. There is a passenger lift at the north end of the block - it is not an emergency evacuation lift but has controls for fire fighters to use it in the event of a fire.

There is a refuse chute at each end of the 3rd and 6th floor off the walkways; off the south staircase with its own access landing setting this facility back and away from the block. The other chute is at the north end of the walkway near the lift. Both chutes are contained in a full height shaft with bins at the base in a secure storage area. Resident storage cupboards are locked in the escape routes on each walkway and on most landings. There could also be riser cupboards on the walkways but the assessor was unable to confirm this.

Hanover Court runs parallel with neighbouring block, Princess Court. There is a green space in between along with a community room (separate FRA). A small caretakers office is located on the ground floor with a storage area at the rear. There is good access to the block for the fire service - a high reach appliance could be used on some areas of the block but not all.

Main use of Building General needs block of flats.

Disabled / vulnerable persons	Potentially some residents will be disabled/vulnerable.
Other persons at risk	The residents living in the block. A caretaker is employed to be on site Monday to Friday. There are visitors to the block and other persons who need to access it for various purposes.
Fire loss experience	There have been flat fires in these blocks over the years with some smaller arson fires.
Other relevant information	There are 78 1/2 bedroom flats in the block. Most are Council tenants but a number of flats have been purchased and are leasehold residents.
Fire Service station serving site / estimated travel time	Approx 5mins from Parkside (24hr crewed station) or approx 12-15mins from the training facility at Milton. High rise PDA for 5 floors and above is mobilised to this block.
Additional sources of oxygen or flammable gases stored on site	None
Relevant Fire Safety Legislation	Fire Safety Order 2005 - Communal Areas. Housing Act 2004 for flats and internal areas.
Legislation Enforced by	Cambridgeshire Fire & Service Service and Environmental Health (CCC)
Enforcement Notice issued by Fire Authority	NA

Assessment Details

Assessor	Stephen Cotton MIFireE
Date of Assessment	17.07.2020
Date of previous assessment	03.07.2019
Date for review	17.07.2021
Management area of responsibility	Estates & Facilities
Survey type	Type 1 - PAS 79. New initial
"The Risk Profile" for this building has been calculated as	Private storage areas. Roof/plant not accessed or individual dwellings. Riser cupboards. The exact layouts of the flats are not known and may vary in their design.
Areas not accessible during visit	<p>A specific fire risk assessment (SFRA) was carried out in May- June 2020 following at Kingsway flats. The SFRA included Hanover Court as the design is very similar and the same issues have been highlighted in previous FRA's and by other fires. The assessment focused on flat entrance doors and service risers. This assessment is referred to in other the sections of this report. A copy of the SFRA can be found in 'Evidence'.</p> <p>There are garages at the end of the block - these are separate and do not form part of this assessment.</p> <p>There is a Fire Risk Management Group within Cambridge City Council to ensure delivery of its Fire Safety Policy and Fire Risk Management Strategy. Fire risk assessments are part of the strategy to achieve compliance with the FSO.</p> <p>In carrying out this assessment relevant guidance has been considered including 'Fire safety in purpose built blocks of flats' and current updates from MHCLG.</p>
Other relevant information	-

Fire Prevention Strategy

Fire Evacuation Strategy	At time of assessment there is a stay put policy. However, further investigations regarding the service risers and installation of FD30S flat entrance doors will be undertaken following the Kingsway fire and the SFRA mentioned above. This may result in changes to the evacuation strategy and an interim early warning system (most likely linked fire detection between flats off a common riser and/or staircase) might be installed.
AFD ; Warning System	There is currently no fire alarm or detection in the communal areas. It is believed flats are fitted with a smoke alarm in the hallway (LD3). A heat detector will be installed in the kitchen areas through 2020-21- if these are open plan areas then this will achieve LD2 coverage.
Escape Routes	<p>Escape from ground floor flats is either from their front or rear access doors.</p> <p>Means of escape from 1st floor flats is via a short open air landing and the external staircases.</p> <p>Escape for 2nd, 3rd, 4th, 5th, 6th and 7th floors is via the walkways at 3rd and 6th floor levels. There is a full height staircase at both ends of the block providing alternative escape routes once the walkways are reached. There is a travel distance of 60m between the main escape staircases. The</p>

exception is for the pairs of flats located off the main escape staircases where this provides single direction directly down the staircase (in theory occupants could travel upwards to access the walkway and the alternative staircase but this is not ideal if there was smoke in the staircase area). This is an option for 4th and 7th floor occupants when descending their staircase, i.e. to go to the other staircase once a walkway is reached. There is also an initial dead end for flats at the end of each walkway but it is only 3m to the escape staircase and a well ventilated space so acceptable.

The main escape staircases are mostly open with no glazing but also no separation at 3rd and 6th floors (walkway level). At the upper most level (7th floor) there is no vent at ceiling/roof level (although there is a skylight that potentially could be upgraded).

The depth of the walkway which is quite deep (3m + with no down stands) and, along with partial enclosure, may result in (lateral) smoke logging of the escape route. This may occur by either fire emerging from windows below the walkway or from a flat entrance way if the door is not closed. The windows below the walkways are believed to be bedrooms so likely less a risk than the kitchen/living room spaces that open onto the balconies. This also means the higher fire risk rooms are on the opposite face of the building to the escape routes and may have been an intentional part of the design when built.

The walkway provides alternative means of escape but is not a fully 'open balcony' approach and protection of the route is not currently afforded by fire resistant flat entrance doors and storage cupboards.

The layout of the staircases to the upper floors and off the walkways mean they are in a vertical channel running the full height of the building which also encourages any smoke and heat to travel upwards affecting the escape route. In mitigation there are no windows opening onto any of the staircases and the flat entrance doors are being replaced with FD30S units through 2020-21.

Escape routes are generally sterile with non combustibile linings (Believed to be Class O/B-s3,d2).

It will be important to maintain the fire doors in good condition and to ensure the self closing devices are not disconnected by residents. This will be vital to protecting the escape routes and provide occupants the opportunity to escape should they choose to or if they are at risk and need to leave their flat. Changes to fire safety legislation will incorporate recommendations from MHCLG (Grenfell recommendations/Hackitt review) requiring these doors to be regularly inspected by the responsible person.

There are no final exit doors at ground level just openings to the stairways.

Emergency Escape Lighting	Emergency lighting is installed throughout the communal areas and appears to be in accordance with BS 5266.
Fire Exit Directional Signage	Directional fire exit signage is provided from the 3rd floor and 6th floor walkways with some additional directional signs on the stairs but not at all levels. This is illuminated by the accommodation lighting. Signage is to be reviewed along with flat numbering in light of the Grenfell Inquiry recommendations and changes to ADB.
Fire Lobbies	There are no fire lobbies
Smoke ventilation AOV	There is no AOV
Dry Riser	Dry riser outlets are installed on the 3rd & 6th floor walkways near the lift and on the refuse chute landing with the inlets at ground level directly below. The hydrants to supply the risers are located in Union Road and Coronation Street. A fire appliance can get within 18-25m of the DR inlet.
Type; Number of Fire Extinguishers	Fire extinguishers are not provided in the communal areas.

⊕ Scope of Assessment

-

🏠 Contact Details

Identity of Client

-

Any persons with responsibility for fire safety within the premises (refer to artificial 5 of RRF50)

-

Telephone number

-

➤ Evidence

The Evidence table below shows the documents associated with the Unit that this assessment belongs to. Showing the version and expiry date.

Total **2** items.

Category	Document	Contractor	Expiry Date	Version
FRA Addendum	FRA Supporting Document	Steve Cotton	-	1
Strategy / Policy	Fire Strategy Document	Steve Cotton	-	1

Your Risk Assessment Grading

The following risk level estimator is based on a general health and safety risk level estimator as detailed in BS 8800:

Risk Matrix		LIKELIHOODS			
		Low 1	Moderate 2	Extreme 3	
CONSEQUENCES	High Harm 3	Moderate Risk 3	<input checked="" type="checkbox"/> Substantial Risk 6	Intolerable Risk 9	
	Medium Harm 2	Tolerable Risk 2	Moderate Risk 4	Substantial Risk 6	
	Low Harm 1	Trivial Risk 1	Tolerable Risk 2	Moderate Risk 3	

Taking into account the pas 79 fire prevention measures observed at the time of this risk assessment, it is considered that the hazard from pas 79 fire (likelihood of pas 79 fire) at these premises is:

None Low Moderate Extreme

In this context, a definition of the above terms is as follows:

Low: Outbreak of fire unlikely to result in serious injury or death of any occupant (other than an occupant sleeping in a room in which a fire occurs).

Moderate: Outbreak of fire could foreseeably result in injury (including serious injury) of one or more occupants, but it is unlikely to involve multiple fatalities.

Extreme: Significant potential for serious injury or death of one or more occupants.

Taking into account the nature of the building and the occupants, as well as the pas 79 fire protection and procedural arrangements observed at the time of this pas 79 fire risk assessment, it is considered that the consequences for life safety in the event of pas 79 fire would be:

None High Harm Medium Harm Low Harm

In this context, a definition of the above terms is as follows:

High Harm: Lack of adequate controls applied to one or more significant fire hazards, such as to result in significant increase in likelihood of fire.

Medium Harm: Normal fire hazards (e.g. potential ignition sources) for this type of occupancy, with fire hazards generally subject to appropriate controls (other than minor shortcomings).

Low Harm: Unusually low likelihood of fire as a result of negligible potential sources of ignition.

Accordingly, it is considered that the risk to life from pas 79 fire at these premises is:

None Trivial Risk Tolerable Risk Moderate Risk Substantial Risk Intolerable Risk

A suitable risk-based control plan should involve effort and urgency that is proportional to risk:

Risk level	Action and timescale
Trivial Risk	No action is required and no detailed records need be kept.
Tolerable Risk	No major additional fire precautions required. However, there might be a need for reasonably practicable improvements that involve minor or limited cost.
Moderate Risk	It is essential that efforts are made to reduce the risk. Risk reduction measures, which should take cost into account, should be implemented within a defined time period. Where moderate risk is associated with consequences that constitute extreme harm, further assessment might be required to establish more precisely the likelihood of harm as a basis for determining the priority for improved control measures.
Substantial Risk	Considerable resources might have to be allocated to reduce the risk. If the premises are unoccupied, it should not be occupied until the risk has been reduced. If the premises are occupied, urgent action should be taken.
Intolerable Risk	Premises (or relevant area) should not be occupied until the risk is reduced.

Assessment Report

FIRE HAZARDS AND THEIR ELIMINATION OR CONTROL

🔌 Electrical Sources of Ignition

Complete building (Complete Building) **2 x 1 = 2 | Tolerable Risk**

1 / 1

❌ Reasonable measures taken to prevent fires of electrical origin? **No**

👁 Finding

👤 SC ⌚ Aug 16, 2020, 12:45:24 PM

Electrical intake cupboards

Likelihood: Low **Consequence: Medium Harm**

✅ Tasks **1**

Electrical intake cupboards not fire resisting

The electrical intake cupboards opposite ground floor flat entrance doors should be kept locked shut. Appropriate signage should be applied to the outer face of the doors.

(Although these cupboards are not in a fully enclosed escape route, a fire in them could affect the staircases above.

Enclosure in fire resistance is recommended as part of future programmed improvements).

Location Complete building (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

Low Priority — complete within 6 months to reduce the risk by 100% 👤 SC

Assigned Users 👤 John Conroy

- ✅ Fixed installation periodically inspected and tested? **Yes**
- ✅ Portable appliance testing (where appropriate) carried out? **N/A**
- ✅ Suitable policy regarding the use of personal electrical appliances? **N/A**
- ✅ Suitable limitation of trailing leads and adapters? **N/A**

Fixed wire test: August 2019

🚭 Smoking

Complete building (Complete Building)

1 / 1

- ✅ Reasonable measures taken to prevent fires as a result of smoking? **Yes**
- ✅ Smoking prohibited on the premises? **Yes**
- ✅ Smoking prohibited in appropriate areas? **N/A**
- ✅ Suitable arrangements for those who wish to smoke? **N/A**
- ✅ This policy appeared to be observed at time of inspection? **Yes**

'No smoking' signs are located at the main entrances to the building and at access points to the first floor landings. They are also displayed on the walkways at 3rd and 6th floors.

🔥 Arson

Complete building (Complete Building)

1 / 1

- ✅ Does basic security against arson by outsiders appear reasonable? **Yes**
- ✅ Is there an absence of unnecessary fire load in close proximity to the premises or available for ignition by outsiders? **Yes**

There is open access to these flats, although the refuse/bin rooms are limited in their availability to residents and locked at other times.

Storage cupboards were secure and fully enclosed (unlike at Kingsway).

Some stored items on a few landings could be a source of combustibles but this is generally low risk.

Anecdotally arson is not a significant issue.

🔥 Portable Heaters and Heating Installations

Complete building (Complete Building)

1 / 1

- ✔ Is the use of portable heaters avoided as far as practicable? N/A
- ✔ If portable heaters are used: Is the use of the more hazardous type (e.g. radiant bar fires or lpg appliances) avoided? N/A
- ✔ If portable heaters are used: Are suitable measures taken to minimize the hazard of ignition of combustible materials? N/A
- ✔ Are fixed heating installations subject to regular maintenance? N/A

There is no heating in the communal areas

🔥 Cooking

Complete building (Complete Building)

1 / 1

- ✔ Are reasonable measures taken to prevent fires as a result of cooking? N/A
- ✔ More specifically: Filters changed and ductwork cleaned regularly? NA
- ✔ More specifically: Suitable extinguishing appliances available? N/A

There are no cooking facilities in the communal areas.

⚡ Lightning

Complete building (Complete Building) 2 x 1 = 2 | Tolerable Risk

1 / 1

- ✘ Do the premises have a lightning protection system and if so does it appear satisfactory? No

👁 Finding

👤 SC ⌚ Jul 23, 2020, 8:11:59 PM

It is noted that the building has been fitted with lightning protection equipment; however, no evidence was observed allowing the assessor to verify that the system is subject to inspection and maintenance in accordance with BS EN 62305.

Likelihood: Low Consequence: Medium Harm

✔ Tasks 1

- Lightning protection equipment-inspection and maintenance

Verify that the lightning protection equipment is subject to inspection and maintenance in accordance with BS EN 62305.

Location Complete building (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

Medium Priority — complete within 3 months to reduce the risk by 100% 👤 SC

Assigned Users 👤 John Conroy

Lightning equipment tested: 21.06.2019

Test overdue.

🧹 Housekeeping

Complete building (Complete Building) 2 x 1 = 2 | Tolerable Risk

1 / 1

- ✘ Is the standard of housekeeping to the assessed area generally adequate? No

👁 Finding

👤 SC ⌚ Jul 26, 2020, 12:40:31 PM

Housekeeping to the premises was poor in the following areas due to storage of bicycles/items outside flats causing an obstruction and trip hazard.

Likelihood: Low Consequence: Medium Harm

✔ Tasks 1


- Housekeeping-improve

Housekeeping to the premises should be improved by removal of items/bicycles that may obstruct escape routes.

These are outside flats 5,7,30,31,37,67,71,77,78 and on the walkway.

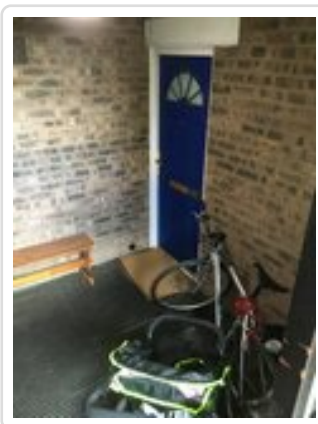
The picture outside flat 31 is not a particular fire hazard but should be discouraged so as not to set precedent for other residents.

Location Complete building (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

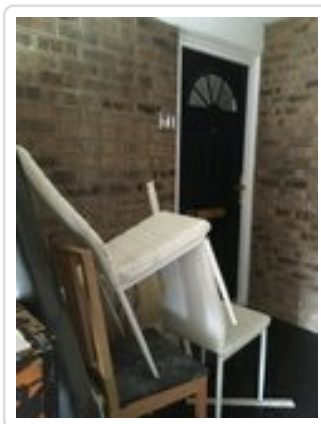
Medium Priority — complete within 3 months to reduce the risk by 100%  SC

Assigned Users  John Conroy

Images 9



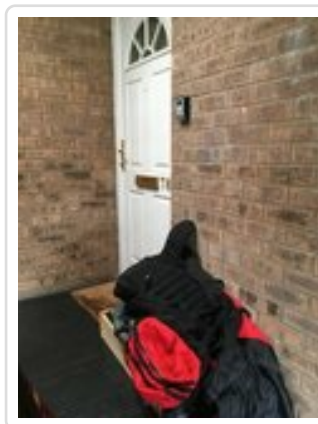
IMG_6426
— Jul 23, 2020, 8:30:40 PM



IMG_6428
— Jul 23, 2020, 8:30:40 PM



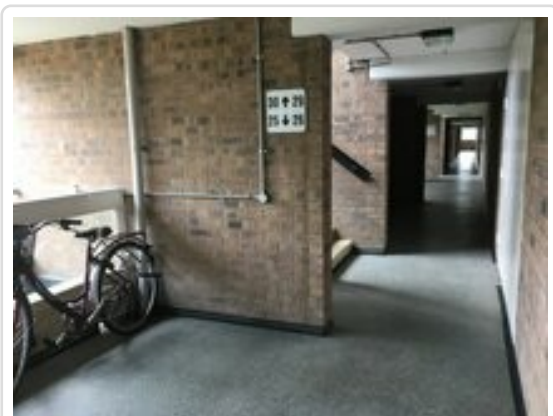
IMG_6435
— Jul 23, 2020, 8:30:40 PM



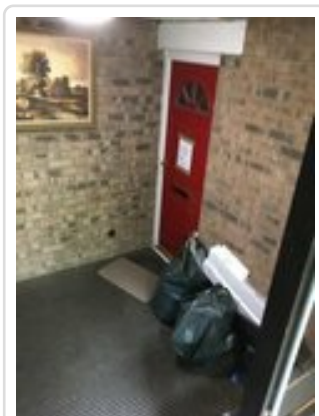
IMG_6436
— Jul 23, 2020, 8:30:40 PM



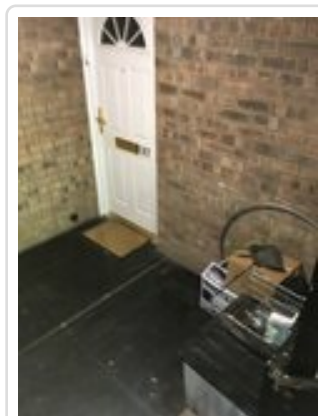
IMG_6440
— Jul 23, 2020, 8:30:39 PM



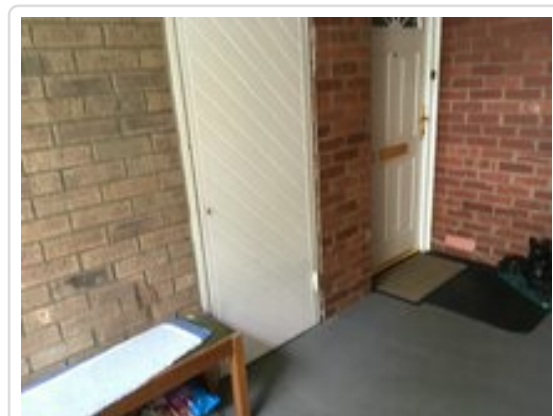
IMG_6439
— Jul 23, 2020, 8:30:39 PM



IMG_6443
— Jul 23, 2020, 8:30:39 PM



IMG_6447
— Jul 23, 2020, 8:30:39 PM



IMG_6471
— Jul 23, 2020, 8:30:39 PM

- ✔ **More specifically do combustible materials appear to be separated from ignition sources?** Yes
- ✔ **More specifically is there an avoidance of an unnecessary accumulation of combustible materials or waste?** Yes
- ✔ **More specifically is there appropriate storage of hazardous materials?** Yes
- ✔ **More specifically is there an avoidance of inappropriate storage of combustible materials?** Yes

As can be seen from the attached images there are either bikes or items of storage outside some flat entrance doors. Application of the Council's zero tolerance policy as per other flats is recommended although acknowledged as difficult to implement in some instances.

Hazards Introduced By Outside Contractors and Building Works

Complete building (Complete Building)

1 / 1

- ✔ **Are fire safety conditions imposed on outside contractors?** Yes
- ✔ **Is there satisfactory control over works carried out on the premises by outside contractors (including “hot work” permits)?** Yes
- ✔ **If there are in-house maintenance personnel, are suitable precautions taken during “hot work”, including use of “hot work” permits?** Yes

Contractors are subject to CCC's Fire Safety Policy.

Dangerous Substances

Complete building (Complete Building)

1 / 1

- ✔ **Are the general fire precautions adequate to address the hazards associated with dangerous substances used or stored within the premises?** N/A
- ✔ **If the above applies, has a specific risk assessment been carried out, as required by the Dangerous Substances and Explosive Atmospheres Regulations 2002?** N/A

There were no dangerous substances present on site.

The building has Estate Safety checks in place (by Caretaker) which includes the reduction and elimination of fire hazards.

Generally housekeeping is very good with bicycles being the main issue on escape routes/outside flat entrance ways and some instances of minor storage.

Re bicycles - Where there is plenty of space such as on walkways and underneath staircases this is not so much a concern compared to the small stairways off the main walkway that need to be monitored and managed in accordance with the Council's zero tolerance policy

FIRE PROTECTION MEASURES

✘ **Suitable protection of escape routes including provision of fire doors/hatches including to roof voids, individual dwellings/flats, compartment doors, riser cupboard doors and risk rooms?** **No**

👁 Finding

👤 SC ⌚ Aug 12, 2020, 7:52:26 AM

A recent survey of flat entry doors and the door furniture revealed that the doors are non fire rated doors. The majority of doors whether notional or non-fire rated are provided with a combination of letterboxes, spyglasses, and some are fitted with Georgian wired glazing but many areas were not fire rated glazing or could not be determined. An inspection of the storage cupboard doors revealed that the doors are non fire rated and the integrity of the door set and therefore the escape route may be compromised.

Likelihood: Moderate **Consequence: High Harm**

✅ Tasks **3**

Tenanted Flat entry doors-non FR

All CCC tenant doors in a recent survey have been identified as HIGH priority as they are non fire rated flat entry doors and need to be replaced with an FD30S standard door

Location Complete building (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

High Priority — complete within 9 months to reduce the risk by 33% 👤 SC

Assigned Users 👤 John Conroy

Leaseholder Flat entry doors-non FR

All leasehold doors in a recent survey have been identified as HIGH priority as they are non fire rated flat entry doors and need to be replaced with an FD30S standard door.

Location Complete building (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

High Priority — complete within 9 months to reduce the risk by 33% 👤 SC

Assigned Users 👤 John Conroy

Storage cupboard door upgrade programme

All store cupboard doors has on escape routes have been identified as a non fire rated door and needs to be included in the current storage cupboard door upgrade programme (to FD30 standard).

Location Complete building (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

Medium Priority — complete within 12 months to reduce the risk by 34% 👤 SC

Assigned Users 👤 John Conroy

✔ **Suitable fire precautions for all inner rooms?** **N/A**

✔ **Escape routes unobstructed?** **Yes**

✔ **Is it considered that the premises are provided with reasonable means of escape in case of fire?** **Yes**

✔ **Adequate design of escape routes?** **Yes**

✔ **Adequate provision of exits?** **Yes**

✔ **Exits easily and immediately openable where necessary?** **Yes**

✔ **Fire exits open in direction of escape where necessary?** **N/A**

✔ **Avoidance of sliding or revolving doors as fire exits where necessary?** **N/A**

✔ **Satisfactory means for securing exits?** **Yes**

✔ **Reasonable distances of travel: Where there is a single direction of travel?** **Yes**

✔ **Reasonable distances of travel: Where there are alternative means of escape?** **Yes**

✔ **It is considered that the premises are provided with reasonable arrangements for means of escape for disabled people.** **N/A**

✘ **Suitable protection of escape routes including provision of fire doors/hatches including to roof voids, individual dwellings/flats, compartment doors, riser cupboard doors and risk rooms?** **No**

👁 Finding

👤 SC ⌚ Aug 13, 2020, 7:42:58 AM

Ventilator breaching escape staircase.

Likelihood: Low **Consequence: Medium Harm**


✅ Tasks **1**

Ventilator breaching escape staircase.

There is ventilator in the external wall outside flats: 17,35,42,48,50,65 & 66. Depending on its position inside the flat it may allow smoke to enter the stair in the event of a fire. It is noted that there is some ventilation to open air but this is not at the head of the stair and smoke logging may occur.

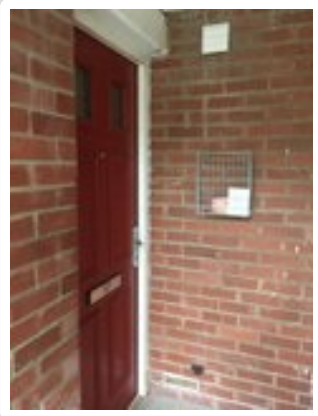
It is recommended that this is investigated and if necessary the ventilation re routed or an appropriate fire rated block fitted.

Location Complete building (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

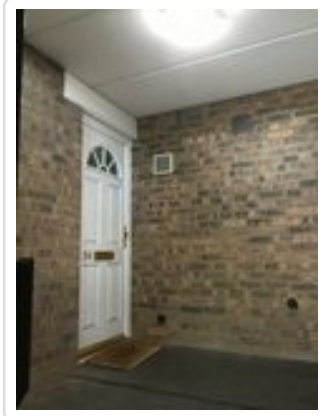
Medium Priority — complete within 9 months to reduce the risk by 100%  SC

Assigned Users  John Conroy

Images 7



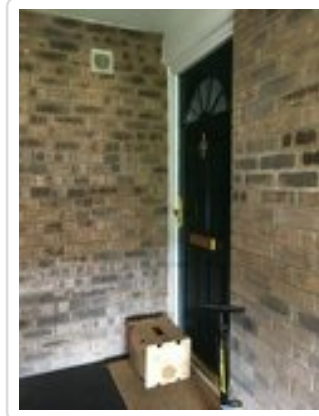
IMG_6494
— Jul 25, 2020, 11:40:13 AM



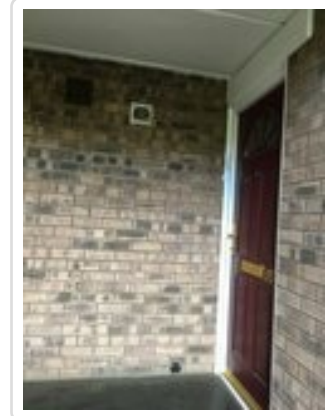
IMG_6408
— Jul 25, 2020, 11:32:11 AM



IMG_6424
— Jul 25, 2020, 11:32:11 AM



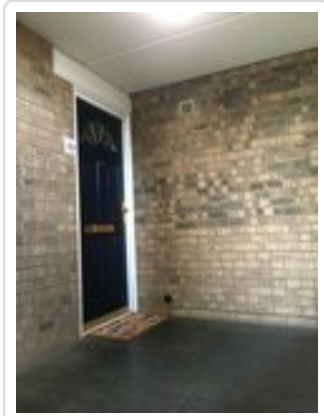
IMG_6425
— Jul 25, 2020, 11:32:10 AM



IMG_6444
— Jul 25, 2020, 11:32:10 AM



IMG_6449
— Jul 25, 2020, 11:32:10 AM





IMG_6406
— Jul 25, 2020, 11:32:09 AM

First floor (First Floor) **2 x 1 = 2 | Tolerable Risk**

3 / 3

✘ Suitable protection of escape routes including provision of fire doors/hatches including to roof voids, individual dwellings/flats, compartment doors, riser cupboard doors and risk rooms? No

Finding

 SC  Jul 26, 2020, 12:30:54 PM

Escape route fire protection

Likelihood: Low **Consequence: Medium Harm**

Tasks 1


Escape route separation - not FR

The external wall to flat 18 on the first floor is constructed of glass blocks. This flat is at the base of the escape staircase and was the former caretakers flat. It is believed to be an original constructional feature.

An inspection in 2019 was unable to confirm that it provides the required fire resistance (integrity/insulation/stability) to protect the escape route.

Options should be considered to remedy this and might include: replacing the wall or, providing a protected inner hallway or, linking fire detection in flat 18 to the flats above on the escape staircase.

Location First floor (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

Medium Priority — complete within 9 months to reduce the risk by 100%  SC

Assigned Users  John Conroy

Images 1



IMG_4521

— Jul 26, 2020, 12:30:54 PM

The escape for most of the flats above ground floor is via generally semi-open routes which provides venting for smoke, however, also see comment above re 'escape routes' regarding impact of a fire on these routes. This includes the staircases from ground to first floor flats and those serving 2nd/4th and 5th/7th floor flats off the walkways at 3rd and 6th floors. The main staircases at each end running the full height of the building are open at all levels except the head of the stair. The walkways are also ventilated at each end of the block.

There are skylights at the head of the escape stairs which appear to be openable. These could be investigated further to provide smoke ventilation by adaptation or modification to enable them to be opened manually (remotely) or by AOV.

The travel distances on the walkways are acceptable, however, they are undivided. These escape routes are neither enclosed corridors or fully open balconies (as per technical guidance). There might be some benefit in providing doors across the walkway where the short staircases emerge on the walkway but given smoke from a fire below could affect both sides of the partition it is not clear if these would be of use compared to fire detection.

A programme is in place (2020-21: delayed by Covid-19) to replace all tenant flat entrance doors and to address leasehold doors. There are no other openings onto the escape routes which also helps to reduce the likelihood of them being affected by a fire. It is also proposed to replace store cupboard doors with FD30 standard doors which will also reduce the opportunity for arson.

The caretakers office is a very small space with acceptable single direction travel distance.

🔒 Measures to Limit Fire Spread and Development

Complete building (Complete Building) **3 x 2 = 6 | Substantial Risk**

1 / 2

- ✔ It is considered that there is: Reasonable limitation of linings that might promote fire spread **Yes**
- ✔ As far as can reasonably be ascertained, fire dampers are provided as necessary to protect critical means of escape against passage of fire, smoke and combustion products in the early stages of a fire? **N/A**
- ✘ It is considered that there is: Compartmentation of a reasonable standard including external faces of buildings **No**

👁 Finding

👤 SC ⌚ Aug 11, 2020, 5:45:42 PM

Compartmentation does not appear to be to the required fire resistance. Following fires in blocks of similar design breaches in the service riser became apparent. The design of the riser in this block is very similar and likely to present the same issues

Likelihood: Moderate **Consequence: High Harm**

✔ Tasks 2

- Compartmentation to provide 60 minutes fire resistance in blocks above of 6 storeys

There is a requirement for compartmentation to provide 60 minutes fire resistance in blocks of 6 storeys and above.

Location Complete building (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

High Priority — complete within 12 months to reduce the risk by 50% 👤 SC

Assigned Users 👤 John Conroy

- Structural investigation-breach of compartment wall/floor

Further structural investigation is required to ascertain the consequence of the compartmentation breach, to establish if the following actions are required:

- Type 2, 3 or 4 Fire Risk Assessment.
- Change to the Fire Strategy of the building from "Stay Put" to Simultaneous Evacuation
- Installation of Automatic Fire Detection System

Location Complete building (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

High Priority — complete within 3 months to reduce the risk by 50% 👤 SC

Assigned Users 👤 John Conroy

✖ It is considered that there is: **Compartmentation of a reasonable standard including external faces of buildings** No

👁 Finding

👤 SC 🕒 Jul 25, 2020, 12:29:40 PM

The materials on the external face of the building and/or the installation methods and materials could not be determined and appeared to be of sufficient amounts to be regarded as likely to contribute to external fire spread unless of a non combustible material and should be examined/tested and the installation confirmed.

Balconies have been enclosed by residents. It is not known if these were authorised and compliant with building regulations.

Likelihood: Low **Consequence: Medium Harm**

✅ Tasks 2

External balconies-testing

The materials on the external face of the building and/or the installation methods and materials could not be determined and appeared to be of sufficient amounts to be regarded as likely to contribute to external fire spread unless of a non combustible material and should be examined/tested and the installation confirmed. {Government cladding ban for combustible cladding on buildings limits materials to products achieving a European Classification of Class A1 or A2-s1,d0 when tested in accordance with BS EN 13501-1 :2007+A1:2009. This also includes balconies attached to external walls as regarded by building regulations as specified attachments and above 18m are subject to the same requirements and must achieve the same European Classification. Below this height the 'specified attachment' should be risk assessed and appropriate measures implemented.}

Location Complete building (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

Medium Priority — complete within 12 months to reduce the risk by 50% 👤 SC

Assigned Users 👤 John Conroy

Resident use of balconies

It was not possible for the assessor to externally check by observation the use of all the resident balcony spaces given the height of the building. In discussing this with the caretaker there are some balconies of concern (flats 15 and 20) that may present additional fire hazards. With the support of the housing management team these should be investigated and information provided to residents more generally about the usage of balconies.

Location Complete building (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

Medium Priority — complete within 6 months to reduce the risk by 50% 👤 SC

Assigned Users 👤 John Conroy

🖼 Images 4



IMG_6367
— Jul 25, 2020, 12:29:40 PM



IMG_6368
— Jul 25, 2020, 12:29:40 PM



IMG_6456
— Jul 25, 2020, 12:28:38 PM



IMG_6460
— Jul 25, 2020, 12:28:38 PM

A flat fire in Hanover Court early in 2020 and in block 4 at Kingsway flats in May 2020 resulted in either smoke and/or fire spread through the service riser. The outcomes of a subsequent specific FRA (see 'Evidence') included a review of the stay put policy, installation of linked early warning of fire and further surveys of service risers in all blocks at Kingsway flats and Hanover/Princess Courts (as the buildings are from the same era and very similar in design) to provide solutions to the lack of fire resistance/compartmentation.

This work is being treated as high priority by CCC alongside upgrading flat entrance doors to FD30S standard.

Resident balconies are not constructed of combustible materials although some are enclosed - see recommendation above.

Escape routes are mostly sterile with non combustible linings (Believed to be Class O/B-s3,d2).

💡 Emergency Escape Lighting

✔ Reasonable standard of emergency escape lighting system provided? **Yes**

Emergency lighting is provided throughout the communal areas and appeared to be in working order. The assessor was not able to verify its effectiveness at time of assessment.

Annual test: May 2020.

It is not certain if monthly testing is being carried out - see section below

🔗 Fire Safety Signs and Notices

Complete building (Complete Building) **1 x 1 = 1 | Trivial Risk**

1 / 2

✘ Reasonable standard of fire safety signs and notices? **No**

👁 Finding

👤 SC 🕒 Jul 26, 2020, 12:45:37 PM

There was no signage indicating the use of lifts

Likelihood: Low **Consequence: Low Harm**

✔ Tasks 1

Lift Signage-do not use

Signage indicating the use of lifts should be provided. Where lifts are not to be used in the event of fire provide 'in the event of fire do not use lift' signage at each floor level and in accordance with current standards

Location Complete building (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

Low Priority — complete within 3 months to reduce the risk by 100% 👤 SC

Assigned Users 👤 John Conroy

🖼 Images 2



IMG_6432
— Jul 26, 2020, 12:45:37 PM



IMG_6437
— Jul 26, 2020, 12:45:37 PM

Complete building (Complete Building) **2 x 1 = 2 | Tolerable Risk**

2 / 2

✘ Reasonable standard of fire safety signs and notices? **No**

👁 Finding

👤 SC 🕒 Aug 13, 2020, 7:47:50 AM

General signage review

Likelihood: Low **Consequence: Medium Harm**

✔ Tasks 1

General fire exit signage review


The fire exit signage appears to be adequate. Some improved signage including pictogram style, locating specific levels and flats is to be reviewed in light of the changes to ADB (Grenfell Inquiry) through liaison with Cambridgeshire Fire & Rescue Service and residents.

This review could incorporate improvements to the exit signage. For example, signage to avoid confusion regarding staircases off the 3rd/6th floor walkways which are non escape stairs is recommended (as at Kingsway flats).

Fire procedure notices detailing the stay put policy are located at the entrances to the block at ground floor

level and on entrances to the walkways at 3rd and 6th floors.

Location Complete building (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

Medium Priority — complete within 6 months to reduce the risk by 100%  SC

Assigned Users  John Conroy

Fire exit signage incorporates pictogram and text format. The position and location of signage is generally satisfactory in terms of compliance and give the layout/design of the blocks but improvements could be made.

(Note. The wording on the DR inlet box (north end of block) is incorrect as it states it is an outlet).

Means of Giving Warning in Case of Fire

Complete building (Complete Building) **3 x 2 = 6 | Substantial Risk**

1 / 1



✔ Reasonable manually operated electrical fire alarm system provided? **N/A**

✔ Automatic fire detection provided- Throughout the Premises? **N/A**

✔ Automatic fire detection provided- Part of the premises only? **N/A**

✘ Extent of automatic fire detection generally appropriate for the occupancy and fire risk? **No**

Finding

 SC  Aug 13, 2020, 7:48:24 AM

The premises should be provided with an appropriate fire warning system to a correct grade and with a correct detection level according to the occupancy, design and use of the building


Likelihood: Moderate **Consequence: High Harm**

✔ Tasks **1**

Fire warning system-correct grade/detection

In light of recent findings concerning compartmentation (service risers) and flat entrance doors, subject to further investigations/survey, the premises should be provided with an appropriate fire warning system to provide early warning to residents of a fire in other parts of the building which could facilitate full evacuation of a specific area of the block.

Location Complete building (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

High Priority — complete within 6 months to reduce the risk by 100%  SC

Assigned Users  John Conroy

✔ Remote transmission of alarm signals? **NA**

This assessment has considered the communal areas where there is currently no fire alarm system or fire detection to initiate fire safety systems such as AOV.

Flats have only a smoke alarm in the hallways (LD3) and are due to have additional heat detection installed in kitchens/living area in 2020/21. Where this is not an open plan area a smoke alarm is recommended for the living area providing LD2 coverage.

Following the fire at Kingsway flats and in Hanover Court earlier in 2020 and a specific fire risk assessment, the need to provide early warning to residents of a fire other than in their own dwelling has been identified. This is in conjunction with providing an interim measure until flat entrance doors are replaced with FD30S units and compartmentation work on service risers is completed.

A survey to determine fire alarm requirements will be required and is likely to link dwellings in particular off staircases that could become compromised by a fire due to the design and layout of the building. See comments above in 'Premises Description' and 'Evacuation Strategy'.

Manual Fire Extinguishing Appliances

Complete building (Complete Building)

1 / 1

✔ Reasonable provision of portable fire extinguishers? **N/A**

✔ Hose reels provided? **N/A**

✔ Are all fire extinguishing appliances readily accessible? **N/A**

It is not appropriate to provide fire extinguishers in the communal areas. The caretaker has two water (9L) in his office.

Relevant Fire Extinguishing Systems

Complete building (Complete Building)

1 / 1

- ✔ **Is fixed firefighting equipment and fire safety systems provided where required and are they suitable for the risks identified?** **Yes**
- ✔ **Is a natural or mechanical smoke control system employed where necessary and is it appropriate for the location?** **N/A**

A dry riser outlet is provided on the 3rd and 6th floor walkways at each end of the building with the inlet directly below. A PIB for both Hanover and Princess Court is located at the Coronation Street end of the block adjacent the access staircase. The DR was tested: January 2020 (6m) Annual test due: July 2020

It is recommended that the fire service are invited to use the DR's as part of a training/familiarisation exercise.

The lift has a fire fighters control switch outside the lift doors at ground level. It is not clear if this is still operative - see section below.

↕ Other Relevant Fixed Systems and Equipment

Complete building (Complete Building)

1 / 1

- ✔ **Has suitable provision of fire-fighters switch(es) for high voltage luminous tube signs, etc been made?** **N/A**

There are high priority recommendations that have already been highlighted in May 2020 following the fire in Kingsway flats and the flat entrance door survey carried out in 2019. Progress to rectify these deficiencies is underway and has been delayed by the national Covid issue.

New FD30S flat entrance doors are programmed to be fitted in 2020/21 in this block.

The other linked fire safety issue is the design of the building and how a fire might affect escape routes along with the service riser potentially not being adequately fire separated (subject to survey). A combination of measures would address this given it is not known how a fire may affect the semi open escape routes and includes linked fire warning systems.

MANAGEMENT OF FIRE SAFETY

📄 Procedures and Arrangements

Complete building (Complete Building)

3 x 2 = 6 | Substantial Risk

1 / 1

- ✔ **Competent person(s) appointed to assist in undertaking the preventive and protective measures (i.e. relevant general fire precautions)?** **Yes**
- ✔ **Is there a suitable record of the fire safety arrangements?** **Yes**
- ✔ **Appropriate fire procedures in place?** **Yes**
- ✔ **Are procedures in the event of fire appropriate and properly documented?** **Yes**
- ✔ **Are there suitable arrangements for summoning the fire and rescue service?** **N/A**
- ✔ **Are there suitable arrangements for ensuring that the premises have been evacuated?** **N/A**
- ✔ **Is there a suitable fire assembly point(s)?** **N/A**
- ✘ **Are there adequate procedures for evacuation of any disabled people who are likely to be present?** **No**

👁 Finding

👤 SC ⌚ Aug 13, 2020, 7:51:10 AM

Procedures for people with restricted mobility (PRM) and/or who are vulnerable to be confirmed through person centred fire risk assessments (PCFRA).

Likelihood: Moderate **Consequence: High Harm**

✔ Tasks **1**

☐ PRM procedures

An action point from the recent specific fire risk assessment (SFRA) is to establish if there are residents who need assistance to evacuate their flat given the suspension of the stay put policy established through PCFRAs.

On completion of this survey PEEPs maybe required for individual residents with copies kept in the premises information box (PIB).

Location Complete building (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

High Priority — complete within 6 months to reduce the risk by 100% 👤 SC

Assigned Users 👤 John Conroy

- ✔ **Persons nominated and trained to use fire extinguishing appliances?** **N/A**
- ✔ **Persons nominated and trained to assist with evacuation, including evacuation of disabled people?** **N/A**
- ✔ **Appropriate liaison with fire and rescue service (e.g. by fire and rescue service crews visiting for familiarization visits)?** **Yes**
- ✔ **Routine in-house inspections of fire precautions (e.g. in the course of health and safety inspections)?** **Yes**

⊗ Are there suitable arrangements to meet the fire and rescue service on arrival and provide relevant information, including that relating to hazards to fire-fighters? **No**

👁 Finding

👤 SC ⌚ Aug 13, 2020, 7:51:10 AM

Information available for firefighters on arrival at the premises requires updating.

Likelihood: Moderate **Consequence: Medium Harm**

✅ Tasks **1**

❑ Information to firefighters (PIB)

Ensure any premises information box (PIB) contains all information relevant to the emergency services. In particular in the case of the fire service, provide keys to the fire warning panel/s, relevant site and floor plans annotated with, or; separate details of hazards and risk rooms, as well as a vulnerability list where appropriate.

This should include evacuation arrangements and risks following and identified from PCFRA's and PEEP's. The current plans date from October 2007.

Once PCFRA's have been carried out any relevant information/PEEPS should be held in the PIB.

Following further liaison with CFRS additional plans/information relating to the layout/numbering of Kingsway flats might be required to be held in the PIB.

Location Complete building (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

High Priority — complete within 6 months to reduce the risk by 100% 👤 SC

Assigned Users 👤 John Conroy

The need to assess for potentially vulnerable residents who may have difficulty escaping independantly has been highlighted following the fire in Kingsway.

A meeting to initiate a survey for PCFRA's has taken place.

Temporary fire procedure arrangements may be required to be put in place until upgrading of compartmentation and fire doors has been completed. In this interim period an early fire warning system extending beyond individual dwellings may also be installed as per Kingsway and subject to further surveys of the buildings compartmentation/means of escape that require a permanent linked fire warning system.

Residents have been written to regarding fire door upgrading. There are tenant representatives who have good liaison with Council Officers to ensure resident engagement.

With regard to changes in fire procedure, notices located at the entrances to the block would need to be amended/changed and an assembly point should be considered to assist the fire service in establishing who is involved in any fire incident.

⌚ Training and Drills

Complete building (Complete Building)

1 / 1

- ✔ Are all staff given adequate fire safety instruction and training on induction? **Yes**
- ✔ Are all staff given adequate periodic "refresher training" at suitable intervals? **Yes**
- ✔ Does all staff training provide information and instruction on the following: fire risks and fire safety measures in the premises, action in the event of fire, action on hearing the fire alarm, method and operation of manual call points, location and use of fire extinguishers, means for summoning the fire and rescue service, the identity of persons nominated to assist with evacuation and the identity of persons nominated to use fire extinguishing appliances **N/A**
- ✔ Are staff with special responsibilities (e.g. fire wardens) given additional training? **N/A**
- ✔ Are fire drills carried out at appropriate intervals? **N/A**
- ✔ When the employees of another employer work in the premises: Is their employer given appropriate information (e.g. on fire risks and general fire precautions)? **Yes**
- ✔ Is it ensured that the employees in the above question are provided with adequate instructions and information? **Yes**

Contractors are subject to the fire safety and health and safety policies of the Council.

The caretaker has recieved fire awareness training as a CCC employee.

🗋 Testing and Maintenance

Complete building (Complete Building) **2 x 1 = 2 | Tolerable Risk**

1 / 1

- ✔ Are the premises fire safety provisions adequately maintained? **Yes**

✔ Weekly testing and periodic servicing of fire detection and alarm system? **N/A**

✘ Monthly and annual testing routines for emergency escape lighting? **No**

👁 Finding

👤 SC ⌚ Aug 12, 2020, 8:06:23 AM

The emergency lighting installation and equipment could not be confirmed as periodically inspected, tested and maintained

Likelihood: Low **Consequence: Medium Harm**

✔ Tasks **1**

Emergency Lighting Monthly Testing

Ensure monthly function testing of all emergency lighting luminaires is undertaken. This is to establish the switching from normal to standby supply is working correctly.

Ensure a suitable system of defect reporting and repairs is in place and repairs/replacements are made in a timely fashion.

Location Complete building (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

High Priority — complete within 3 months to reduce the risk by 100% 👤 SC

Assigned Users 👤 John Conroy

✘ Annual maintenance of fire extinguishing appliances? **No**

👁 Finding

👤 SC ⌚ Aug 12, 2020, 8:06:23 AM

Portable fire fighting equipment in Caretakers office was not maintained in accordance with the current relevant standard and subject to an annual inspection by a qualified competent engineer.

Likelihood: Low **Consequence: Medium Harm**

✔ Tasks **1**

Portable fire extinguishers-annual maintenance

Portable fire fighting equipment should be maintained in accordance with the current relevant standard and subject to an annual inspection by a qualified competent engineer.

Location Complete building (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

High Priority — complete within 3 months to reduce the risk by 100% 👤 SC

Assigned Users 👤 John Conroy

✔ Periodic inspection of external escape staircases and gangways? **Yes**

✔ Six-monthly inspection and annual testing of rising mains? **Yes**

✘ Weekly and monthly testing, six-monthly inspection and annual testing of fire-fighting lifts? **No**

👁 Finding

👤 SC ⌚ Aug 12, 2020, 8:06:23 AM

Firefighting lifts were not maintained and tested at prescribed intervals in accordance with current standards or records were not available to verify testing.

Likelihood: Low **Consequence: Medium Harm**

✔ Tasks **1**

Firefighting/evacuation lifts-maintained and tested

Where fitted ensure firefighting/evacuation lifts are maintained and tested at prescribed intervals in accordance with current standards with appropriate records being kept

Location Complete building (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

High Priority — complete within 3 months to reduce the risk by 100% 👤 SC

Assigned Users 👤 John Conroy

✔ Weekly testing and periodic inspection of sprinkler installations and smoke control systems? **N/A**

✔ Annual inspection and test of lightning protection system? **Yes**

✔ Are suitable systems in place for reporting and subsequent restoration of safety measures that have fallen below standard? **Yes**

✘ Routine checks of final exit doors and/or security fastenings? **No**

👁 Finding

👤 SC ⌚ Aug 12, 2020, 8:06:24 AM

Testing of 'push to exit' over rides (green boxes)

Likelihood: Low **Consequence: Low Harm**

✓ Tasks 1

- Testing of 'push to exit' over rides (green boxes)

These are located in the refuse rooms and should be regularly tested. Monthly testing with the emergency lighting is suggested.

Location Complete building (Estates & Facilities, Hanover Court, Coronation Street, Cambridge)

Low Priority — complete within 6 months to reduce the risk by 100% 👤 SC

Assigned Users 👤 John Conroy

Arrangements are in place for all relevant tests for items in both the communal areas and individual dwellings by TSG.

Note. The door release buttons in the refuse rooms have manual over rides (green boxes) - these should be subject to regular testing (suggest monthly with emergency lighting).

The lift (including the lift for Princess Ct) has a fire fighters switch to enable control of the lift. It is not clear if this is still effective. Given the height of the building this facility would be of use to the fire service.

🕒 Records

Complete building

1 / 1

- ✓ **Appropriate records of: Fire drills?** N/A
- ✓ **Appropriate records of: Fire training?** N/A
- ✓ **Appropriate records of: Fire alarm tests?** N/A
- ✓ **Appropriate records of: Emergency escape lighting tests?** Yes
- ✓ **Appropriate records of: Maintenance and testing of other fire protection systems?** Yes

Records are kept centrally and electronically rather than on site.

The assessor did not have access to records.

This building is encompassed within Cambridge City Council's Fire Safety Policy and Fire Risk Management Strategy. See 'Evidence' for these documents.

There is liaison with the local fire protection officer (CFRS) and also with residents through leasehold representatives and CCC Estate Champions.

Management of fire safety has improved and the significant findings of fire risk assessments of recent assessments are being actioned with monitoring in place through the Fire Risk Management Group.

Future legislative requirements regarding flat entrance door inspections will need to be addressed.

➤ References

REFERENCES

Guidance in Support of Fire Safety Legislation

England and Wales

HM Government Guides to Fire Safety Risk Assessment, DCLG:

- Offices and Shops.
- Factories and Warehouses.
- Sleeping Accommodation.
- Residential Care Premises.
- Educational Premises.
- Small and Medium Places of Assembly.
- Large Places of Assembly.
- Theatres, Cinemas and Similar Premises.
- Open Air Events and Venues.
- Healthcare Premises.
- Animal Premises and Stables.
- Transport Premises and Facilities.
- Means of Escape for Disabled People.

Scotland

Scottish Government: Practical Fire Safety Guidance:

- Existing Non-Residential Premises.
- Existing Premises with Sleeping Accommodation.
- Care Homes.
- Healthcare Premises.
- The Evacuation of Disabled Persons from Buildings.

Northern Ireland

DHSSPS Sector Specific Guidance Documents:

- Sleeping Accommodation.
- Offices and Shops.
- Healthcare Premises.
- Theatres, Cinemas and Similar Premises.
- Small and Medium Places of Assembly.
- Open Air Events.

Guidance in Support of Building Regulations

England and Wales

- Approved Document B Vol 2, 2006 edition (as amended).

Scotland

- Technical Handbook 2019, Non-Domestic – Fire.

Northern Ireland

- Technical Booklet E 2012.

Fire Safety Design and Management

- BS 9991:2015. (Incorporating corrigendum No. 1.) Fire safety in the design, management and use of residential buildings. Code of practice.
- BS 9999:2017. Fire safety in the design, management and use of buildings. Code of practice.

Fire Detection and Fire Alarm Systems

- BS 5839-1:2017. Fire detection and fire alarm systems for buildings. Code of practice for design, installation, commissioning and maintenance of systems in non-domestic premises.
- BS 5839-6:2019. Fire detection and fire alarm systems for buildings - Code of practice for the design, installation, commissioning and maintenance of fire detection and fire alarm systems in domestic premises.
- BS 5839-8:2013. Fire detection and fire alarm systems for buildings - Code of practice for the design, installation, commissioning and maintenance of voice alarm systems.
- BS 5839-9:2011. Fire detection and fire alarm systems for buildings - Code of practice for the design, installation, commissioning and maintenance of emergency voice communication systems.

Fire Extinguishing Appliances

- BS 5306-1: 2006. Code of practice for fire extinguishing installations and equipment on premises - hose reels and foam inlets.

- BS 5306-3:2017. Fire extinguishing installations and equipment on premises. Commissioning and maintenance of portable fire extinguishers. Code of practice.
- BS 5306-8:2012. Fire extinguishing installations and equipment on premises - Selection and positioning of portable fire extinguishers - Code of practice.
- BS EN 3. Portable fire extinguishers.
- BS EN 671-3:2009. Fixed fire-fighting systems. Hose systems. Maintenance of hose reels with semi-rigid hose and hose systems with lay-flat hose.
- BS EN 1869:2019. Fire blankets.

Emergency Escape Lighting

- BS 5266-1:2016. Emergency lighting - Code of practice for the emergency lighting of premises.
- BS 5266-8:2004. (BS EN 50172: 2004). Emergency escape lighting systems.
- BS EN 1838:2013. Lighting applications - Emergency lighting.

Fire Safety Signs

- BS 5499-4:2013. Safety signs. Code of practice for escape route signing.
- BS ISO 3864-1:2011. Graphical symbols. Safety colours and safety signs. Design principles for safety signs and safety markings.
- BS EN ISO 7010:2020. Graphical symbols. Safety colours and safety signs. Registered safety signs.
- BS 5499-10:2014. Guidance for the selection and use of safety signs and fire safety notices.

Fixed Fire Extinguishing Systems and Equipment

- BS EN 12845:2015+A1 2019. Fixed fire-fighting systems. Automatic sprinkler systems. Design, installation and maintenance.
- BS 9990:2015. Non-automatic fire-fighting systems in buildings. Code of practice.

Lightning

- BS EN 62305-1:2011. Protection against lightning. General principles.
- BS EN 62305-2:2012. Protection against lightning. Risk management.
- BS EN 62305-3:2011. Protection against lightning. Physical damage to structures and life hazard.
- BS EN 62305-4:2011. Protection against lightning. Electrical and electronic systems within structures. Miscellaneous
- BS 7176:2007+A1: 2011. Specification for resistance to ignition of upholstered furniture for non-domestic seating by testing composites.
- BS 7273-4:2015. Code of practice for the operation of fire protection measures. Actuation of release mechanisms for doors.
- BS 7671:2018/A1:2020. Requirements for Electrical Installations. IET Wiring Regulations. Eighteenth Edition. BS 8899:2016. Improvement of fire-fighting and evacuation provisions in existing lifts. Code of practice.
- PAS 79:2012. Fire risk assessment - Guidance and a recommended methodology.

Published Guidance on Control of Contractors

- Standard Fire Precautions for Contractors Engaged on Crown Works, Department of Environment, HMSO.
 - Fire Prevention on Construction Sites. Fire Protection Association.
 - Fire Safety in Construction. HSG168 (2nd edition) HSE.
-

PRIVATE & CONFIDENTIAL

REGULATORY REFORM (FIRE SAFETY) ORDER 2005

Fire Risk Assessment

COST CENTER: Estates & Facilities



CAMBRIDGE
CITY COUNCIL

Assessed Area: Princess Court, Coronation Street, Cambridge

Responsible Person: Will Barfield

Manager: John Conroy

Risk Assessor: Steve Cotton

Date of Inspection: Jul 17, 2020

Recommended Review Date: Jul 17, 2021

Trivial Risk

Tolerable Risk

Moderate Risk

Substantial Risk

Intolerable Risk

Executive Summary

This assessment records the fire safety measures in place at the time the assessment was conducted, and lists significant findings and a recommended appropriate remedial action. It also provides guidance for the Responsible Person on how to maintain a satisfactory standard of fire precautions within the building concerned. The subject areas concerned are;

Responsible Person

The Responsible Person should ideally hold a senior or at least a responsible position within the company and have sufficient authority to allocate and mobilise finances and to control and organise members of staff.

Manager

In the context of this report the Manager is the person who will receive all the actions found during the assessment and will allocate them to the relevant people to get the risk removed or reduced to a manageable level.

Competent Persons

Competent Persons (Fire Wardens) are employees that have had additional instruction and training in fire safety, they are there to assist the responsible person in fulfilling their statutory duties.

Managing Fire Safety

Good management of fire safety is essential to ensure that fires are unlikely to occur; that if they do occur they are likely to be controlled quickly, effectively, and safely, and that everyone should be able to escape to a place of safety easily and quickly.

Record Keeping

In the event of a fire in the workplace you may need to provide evidence to the enforcing authorities when asked that you have complied with the fire regulations. It is helpful to keep a dedicated record of all maintenance of fireprotection equipment and staff training. In all cases the quality of records may be regarded as a good indicator to the enforcing authorities of the overall quality of the fire safety management structure.

Building Occupancy

Some buildings may have two or more main uses that are not ancillary to one another. For example offices over shops from which they are independent. In such cases, each of the uses should be considered as belonging to a purpose group in its own right. In other cases and particularly in some large buildings, there may be a complex mix of uses. In such cases it is necessary to consider the possible risk that one part of a complex may have on another and special measures to reduce the risk may be necessary.

Fire Alarm

All buildings or occupied areas should have arrangements for detecting fire, where a work place is equipped with fire detectors and alarms they should be in operational order whilst the premises are occupied and be maintained and tested to comply with the relevant code of practice.

Emergency Lighting

The primary purpose of emergency escape lighting is to illuminate escape routes, but it is also required to illuminate safety equipment such as firefighting equipment, fire alarm call points, and safety signage. The size and type of your premises will determine the complexity of the emergency escape lighting required. Where installed it should be in good working order and maintained to comply with the relevant code of practice.

Compartmentation/Fire-stopping

The spread of fire within a building or area can be restricted by sub-dividing it into compartments separated from one another by walls and/or floors of fire-resisting construction. The object is twofold:

- a) to prevent rapid fire spread which could trap occupants of the building; and
- b) to reduce the chance of fires becoming large, on the bases that large fires are more dangerous, not only to occupants and fire and rescue personnel, but also to people in the vicinity of the building.

Fire Fighting Equipment

You have a responsibility for the provision of appropriate fire-fighting equipment. It is also your responsibility to check that all fire-fighting equipment is in the correct position and in satisfactory order before the premises is used.

Means of Escape

A Route or routes provided to ensure safe egress from the premises or other locations to a place of safety. The general principle for means of escape is that any person confronted by an outbreak of fire within a building can turn away from it and make a safe escape initially to a place of relative safety, a protected stair, or corridor; which should lead to a place of ultimate safety which should be clear and free of the building.

Hazards: Arson/heating/smoking/cooking/electricity

The first step in the assessment is the identification of fire hazards. In determining these hazards, account should be taken of the three most common causes of fire, which together account for around two-thirds of all fires. These are arson, smokers' materials and electrical faults. Further consideration should be given to other recognised or common causes of fire, such as heating appliances, cooking and contractors' operations.

Fixed installations

These are fire-fighting systems which are sometimes installed within the structure of the building and could include hose-reels and sprinkler systems.

Contractors & industrial processes

Carelessness by outside contractors is a common cause of fire, including many fires that result in serious financial loss. Cutting, welding and use of blow torches are particular sources of ignition,

Not all of such works are caused by outside contractors. It has been estimated, however, that perhaps 20-25% of all non-domestic fires result from on-going work', such as refurbishment, repair and construction. The Building occupants/employees should be informed as to the significant findings of assessments. The following should be displayed for the benefit of all occupants and visitors.

- A copy of the building plan indicating the means of escape (where escape routes are complex and building occupants are not familiar with the building).

- Details of any significant findings
- Details of the Responsible Person

It is considered that the building occupants/users will include employees, contractors, visitors and emergency service personnel as well as any other person who may be in and around the premises.

Ownership of the Fire Risk Assessment

Regardless of whether the fire risk assessment is carried out by, for example, staff from an outside organisation, or a third party fire risk assessor, the ultimate responsibility for the adequacy of the risk assessment rests with the “responsible person” defined by legislation as responsible for ensuring that the fire risk assessment is carried out and that the fire precautions are adequate.

Introduction

For the Responsible Person at these premises, this document provides information regarding the standard of fire safety observed, and serves as a record as required by The Regulatory Reform (Fire Safety) Order 2005 and the

Management of Health and Safety at Work Regulations 1999.

The RRO places a requirement for all responsible persons to:

- Appoint one or more competent persons, depending on the size and use of the premises, to carry out any of the preventative and protective measures required by the Order.
- Provide your employees with clear and relevant information on the risks to them identified by the fire risk assessment, and about the measures you have taken to reduce the risks and prevent fire occurring.
- Consult your employees or their elected representatives about nominating people to carry out particular roles in connection with fire safety and improving the general fire precautions in the workplace.
- Before you employ a child, provide a parent or guardian with clear and relevant information regarding the risks to that child that have been identified in the fire risk assessment, and the measures you have or propose to put in place to safeguard that child.
- Inform non-employees, such as contractors and temporary workers of the risks to them, and provide them with information as to the nominated competent persons, and the general fire precautions provided in the workplace.
- Co-operate and co-ordinate with other building or site responsible persons regarding the findings of your risk assessment which may affect the safety of their employees.
- Provide the employer of any person from an outside organisation who may be working on your premises with relevant information as to the risks to them as outlined in your risk assessment, and the preventative and protective measures taken to secure their safety.
- If you are not the employer but have any control of premise which contain more than one workplace, you are responsible for ensuring that the requirements of the Order are complied with in those parts over which you have control.
- Consider the presence of any Hazardous or dangerous substances and the risk that they present to the occupants of the building, and undertake further assessment in the form of a Dangerous Substance Explosive Atmosphere Regulations assessment (DSEAR) assessment.
- Establish a suitable means of contacting the emergency services and providing them with relevant information regarding the storage or use of dangerous substances.
- Provide appropriate information, instruction and training to you employees, during normal working hours, about the fire precautions in your premises , when they first start working for you, (induction training) and from time to time during their employment (refresher training).
- Ensure that the premises are provided with appropriate fire-fighting equipment, fire detection and warning and emergency routes and exits, and that any equipment provide is maintained by competent persons and in efficient working order, good repair and fir for purpose.
- Your employees must co-operate with you to ensure that the premises are safe from fire and its effects, and must not do anything that will place themselves or other people at risk.

RISK PROFILE

To determine the appropriate means of escape and design features of the building, for life safety, a Risk Profile has been established following the methodology detailed in the current edition of 'BS9999: Code of practice for fire safety in the design, management and use of buildings'. This calculation is based on two main factors: occupancy characteristic and fire growth rate.

Once the risk profile has been determined, the minimum package of fire safety measures that should be provided, in accordance with BS9999, such as: travel distance, stair and exit widths and level of fire alarm and detection can be established.

Establishing the Risk Profile gives scope for a more interpretative approach, on a case by case basis, which takes into account the specific features of an individual building. This is especially significant when considering the issue of escape routes and fire exits in existing premises, particularly if they are of an historical or heritage nature.

Variation of the risk profile can be achieved by looking at existing and/or additional measures, which could be provided beyond what is determined as the minimum standard by BS9999. This allows for a more flexible approach to determine the fire safety measures that are required as an alternative to following other prescriptive guidance.

Risk Profile Matrix

Occupancy Characteristic	Fire Growth Rate			
	Slow	Medium	Fast	Ultra-Fast
Occupants awake & familiar with building	A1	A2	A3	Unacceptable without the addition of an effective localized suppression system or sprinklers
Occupants who are awake and unfamiliar with the building	B1	B2	B3	
Occupants who are likely to be asleep; long-term individual occupancy	Ci1	Ci2	Ci3	
Occupants who are likely to be asleep; long-term managed occupancy	Cii1	Cii2	Cii3	
Occupants who are likely to be asleep; short-term occupancy	Ciii1	Ciii2	Ciii3	
Other	Property is outside the scope of BS9999			

Your Risk Assessment Summary

Summary of Areas Requiring Attention

Risk Level Key: Trivial Risk Tolerable Risk Moderate Risk Substantial Risk Intolerable Risk

FIRE HAZARDS AND THEIR ELIMINATION OR CONTROL

Electrical Sources of Ignition

Housekeeping

Lightning

FIRE PROTECTION MEASURES

Fire Safety Signs and Notices

Means of Escape

Means of Giving Warning in Case of Fire

Measures to Limit Fire Spread and Development

Relevant Fire Extinguishing Systems

MANAGEMENT OF FIRE SAFETY

Procedures and Arrangements

Testing and Maintenance

Greater detail on the areas requiring attention can be found in the relevant sections of this document.

Summary of Significant Findings and Action Plan

Section	Risk Grading	Significant Finding and Action Required	Photo Y N	Job No / Date work complete
Electrical Sources of Ignition	Tolerable Risk	Reasonable measures taken to prevent fires of electrical origin?: No ⚠ Complete building (Complete Building) Significant Finding Electrical intake cupboards Actions Required ⚠ Electrical intake cupboards not fire resisting <i>The electrical intake cupboards opposite ground floor flat entrance doors should be kept locked shut. Appropriate signage should be applied to the outer face of</i>	N	

		<p><i>the doors. (Although these cupboards are not in an enclosed escape route, a fire in them could affect the staircases above. Enclosure in fire resistance is recommended as part of future programmed improvements).</i></p> <p><i>— complete within 6 months to reduce the risk by 100%</i></p>		
Lightning	Tolerable Risk	<p>Do the premises have a lightning protection system and if so does it appear satisfactory?: <i>No</i></p> <p>📍 Complete building (Complete Building)</p> <p>Significant Finding</p> <p>It is noted that the building has been fitted with lightning protection equipment; however, no evidence was observed allowing the assessor to verify that the system is subject to inspection and maintenance in accordance with BS EN 62305.</p> <p>Actions Required</p> <p>⊗ Lightning protection equipment-inspection and maintenance</p> <p><i>Verify that the lightning protection equipment is subject to inspection and maintenance in accordance with BS EN 62305.</i></p> <p><i>— complete within 3 months to reduce the risk by 100%</i></p>	N	
Housekeeping	Tolerable Risk	<p>Is the standard of housekeeping to the assessed area generally adequate?: <i>No</i></p> <p>📍 Complete building (Complete Building)</p> <p>Significant Finding</p> <p>Housekeeping to the premises was poor in the following areas due to storage of bicycles and/or items outside flats causing an obstruction and trip hazard.</p> <p>Actions Required</p> <p>⊗ Housekeeping-improve</p> <p><i>Housekeeping to the premises should be improved by removal of items/bicycles that may obstruct escape routes. These are outside flats 12, 25, 31, 37 and on the walkway.</i></p> <p><i>— complete within 3 months to reduce the risk by 100%</i></p>	Y	
Means of Escape	Substantial Risk	<p>Suitable protection of escape routes including provision of fire doors/hatches including to roof voids, individual dwellings/flats, compartment doors, riser cupboard doors and risk rooms?: <i>No</i></p> <p>📍 Complete building (Complete Building)</p> <p>Significant Finding</p> <p>A recent survey of flat entry doors and the door furniture revealed that the doors are non fire rated doors. The majority of doors whether notional or non-fire rated are provided with a combination of letterboxes, spyglasses, and some are fitted with Georgian wired glazing but many areas were not fire rated glazing or could not be determined. An inspection of the storage cupboard doors revealed that the doors are non fire rated and the integrity of the door set and therefore the escape route may be compromised.</p> <p>Actions Required</p> <p>⊗ Tenanted Flat entry doors-non FR</p> <p><i>All CCC tenant doors in a recent survey have been identified as HIGH priority as they are non fire rated flat entry doors and need to be replaced with an FD30S standard door.</i></p> <p><i>— complete within 9 months to reduce the risk by 33%</i></p> <p>⊗ Leaseholder Flat entry doors-non FR</p> <p><i>All leasehold doors in a recent survey have been identified as HIGH priority as they are non fire rated flat entry doors and need to be replaced with an FD30S standard door.</i></p> <p><i>— complete within 9 months to reduce the risk by 33%</i></p> <p>⊗ Storage cupboard door upgrade programme</p> <p><i>All store cupboard doors has on escape routes have been identified as a non fire rated door and needs to be included in the current storage cupboard door upgrade programme.</i></p> <p><i>— complete within 12 months to reduce the risk by 34%</i></p>	N	

Means of Escape	Tolerable Risk	<p>Suitable protection of escape routes including provision of fire doors/hatches including to roof voids, individual dwellings/flats, compartment doors, riser cupboard doors and risk rooms?: <i>No</i></p> <p>📍 Complete building (Complete Building)</p> <p>Significant Finding</p> <p>Ventilator breaching escape staircase.</p> <p>Actions Required</p> <p>✘ Ventilator breaching escape staircase.</p> <p><i>There is ventilator in the external wall outside flats: 8,9,21,26,30,31,32 & 49. Depending on its position inside the flat it may allow smoke to enter the stair in the event of a fire. It is noted that there is some ventilation to open air but this is not at the head of the stair and smoke logging may occur. It is recommended that this is investigated and if necessary the ventilation re routed or an appropriate fire rated block fitted.</i></p> <p><i>— complete within 9 months to reduce the risk by 100%</i></p>	Y	
Measures to Limit Fire Spread and Development	Moderate Risk	<p>It is considered that there is: Compartmentation of a reasonable standard including external faces of buildings: <i>No</i></p> <p>📍 Complete building (Complete Building)</p> <p>Significant Finding</p> <p>Compartmentation does not appear to be to the required fire resistance. Following fires in other blocks of similar design breaches in the service riser became apparent. The design of the riser in this block is very similar and likely to present the same issues</p> <p>Actions Required</p> <p>✘ Compartmentation to provide 30 minutes fire resistance in blocks up to 5 storeys</p> <p><i>There is a requirement for compartmentation to provide at least 30 minutes fire resistance in blocks up to 5 storeys.</i></p> <p><i>— complete within 9 months to reduce the risk by 50%</i></p> <p>✘ Structural investigation-breach of compartment wall/floor</p> <p><i>Further structural investigation is required to ascertain the consequence of the compartmentation breach, to establish if the following actions are required: • Type 2, 3 or 4 Fire Risk Assessment. • Change to the Fire Strategy of the building from "Stay Put" to Simultaneous Evacuation • Installation of Automatic Fire Detection System</i></p> <p><i>— complete within 3 months to reduce the risk by 50%</i></p>	N	
Fire Safety Signs and Notices	Trivial Risk	<p>Reasonable standard of fire safety signs and notices?: <i>No</i></p> <p>📍 Complete building (Complete Building)</p> <p>Significant Finding</p> <p>There was no signage indicating the use of lifts</p> <p>Actions Required</p> <p>✘ Lift Signage-do not use</p> <p><i>Signage indicating the use of lifts should be provided. Where lifts are not to be used in the event of fire provide 'in the event of fire do not use lift' signage at each floor level and in accordance with current standards.</i></p> <p><i>— complete within 3 months to reduce the risk by 100%</i></p>	Y	
Fire Safety Signs and Notices	Tolerable Risk	<p>Reasonable standard of fire safety signs and notices?: <i>No</i></p> <p>📍 Complete building (Complete Building)</p> <p>Significant Finding</p> <p>General fire exit signage review.</p> <p>Actions Required</p> <p>✘ General fire exit signage review</p> <p><i>The fire exit signage appears to be adequate. Some improved signage including</i></p>	N	

		<p><i>pictogram style, locating specific levels and flats is to be reviewed in light of the changes to ADB (Grenfell Inquiry) through liaison with Cambridgeshire Fire & Rescue Service and residents. This review could incorporate improvements to the exit signage. For example, signage to avoid confusion regarding staircases off the 3rd floor walkway which are non escape stairs is recommended (as at Kingsway flats). Fire procedure notices detailing the stay put policy are located at the entrances to the block at ground floor level and on entrances to the walkways at 3rd floor.</i></p> <p>— complete within 6 months to reduce the risk by 100%</p>		
Means of Giving Warning in Case of Fire	Moderate Risk	<p>Extent of automatic fire detection generally appropriate for the occupancy and fire risk?: No</p> <p>📍 Complete building (Complete Building)</p> <p>Significant Finding</p> <p>The premises should be provided with an appropriate fire warning system to a correct grade and with a correct detection level according to the occupancy, design and use of the building.</p> <p>Actions Required</p> <p>✖ Fire warning system-correct grade/detection</p> <p><i>In light of recent findings concerning compartmentation (service risers) and flat entrance doors, subject to further investigations/survey, the premises should be provided with an appropriate fire warning system to provide early warning to residents of a fire in other parts of the building which could facilitate full evacuation of a specific area of the block.</i></p> <p>— complete within 6 months to reduce the risk by 100%</p>	N	
Relevant Fire Extinguishing Systems	Moderate Risk	<p>Is fixed firefighting equipment and fire safety systems provided where required and are they suitable for the risks identified?: No</p> <p>📍 Complete building (Complete Building)</p> <p>Significant Finding</p> <p>Provision of Premises Information Box</p> <p>Actions Required</p> <p>✖ Provide Premises Information Box (PIB)</p> <p><i>The information for this block is contained in the PIB at Hanover Court. It is recommended that this block is provided with its own PIB so that fire service crews who may attend a fire in the building who are not from Cambridge, have the information they need for the block. (They are unlikely to be aware of the info being held in the Hanover Ct PIB).</i></p> <p>— complete within 6 months to reduce the risk by 50%</p>	N	
Procedures and Arrangements	Moderate Risk	<p>Are there suitable arrangements to meet the fire and rescue service on arrival and provide relevant information, including that relating to hazards to fire-fighters?: No</p> <p>📍 Complete building (Complete Building)</p> <p>Significant Finding</p> <p>Information available for firefighters on arrival at the premises requires updating.</p> <p>Actions Required</p> <p>✖ Information to firefighters (PIB)</p> <p><i>Ensure any premises information box (PIB) contains all information relevant to the emergency services. In particular in the case of the fire service, provide keys to the fire warning panel/s, relevant site and floor plans annotated with, or; separate details of hazards and risk rooms, as well as a vulnerability list where appropriate. This should include evacuation arrangements and risks following and identified from PCFRA's and PEEP's. The current plans date from October 2007. Once PCFRA's have been carried out any relevant information/PEEPS should be held in the PIB. Following further liaison with CFRS additional plans/information relating to the layout/numbering of Kingsway flats might be required to be held in the PIB.</i></p> <p>— complete within 6 months to reduce the risk by 100%</p>	N	
Procedures and	Substantial Risk	<p>Are there adequate procedures for evacuation of any disabled people who are likely to be present?: No</p>	N	

Arrangements		<p>📍 Complete building (Complete Building)</p> <p>Significant Finding</p> <p>Procedures for people with restricted mobility (PRM) and/or who are vulnerable to be confirmed through person cent red fire risk assessments.</p> <p>Actions Required</p> <p>⊗ PRM procedures</p> <p><i>An action point from the recent specific fire risk assessment is to establish if there are residents who need assistance to evacuate their flat given the suspension of the stay put policy. On completion of this survey PEEPs maybe required for individual residents with copies kept in the premises information box (PIB).</i></p> <p><i>— complete within 6 months to reduce the risk by 100%</i></p>		
Testing and Maintenance	Tolerable Risk	<p>Monthly and annual testing routines for emergency escape lighting?: No</p> <p>📍 Complete building (Complete Building)</p> <p>Significant Finding</p> <p>The emergency lighting installation and equipment could not be confirmed as periodically inspected, tested and maintained</p> <p>Actions Required</p> <p>⊗ Emergency Lighting Monthly Testing</p> <p><i>Ensure monthly function testing of all emergency lighting luminaires is undertaken. This is to establish the switching from normal to standby supply is working correctly. Ensure a suitable system of defect reporting and repairs is in place and repairs/replacements are made in a timely fashion.</i></p> <p><i>— complete within 3 months to reduce the risk by 100%</i></p>	N	
Testing and Maintenance	Tolerable Risk	<p>Weekly and monthly testing, six-monthly inspection and annual testing of fire-fighting lifts?: No</p> <p>📍 Complete building (Complete Building)</p> <p>Significant Finding</p> <p>Firefighting lifts were not maintained and tested at prescribed intervals in accordance with current standards or records were not available to verify testing.</p> <p>Actions Required</p> <p>⊗ Firefighting/evacuation lifts-maintained and tested</p> <p><i>Where fitted ensure firefighting/evacuation lifts are maintained and tested at prescribed intervals in accordance with current standards with appropriate records being kept</i></p> <p><i>— complete within 3 months to reduce the risk by 100%</i></p>	N	
Testing and Maintenance	Trivial Risk	<p>Six-monthly inspection and annual testing of rising mains?: No</p> <p>📍 Complete building (Complete Building)</p> <p>Significant Finding</p> <p>Security of DR outlet</p> <p>Actions Required</p> <p>⊗ Security of DR outlet</p> <p><i>Where the DR is tested it should be ensured that the handwheel is secured to prevent malicious opening.</i></p> <p><i>— complete within 6 months to reduce the risk by 100%</i></p>	Y	

⚠ Assessment Details

URN 1368

Overall Building Risk Rating **Substantial Risk**

Assessed building OR area name OR No Estates & Facilities > Princess Court, Coronation Street, Cambridge

Risk Assessor Steve Cotton
✉ icenifiresafety@btinternet.com

Date of Assessment Jul 17, 2020

Validated By Renier Barnard

Date of Validation Sep 23, 2020

📁 Client Details

Name Cambridge City Council

Address 1 The Guildhall

Town Cambridge

Post Code

🏠 Premises Description

Number of Floors Ground + 4 floors

Approximate floor area NA

Building Construction Constructed approx 1968 - concrete block and beam + brick. Flat asphalt roof. There is no external cladding only brick walls. The building would have been built to design codes at that time. It is not thought that there have been any significant upgrades from a fire safety perspective other than to fit a smoke alarm in each flat. See comment below re flat entrance doors.

Building description: There are 49 one/two bedroom flats which form separate fire compartments with service risers running the full height of the building believed to contain bathroom ventilation, SVP's, electrics, water and gas pipework. There is access to these at ground floor level opposite flat entrances and possibly from other locations in the block. From the recent fires in this and other similar blocks of flats (Hanover Ct & Kingsway Flats) it is not thought these are adequately fire separated from the flats themselves (see sections below). Flats have recessed balconies constructed of non combustible materials. Flat entrance doors are not the original installations and have also been replaced by leaseholders. From a sample survey in 2019 none of the doors in Princess Court are FD30S units.

There is a full length walkway at 3rd floor level with a full height staircase at each end of the block with 60m between staircases. There are three sets of short staircases off each walkway. Ground floor flats have access to the front and rear of the block. First floor flats are accessed (in pairs) by individual external single storey staircases at the rear of the building. 2nd and 4th floor flats are accessed off the 3rd floor walkway - this arrangement means a pair of flats can be reached by going either down a level or up a level from the same entry point off the walkway. There is an escape staircase at each end of the block providing alternative means of escape for most but not all flats. There is also a pair of flats at each level off these staircases.

The walkway is undivided and quite deep (at least 3m) with no dedicated down stands to channel smoke away. The walkway is open on one side but also partially enclosed by storage cupboards. There is a passenger lift at the north end of the block - it is not an emergency evacuation lift but has controls for fire fighters to use it in the event of a fire.

There is a refuse chute at each end of the 3rd floor off the walkways; off the south staircase with its own access landing setting this facility back and away from the block. The other chute is at the north end of the walkway near the lift. Both chutes are contained in a full height shaft with bins at the base in a secure storage area. Resident storage cupboards are located in the escape routes on each walkway and on most landings. There could also be riser cupboards on the walkways but the assessor was unable to confirm this.


Princess Court runs parallel with neighbouring block, Hanover Court. There is a green space in between along with a community room (separate FRA). There is good access to the block for the fire service - a high reach appliance could be used on some areas of the block but not all.

Main use of Building General needs block of flats.

Disabled / vulnerable Potentially some residents will be disabled/vulnerable.

persons	
Other persons at risk	The residents living in this block. A caretaker is employed to be on site Monday to Friday. Also, visitors to the block and other persons who may need to access it for various purposes.
Fire loss experience	There have been flat fires in these blocks over the years with some smaller arson fires.
Other relevant information	Some flats have been purchased and are leasehold residents.
Fire Service station serving site / estimated travel time	Approx 5 mins from Parkside (24hr crewed station) or approx 12-15 mins from the training facility at Milton. High rise PDA for 5 floors and above is mobilised for this block.
Additional sources of oxygen or flammable gases stored on site	None
Relevant Fire Safety Legislation	Fire Safety Order 2005 - Communal Areas. Housing Act 2004 for flats and internal areas.
Legislation Enforced by	Cambridgeshire Fire & Service Service and Environmental Health (CCC)
Enforcement Notice issued by Fire Authority	NA

 Assessment Details	
Assessor	Stephen Cotton MIFireE
Date of Assessment	17.07.2020
Date of previous assessment	03.07.2019
Date for review	17.07.2021
Management area of responsibility	Estates & Facilities
Survey type	Type 1 - PAS 79. New initial FRA.
"The Risk Profile" for this building has been calculated as	Private storage areas. Roof/plant not accessed or individual dwellings.
Areas not accessible during visit	<p>A specific fire risk assessment (SFRA) was carried out in May- June 2020 following at Kingsway flats. The SFRA included Princess Court as the design is very similar and the same issues have been highlighted in previous FRA's and by other fires. The assessment focused on flat entrance doors and service risers. This assessment is referred to in other the sections of this report. A copy of the SFRA can be found in 'Evidence'.</p> <p>There are garages at the end of the block - these are separate and do not form part of this assessment.</p> <p>There is a Fire Risk Management Group within Cambridge City Council to ensure delivery of its Fire Safety Policy and Fire Risk Management Strategy. Fire risk assessments are part of the strategy to achieve compliance with the FSO.</p> <p>In carrying out this assessment relevant guidance has been considered including 'Fire safety in purpose built blocks of flats' and current updates from MHCLG.</p>
Other relevant information	-

 Fire Prevention Strategy	
Fire Evacuation Strategy	At time of assessment there is a stay put policy. However, further investigations regarding the service risers and installation of FD30S flat entrance doors will be undertaken following the Kingsway fire and the SFRA mentioned above. This may result in changes to the evacuation strategy and an interim early warning system (most likely linked fire detection between flats off a common riser and/or staircase) might be installed.
AFD ; Warning System	There is no fire alarm or detection in the communal areas. It is believed flats are fitted with a smoke alarm in the hallway. A heat detector will be installed in the kitchen areas through 2020-21.
Escape Routes	Escape from ground floor flats is either from their front or rear access doors. Means of escape from 1st floor flats is via a short open air landing and the external staircases. Escape for 2nd, 3rd, 4th floors is via the walkways at 3rd floor level. There is a full height staircase at both ends of the block providing alternative escape routes once the walkways are reached. There is a travel distance of 60m between the main escape staircases. The exception is for the pairs of flats located off the main escape staircases where this provides single direction directly down the staircase (in theory occupants could travel upwards to access the walkway and the alternative staircase but this is not ideal if there was smoke in the staircase

area). This is an option for 4th floor occupants when descending their staircase, i.e. to go to the other staircase once a walkway is reached. There is also an initial dead end for flats at the end of each walkway but it is only 3m to the escape staircase and a well ventilated space so acceptable.

The main escape staircases are mostly open with no glazing but also no separation at 3rd floor (walkway level). At the upper most level (4th floor) there is no vent at ceiling/roof level (although there is a skylight that potentially could be upgraded).

The depth of the walkway which is quite deep (3m + with no down stands) and, along with partial enclosure, may result in (lateral) smoke logging of the escape route. This may occur by either fire emerging from windows below the walkway or from a flat entrance way if the door is not closed. The windows below the walkways are believed to be bedrooms so likely less a risk than the kitchen/living room spaces that open onto the balconies. This also means the higher fire risk rooms are on the opposite face of the building to the escape routes and may have been an intentional part of the design when built.

The walkway provides alternative means of escape but is not a fully 'open balcony' approach and protection of the route is not currently afforded by fire resistant flat entrance doors and storage cupboards.

The layout of the staircases to the upper floors and off the walkways mean they are in a vertical channel running the full height of the building which also encourages any smoke and heat to travel upwards affecting the escape route. In mitigation there are no windows opening onto any of the staircases and the flat entrance doors are being replaced with FD30S units through 2020-21.

Escape routes are generally sterile with non combustibile linings (Believed to be Class O/B-s3,d2).

It will be important to maintain the fire doors in good condition and to ensure the self closing devices are not disconnected by residents. This will be vital to protecting the escape routes and provide occupants the opportunity to escape should they choose to or if they are at risk and need to leave their flat. Changes to fire safety legislation will incorporate recommendations from MHCLG (Grenfell recommendations/Hackitt review) requiring these doors to be regularly inspected by the responsible person.

There are no final exit doors at ground level just openings to the stairways.

Emergency Escape Lighting	Emergency lighting is installed throughout the communal areas and appears to be in accordance with BS 5266
Fire Exit Directional Signage	Directional fire exit signage is provided from the 3rd floor walkway which is illuminated by the accommodation lighting. This is to be reviewed along with flat numbering in light of the Grenfell Inquiry recommendations and changes to ADB.
Fire Lobbies	There are no fire lobbies.
Smoke ventilation AOV	There is no AOV
Dry Riser	Dry riser outlets are installed on the 3rd floor walkway near the lift and on the refuse chute landing with the inlets at ground level directly below. The hydrants to supply the risers are located in Union Road and Coronation Street. A fire appliance can get within 18-25m of the DR inlet.
Type; Number of Fire Extinguishers	There are no fire extinguishers in the communal areas.

⊕ Scope of Assessment

-

🏠 Contact Details

Identity of Client

-

Any persons with responsibility for fire safety within the premises (refer to artificial 5 of RRF50)

-

Telephone number

-

➤ Evidence

The Evidence table below shows the documents associated with the Unit that this assessment belongs to. Showing the version and expiry date.

Total **2** items.

Category	Document	Contractor	Expiry Date	Version
FRA Addendum	FRA Supporting Document	Steve Cotton	-	1
Strategy / Policy	Fire Strategy Document	Steve Cotton	-	1

Your Risk Assessment Grading

The following risk level estimator is based on a general health and safety risk level estimator as detailed in BS 8800:

Risk Matrix			LIKELIHOODS					
			Low	1	Moderate	2	Extreme	3
CONSEQUENCES	High Harm	3	Moderate Risk	3	<input checked="" type="checkbox"/> Substantial Risk	6	Intolerable Risk	9
	Medium Harm	2	Tolerable Risk	2	Moderate Risk	4	Substantial Risk	6
	Low Harm	1	Trivial Risk	1	Tolerable Risk	2	Moderate Risk	3

Taking into account the pas 79 fire prevention measures observed at the time of this risk assessment, it is considered that the hazard from pas 79 fire (likelihood of pas 79 fire) at these premises is:

None Low Moderate Extreme

In this context, a definition of the above terms is as follows:

Low: Outbreak of fire unlikely to result in serious injury or death of any occupant (other than an occupant sleeping in a room in which a fire occurs).

Moderate: Outbreak of fire could foreseeably result in injury (including serious injury) of one or more occupants, but it is unlikely to involve multiple fatalities.

Extreme: Significant potential for serious injury or death of one or more occupants.

Taking into account the nature of the building and the occupants, as well as the pas 79 fire protection and procedural arrangements observed at the time of this pas 79 fire risk assessment, it is considered that the consequences for life safety in the event of pas 79 fire would be:

None High Harm Medium Harm Low Harm

In this context, a definition of the above terms is as follows:

High Harm: Lack of adequate controls applied to one or more significant fire hazards, such as to result in significant increase in likelihood of fire.

Medium Harm: Normal fire hazards (e.g. potential ignition sources) for this type of occupancy, with fire hazards generally subject to appropriate controls (other than minor shortcomings).

Low Harm: Unusually low likelihood of fire as a result of negligible potential sources of ignition.

Accordingly, it is considered that the risk to life from pas 79 fire at these premises is:

None Trivial Risk Tolerable Risk Moderate Risk Substantial Risk Intolerable Risk

A suitable risk-based control plan should involve effort and urgency that is proportional to risk:

Risk level	Action and timescale
Trivial Risk	No action is required and no detailed records need be kept.
Tolerable Risk	No major additional fire precautions required. However, there might be a need for reasonably practicable improvements that involve minor or limited cost.
Moderate Risk	It is essential that efforts are made to reduce the risk. Risk reduction measures, which should take cost into account, should be implemented within a defined time period. Where moderate risk is associated with consequences that constitute extreme harm, further assessment might be required to establish more precisely the likelihood of harm as a basis for determining the priority for improved control measures.
Substantial Risk	Considerable resources might have to be allocated to reduce the risk. If the premises are unoccupied, it should not be occupied until the risk has been reduced. If the premises are occupied, urgent action should be taken.
Intolerable Risk	Premises (or relevant area) should not be occupied until the risk is reduced.

Assessment Report

FIRE HAZARDS AND THEIR ELIMINATION OR CONTROL

🔌 Electrical Sources of Ignition

Complete building (Complete Building) **2 x 1 = 2 | Tolerable Risk**

1 / 1

- ✔ Fixed installation periodically inspected and tested? **Yes**
- ✔ Portable appliance testing (where appropriate) carried out? **N/A**
- ✔ Suitable policy regarding the use of personal electrical appliances? **N/A**
- ✔ Suitable limitation of trailing leads and adapters? **N/A**
- ✘ Reasonable measures taken to prevent fires of electrical origin? **No**

👁 Finding

👤 SC ⌚ Aug 16, 2020, 12:44:51 PM

Electrical intake cupboards

Likelihood: Low **Consequence: Medium Harm**

✔ Tasks **1**

- Electrical intake cupboards not fire resisting

The electrical intake cupboards opposite ground floor flat entrance doors should be kept locked shut.

Appropriate signage should be applied to the outer face of the doors.

(Although these cupboards are not in an enclosed escape route, a fire in them could affect the staircases above. Enclosure in fire resistance is recommended as part of future programmed improvements).

Location Complete building (Estates & Facilities, Princess Court, Coronation Street, Cambridge)

Low Priority — complete within 6 months to reduce the risk by 100% 👤 SC

Assigned Users 👤 John Conroy

FWT: May 2019

🚭 Smoking

Complete building (Complete Building)

1 / 1

- ✔ Reasonable measures taken to prevent fires as a result of smoking? **Yes**
- ✔ Smoking prohibited on the premises? **Yes**
- ✔ Smoking prohibited in appropriate areas? **N/A**
- ✔ Suitable arrangements for those who wish to smoke? **N/A**
- ✔ This policy appeared to be observed at time of inspection? **Yes**

No smoking signs are located at the main entrances to the building and at access points to the first floor landings.

They are also displayed on the walkway at 3rd floor.

🔥 Arson

Complete building (Complete Building)

1 / 1

- ✔ Is there an absence of unnecessary fire load in close proximity to the premises or available for ignition by outsiders? **Yes**
- ✔ Does basic security against arson by outsiders appear reasonable? **Yes**

There is open access to these flats, although the refuse/bin rooms are limited in their availability to residents and locked at other times. Storage cupboards were secure and fully enclosed (unlike at Kingsway).

Some stored items on a few landings could be a source of combustibles but this is generally low risk.

Anecdotally arson is not a significant issue.

🔥 Portable Heaters and Heating Installations

Complete building (Complete Building)

1 / 1

- ✔ Is the use of portable heaters avoided as far as practicable? **N/A**

✔ If portable heaters are used: Is the use of the more hazardous type (e.g. radiant bar fires or lpg appliances) avoided?

N/A

✔ If portable heaters are used: Are suitable measures taken to minimize the hazard of ignition of combustible materials? N/A

✔ Are fixed heating installations subject to regular maintenance? N/A

There is no heating in the communal areas.

🍳 Cooking

Complete building (Complete Building)

1 / 1

✔ Are reasonable measures taken to prevent fires as a result of cooking? N/A

✔ More specifically: Filters changed and ductwork cleaned regularly? NA

✔ More specifically: Suitable extinguishing appliances available? N/A

There are no cooking facilities in the communal areas.

⚡ Lightning

Complete building (Complete Building) **2 x 1 = 2 | Tolerable Risk**

1 / 1

✘ Do the premises have a lightning protection system and if so does it appear satisfactory? No

👁 Finding

👤 SC ⌚ Jul 23, 2020, 7:53:22 PM

It is noted that the building has been fitted with lightning protection equipment; however, no evidence was observed allowing the assessor to verify that the system is subject to inspection and maintenance in accordance with BS EN 62305.

Likelihood: Low **Consequence: Medium Harm**

✔ Tasks 1

Lightning protection equipment-inspection and maintenance

Verify that the lightning protection equipment is subject to inspection and maintenance in accordance with BS EN 62305.

Location Complete building (Estates & Facilities, Princess Court, Coronation Street, Cambridge)

Medium Priority — complete within 3 months to reduce the risk by 100% 👤 SC

Assigned Users 👤 John Conroy

The lightning equipment was tested: 15.03.2019

Test overdue

🏠 Housekeeping

Complete building (Complete Building) **2 x 1 = 2 | Tolerable Risk**

1 / 1

✘ Is the standard of housekeeping to the assessed area generally adequate? No

👁 Finding

👤 SC ⌚ Jul 23, 2020, 8:24:23 PM

Housekeeping to the premises was poor in the following areas due to storage of bicycles and/or items outside flats causing an obstruction and trip hazard.

Likelihood: Low **Consequence: Medium Harm**

✔ Tasks 1

Housekeeping-improve

Housekeeping to the premises should be improved by removal of items/bicycles that may obstruct escape routes. These are outside flats 12, 25, 31, 37 and on the walkway.

Location Complete building (Estates & Facilities, Princess Court, Coronation Street, Cambridge)

Medium Priority — complete within 3 months to reduce the risk by 100% 👤 SC

Assigned Users 👤 John Conroy

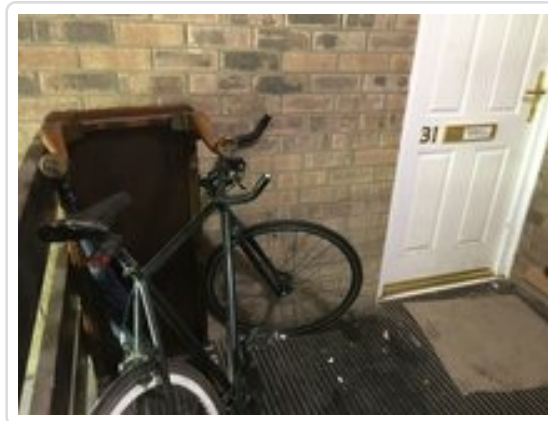
🖼 Images 5



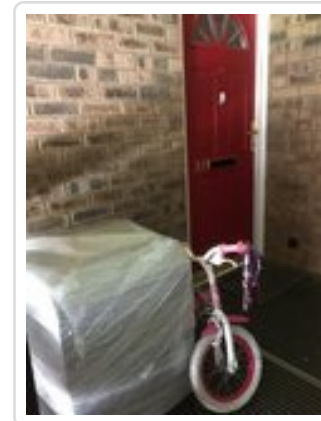
IMG_6386
— Jul 23, 2020, 8:24:23 PM



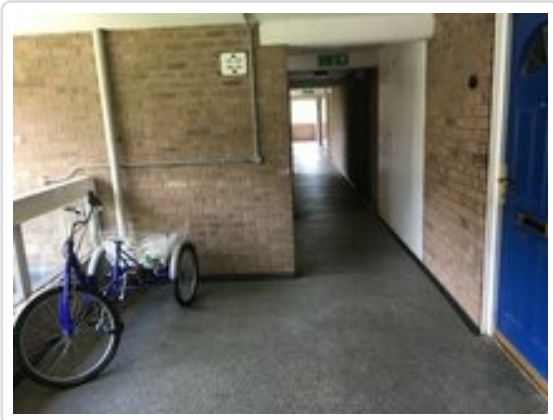
IMG_6332
— Jul 23, 2020, 8:22:21 PM



IMG_6351
— Jul 23, 2020, 8:02:52 PM



IMG_6354
— Jul 23, 2020, 8:02:52 PM



IMG_6356
— Jul 23, 2020, 8:02:52 PM

- ✔ More specifically do combustible materials appear to be separated from ignition sources? **Yes**
- ✔ More specifically is there an avoidance of an unnecessary accumulation of combustible materials or waste? **Yes**
- ✔ More specifically is there appropriate storage of hazardous materials? **Yes**
- ✔ More specifically is there an avoidance of inappropriate storage of combustible materials? **Yes**

As can be seen from the attached images there are either bikes or items of storage outside some flat entrance doors. Application of the Council's zero tolerance policy as per other flats is recommended although acknowledged as difficult to implement in some instances.

🔧 Hazards Introduced By Outside Contractors and Building Works

Complete building (Complete Building)

1 / 1

- ✔ Are fire safety conditions imposed on outside contractors? **Yes**
- ✔ Is there satisfactory control over works carried out on the premises by outside contractors (including "hot work" permits)? **Yes**
- ✔ If there are in-house maintenance personnel, are suitable precautions taken during "hot work", including use of "hot work" permits? **Yes**

Contractors and building work are subject to the Council's Fire Safety Policy.

🗑️ Dangerous Substances

Complete building (Complete Building)

1 / 1

- ✔ Are the general fire precautions adequate to address the hazards associated with dangerous substances used or stored within the premises? **N/A**
- ✔ If the above applies, has a specific risk assessment been carried out, as required by the Dangerous Substances and Explosive Atmospheres Regulations 2002? **N/A**

There were no dangerous substances present on site.

⚠️ Other Significant Fire Hazards That Warrant Consideration Including Process Hazards That Impact on General Fire Precautions

Complete building (Complete Building)

1 / 1

- ✔ Are there other Significant Fire Hazards That Warrant Consideration Including Process Hazards That Impact on General Fire Precautions? **N/A**

See sections below re fire hazards.

The building has Estate Safety checks in place which includes the reduction and elimination of fire hazards.

Generally housekeeping is very good with bicycles being the main issue on escape routes.

Where there is plenty of space such as on walkways and underneath staircases this is not so much a concern compared to the small stairways off the main walkway that need to be monitored and managed in accordance with the Council's zero tolerance policy.

FIRE PROTECTION MEASURES

Means of Escape

Complete building (Complete Building) **3 x 2 = 6 | Substantial Risk**

1 / 2

✘ **Suitable protection of escape routes including provision of fire doors/hatches including to roof voids, individual dwellings/flats, compartment doors, riser cupboard doors and risk rooms?** **No**

👁 Finding

👤 SC ⌚ Aug 16, 2020, 11:16:34 AM

A recent survey of flat entry doors and the door furniture revealed that the doors are non fire rated doors. The majority of doors whether notional or non-fire rated are provided with a combination of letterboxes, spyglasses, and some are fitted with Georgian wired glazing but many areas were not fire rated glazing or could not be determined. An inspection of the storage cupboard doors revealed that the doors are non fire rated and the integrity of the door set and therefore the escape route may be compromised.

Likelihood: Moderate **Consequence: High Harm**

✅ Tasks **3**

Tenanted Flat entry doors-non FR

All CCC tenant doors in a recent survey have been identified as HIGH priority as they are non fire rated flat entry doors and need to be replaced with an FD30S standard door.

Location Complete building (Estates & Facilities, Princess Court, Coronation Street, Cambridge)

High Priority — complete within 9 months to reduce the risk by 33% 👤 SC

Assigned Users 👤 John Conroy

Leaseholder Flat entry doors-non FR

All leasehold doors in a recent survey have been identified as HIGH priority as they are non fire rated flat entry doors and need to be replaced with an FD30S standard door.

Location Complete building (Estates & Facilities, Princess Court, Coronation Street, Cambridge)

High Priority — complete within 9 months to reduce the risk by 33% 👤 SC

Assigned Users 👤 John Conroy

Storage cupboard door upgrade programme

All store cupboard doors has on escape routes have been identified as a non fire rated door and needs to be included in the current storage cupboard door upgrade programme.

Location Complete building (Estates & Facilities, Princess Court, Coronation Street, Cambridge)

Medium Priority — complete within 12 months to reduce the risk by 34% 👤 SC

Assigned Users 👤 John Conroy

✔ **Is it considered that the premises are provided with reasonable means of escape in case of fire?** **Yes**

✔ **Adequate design of escape routes?** **Yes**

✔ **Adequate provision of exits?** **Yes**

✔ **Exits easily and immediately openable where necessary?** **N/A**

✔ **Fire exits open in direction of escape where necessary?** **N/A**

✔ **Avoidance of sliding or revolving doors as fire exits where necessary?** **N/A**

✔ **Satisfactory means for securing exits?** **Yes**

✔ **Reasonable distances of travel: Where there is a single direction of travel?** **Yes**

✔ **Reasonable distances of travel: Where there are alternative means of escape?** **Yes**

✔ **Suitable fire precautions for all inner rooms?** **N/A**

✔ **Escape routes unobstructed?** **Yes**

✔ **It is considered that the premises are provided with reasonable arrangements for means of escape for disabled people.** **N/A**

Complete building (Complete Building) **2 x 1 = 2 | Tolerable Risk**

2 / 2

✘ **Suitable protection of escape routes including provision of fire doors/hatches including to roof voids, individual**

Ventilator breaching escape staircase.

Likelihood: Low **Consequence: Medium Harm**

✔ Tasks **1**

Ventilator breaching escape staircase.

There is ventilator in the external wall outside flats: 8,9,21,26,30,31,32 & 49. Depending on its position inside the flat it may allow smoke to enter the stair in the event of a fire. It is noted that there is some ventilation to open air but this is not at the head of the stair and smoke logging may occur.

It is recommended that this is investigated and if necessary the ventilation re routed or an appropriate fire rated block fitted.

Location Complete building (Estates & Facilities, Princess Court, Coronation Street, Cambridge)

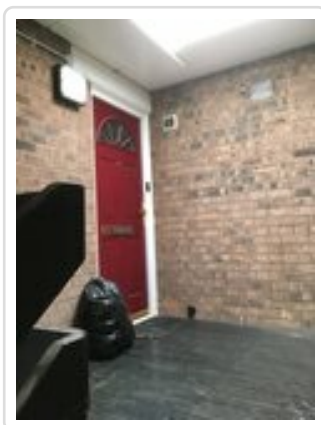
Medium Priority — complete within 9 months to reduce the risk by 100% 👤 SC

Assigned Users 👤 John Conroy

🖼 Images **6**



IMG_6392
— Jul 25, 2020, 3:14:40 PM



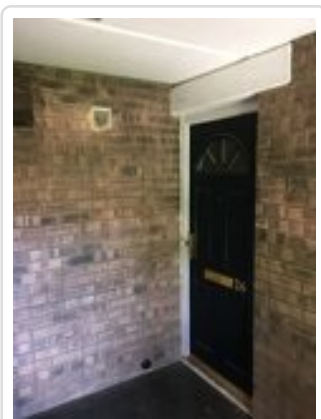
IMG_6369
— Jul 25, 2020, 3:14:40 PM



IMG_6353
— Jul 25, 2020, 3:14:39 PM



IMG_6349
— Jul 25, 2020, 3:14:39 PM



IMG_6346
— Jul 25, 2020, 3:14:39 PM



IMG_6331
— Jul 25, 2020, 3:14:39 PM

The escape for most of the flats above ground floor is via generally semi-open routes which provides venting for smoke, however, also see comment above re 'escape routes' regarding impact of a fire on these routes. This includes the staircases from ground to first floor flats and those serving 2nd/4th flats off the walkways at 3rd floor.

The main staircases at each end running the full height of the building are open at all levels except the head of the stair. The walkways are also ventilated at each end of the block.

There are skylights at the head of the escape stairs which appear to be openable. These could be investigated further to provide smoke ventilation by adaptation or modification to enable them to be opened manually (remotely) or by AOV.

The travel distances on the walkways are acceptable, however, they are undivided. These escape routes are neither enclosed corridors or fully open balconies (as per technical guidance). There might be some benefit in providing doors across the walkway where the short staircases emerge on the walkway but given smoke from a fire below could affect both sides of the partition it is not clear if these would be effective compared to fire detection.

A programme is in place (2020-21: delayed by Covid-19) to replace all tenant flat entrance doors and to address leasehold doors. There are no other openings onto the escape routes which also helps to reduce the likelihood of them being affected by a fire. It is also proposed to replace store cupboard doors with FD30 standard doors which will also reduce the opportunity for arson.

🔒 Measures to Limit Fire Spread and Development

Complete building (Complete Building) **2 x 2 = 4 | Moderate Risk**

1 / 1

⊗ **It is considered that there is: Compartmentation of a reasonable standard including external faces of buildings** **No**

Compartmentation does not appear to be to the required fire resistance. Following fires in other blocks of similar design breaches in the service riser became apparent. The design of the riser in this block is very similar and likely to present the same issues

Likelihood: Moderate **Consequence: Medium Harm**

Tasks 2

- Compartmentation to provide 30 minutes fire resistance in blocks up to 5 storeys

There is a requirement for compartmentation to provide at least 30 minutes fire resistance in blocks up to 5 storeys.

Location Complete building (Estates & Facilities, Princess Court, Coronation Street, Cambridge)

High Priority — complete within 9 months to reduce the risk by 50% **SC**

Assigned Users **John Conroy**

- Structural investigation-breach of compartment wall/floor

Further structural investigation is required to ascertain the consequence of the compartmentation breach, to establish if the following actions are required:

- Type 2, 3 or 4 Fire Risk Assessment.
- Change to the Fire Strategy of the building from “Stay Put” to Simultaneous Evacuation
- Installation of Automatic Fire Detection System

Location Complete building (Estates & Facilities, Princess Court, Coronation Street, Cambridge)

High Priority — complete within 3 months to reduce the risk by 50% **SC**

Assigned Users **John Conroy**

✔ **It is considered that there is: Reasonable limitation of linings that might promote fire spread** **Yes**

✔ **As far as can reasonably be ascertained, fire dampers are provided as necessary to protect critical means of escape against passage of fire, smoke and combustion products in the early stages of a fire?** **N/A**

A flat fire in Hanover Court early in 2020 and in block 4 at Kingsway flats in May 2020 resulted in smoke and fire spread through the service riser. The outcomes of a subsequent specific FRA (see 'Evidence') included a review of the stay put policy, installation of linked early warning of fire and further surveys of service risers in all blocks at Kingsway flats and Hanover/Princess Courts (as the buildings are from the same era and very similar in design) to provide solutions to the lack of fire resistance/compartmentation.

This work is being treated as high priority by CCC alongside upgrading flat entrance doors to FD30S standard.

Resident balconies are not constructed of combustible materials. From external ground floor observations the use of balconies does not appear to present additional fire hazards.

Escape routes are mostly sterile with non combustible linings (Believed to be Class O/B-s3,d2).

💡 Emergency Escape Lighting

Complete building (Complete Building)

1 / 1

✔ **Reasonable standard of emergency escape lighting system provided?** **Yes**

Emergency lighting is provided throughout the communal areas and appeared to be in working order. The assessor was not able to verify its effectiveness at time of assessment.

Annual test: May 2020.

It is not certain if monthly testing is being carried out - see section below

🔗 Fire Safety Signs and Notices

Complete building (Complete Building) **1 x 1 = 1 | Trivial Risk**

1 / 2

✘ **Reasonable standard of fire safety signs and notices?** **No**

👁 Finding

SC © Jul 26, 2020, 1:09:15 PM

There was no signage indicating the use of lifts

Likelihood: Low **Consequence: Low Harm**

Tasks 1

- Lift Signage-do not use

Signage indicating the use of lifts should be provided. Where lifts are not to be used in the event of fire provide

'in the event of fire do not use lift' signage at each floor level and in accordance with current standards.

Location Complete building (Estates & Facilities, Princess Court, Coronation Street, Cambridge)

Low Priority — complete within 3 months to reduce the risk by 100% SC

Assigned Users John Conroy

Images 1



IMG_6338
— Jul 26, 2020, 1:09:16 PM

Complete building (Complete Building) **2 x 1 = 2 | Tolerable Risk**

2 / 2

✘ Reasonable standard of fire safety signs and notices? **No**

Finding

SC Aug 16, 2020, 11:28:17 AM

General fire exit signage review.

Likelihood: Low **Consequence: Medium Harm**

Tasks 1

General fire exit signage review

The fire exit signage appears to be adequate. Some improved signage including pictogram style, locating specific levels and flats is to be reviewed in light of the changes to ADB (Grenfell Inquiry) through liaison with Cambridgeshire Fire & Rescue Service and residents.

This review could incorporate improvements to the exit signage. For example, signage to avoid confusion regarding staircases off the 3rd floor walkway which are non escape stairs is recommended (as at Kingsway flats).

Fire procedure notices detailing the stay put policy are located at the entrances to the block at ground floor level and on entrances to the walkways at 3rd floor.

Location Complete building (Estates & Facilities, Princess Court, Coronation Street, Cambridge)

Medium Priority — complete within 6 months to reduce the risk by 100% SC

Assigned Users John Conroy

Fire exit signage incorporates pictogram and text format.

The position and location of signage is generally satisfactory in terms of compliance and give the layout/design of the blocks but improvements could be made.

Means of Giving Warning in Case of Fire

Complete building (Complete Building) **3 x 1 = 3 | Moderate Risk**

1 / 1

✔ Reasonable manually operated electrical fire alarm system provided? **N/A**

✔ Automatic fire detection provided- Throughout the Premises? **N/A**

✔ Automatic fire detection provided- Part of the premises only? **N/A**

✘ Extent of automatic fire detection generally appropriate for the occupancy and fire risk? **No**

Finding

SC Jul 25, 2020, 4:22:29 PM

The premises should be provided with an appropriate fire warning system to a correct grade and with a correct detection level according to the occupancy, design and use of the building.

Likelihood: Low Consequence: High Harm

Tasks 1

Fire warning system-correct grade/detection

In light of recent findings concerning compartmentation (service risers) and flat entrance doors, subject to further investigations/survey, the premises should be provided with an appropriate fire warning system to provide early warning to residents of a fire in other parts of the building which could facilitate full evacuation of a specific area of the block.

Location Complete building (Estates & Facilities, Princess Court, Coronation Street, Cambridge)

High Priority — complete within 6 months to reduce the risk by 100% SC

Assigned Users John Conroy

Remote transmission of alarm signals? NA

This assessment has considered the communal areas where there is currently no fire alarm system or fire detection to initiate fire safety systems such as AOV.

Flats have only a smoke alarm in the hallways (LD3) and are due to have additional heat detection installed in kitchens/living area in 2020/21.

Where this is not an open plan area a smoke alarm is recommended for the living area providing LD2 coverage.

Following the fire at Kingsway flats and in Hanover Court earlier in 2020 and a specific fire risk assessment, the need to provide early warning to residents of a fire other than in their own dwelling has been identified. This is in conjunction with providing an interim measure until flat entrance doors are replaced with FD30S units and compartmentation work on service risers is completed.

A survey to determine fire alarm requirements will be required and is likely to link dwellings in particular off staircases that could become compromised by a fire due to the design and layout of the building. See comments above in 'Premises Description' and 'Evacuation Strategy'.

Manual Fire Extinguishing Appliances

Complete building (Complete Building)

1 / 1

Reasonable provision of portable fire extinguishers? N/A

Hose reels provided? N/A

Are all fire extinguishing appliances readily accessible? N/A

It is not appropriate to provide fire extinguishers in the communal areas.

Relevant Fire Extinguishing Systems

Complete building (Complete Building) 2 x 2 = 4 | Moderate Risk

1 / 1

Is a natural or mechanical smoke control system employed where necessary and is it appropriate for the location?

N/A

Is fixed firefighting equipment and fire safety systems provided where required and are they suitable for the risks identified? No

Finding

SC Aug 16, 2020, 11:38:50 AM

Provision of Premises Information Box

Likelihood: Moderate Consequence: Medium Harm

Tasks 1

Provide Premises Information Box (PIB)

The information for this block is contained in the PIB at Hanover Court. It is recommended that this block is provided with its own PIB so that fire service crews who may attend a fire in the building who are not from Cambridge, have the information they need for the block. (They are unlikely to be aware of the info being held in the Hanover Ct PIB).

Location Complete building (Estates & Facilities, Princess Court, Coronation Street, Cambridge)

Medium Priority — complete within 6 months to reduce the risk by 50% SC

Assigned Users John Conroy

A dry riser outlet is provided on the 3rd floor walkway at each end of the building with the inlet directly below.
A PIB for both Hanover and Princess Court is located at the Coronation Street end of the block adjacent the access staircase.
The DR was tested: January 2020 (6m) Annual test due: July 2020

Note. Straps and padlocks should secure the DR handwheel to prevent it being opened. The outlet at the north end was not thus secured.

It is recommended that the fire service are invited to use the DR's as part of a training/familiarisation exercise.

The lift has a fire fighters control switch located outside the doors at ground level - it is not clear if this is still operative. See section below.

↕ Other Relevant Fixed Systems and Equipment

Complete building (Complete Building)

1 / 1

✔ **Has suitable provision of fire-fighters switch(es) for high voltage luminous tube signs, etc been made?** N/A

There are high priority recommendations that have already been highlighted in May 2020 following the fire in Kingsway flats and the flat entrance door survey carried out in 2019. Progress to rectify these deficiencies is underway and has been delayed by the national Covid issue. New FD30S flat entrance doors are programmed to be fitted in 2020/21 in this block. The other linked fire safety issue is the design of the building and how a fire might affect escape routes along with the service riser potentially not being adequately fire separated (subject to survey). A combination of measures would address this given it is not known how a fire may affect the semi open escape routes and includes linked fire warning systems.

MANAGEMENT OF FIRE SAFETY

🏠 Procedures and Arrangements

Complete building (Complete Building) 3 x 2 = 6 | Substantial Risk

1 / 1

- ✔ **Competent person(s) appointed to assist in undertaking the preventive and protective measures (i.e. relevant general fire precautions)?** Yes
- ✔ **Is there a suitable record of the fire safety arrangements?** Yes
- ✔ **Appropriate fire procedures in place?** Yes
- ✔ **Are procedures in the event of fire appropriate and properly documented?** Yes
- ✔ **Are there suitable arrangements for summoning the fire and rescue service?** N/A
- ✘ **Are there suitable arrangements to meet the fire and rescue service on arrival and provide relevant information, including that relating to hazards to fire-fighters?** No

👁 Finding

👤 SC ⌚ Aug 16, 2020, 12:34:19 PM

Information available for firefighters on arrival at the premises requires updating.

Likelihood: Moderate Consequence: Medium Harm

✔ Tasks 1

Information to firefighters (PIB)

Ensure any premises information box (PIB) contains all information relevant to the emergency services. In particular in the case of the fire service, provide keys to the fire warning panel/s, relevant site and floor plans annotated with, or; separate details of hazards and risk rooms, as well as a vulnerability list where appropriate.

This should include evacuation arrangements and risks following and identified from PCFRA's and PEEP's.

The current plans date from October 2007. Once PCFRA's have been carried out any relevant information/PEEPS should be held in the PIB.

Following further liaison with CFRS additional plans/information relating to the layout/numbering of Kingsway flats might be required to be held in the PIB.

Location Complete building (Estates & Facilities, Princess Court, Coronation Street, Cambridge)

High Priority — complete within 6 months to reduce the risk by 100% 👤 SC

Assigned Users 👤 John Conroy

✔ **Are there suitable arrangements for ensuring that the premises have been evacuated?** N/A

✔ **Is there a suitable fire assembly point(s)?** N/A

✘ **Are there adequate procedures for evacuation of any disabled people who are likely to be present?** No

👁 Finding

👤 SC ⌚ Aug 16, 2020, 12:34:19 PM

Procedures for people with restricted mobility (PRM) and/or who are vulnerable to be confirmed through person cent red fire risk assessments.

Likelihood: Moderate Consequence: High Harm


Tasks 1

PRM procedures

An action point from the recent specific fire risk assessment is to establish if there are residents who need assistance to evacuate their flat given the suspension of the stay put policy.

On completion of this survey PEEPs maybe required for individual residents with copies kept in the premises information box (PIB).

Location Complete building (Estates & Facilities, Princess Court, Coronation Street, Cambridge)

High Priority — complete within 6 months to reduce the risk by 100%  SC

Assigned Users  John Conroy

- ✔ **Persons nominated and trained to use fire extinguishing appliances?** N/A
- ✔ **Persons nominated and trained to assist with evacuation, including evacuation of disabled people?** N/A
- ✔ **Appropriate liaison with fire and rescue service (e.g. by fire and rescue service crews visiting for familiarization visits)?** Yes
- ✔ **Routine in-house inspections of fire precautions (e.g. in the course of health and safety inspections)?** Yes

The need to assess for potentially vulnerable residents who may have difficulty escaping independantly has been highlighted following the fire in Kingsway.

A meeting to initiate a survey for PCFRA's has taken place.

Temporary fire procedure arrangements may be required to be put in place until upgrading of compartmentation and fire doors has been completed. In this interim period an early fire warning system extending beyond individual dwellings may also be installed as per Kingsway and subject to further surveys of the buildings compartmentation/means of escape that require a permanent linked fire warning system. Residents have been written to regarding fire door upgrading.

There are tenant representatives who have good liaison with Council Officers to ensure resident engagement.

With regard to changes in fire procedure, notices located at the ent rances to the block would need to be amended/changed and an assembly point should be considered to assist the fire service in establishing who is involved in any fire incident.

⌚ Training and Drills

Complete building (Complete Building)

1 / 1

- ✔ **Are all staff given adequate fire safety instruction and training on induction?** Yes
- ✔ **Are all staff given adequate periodic “refresher training” at suitable intervals?** Yes
- ✔ **Does all staff training provide information and instruction on the following: fire risks and fire safety measures in the premises, action in the event of fire, action on hearing the fire alarm , method and operation of manual call points, location and use of fire extinguishers, means for summoning the fire and rescue service, the identity of persons nominated to assist with evacuation and the identity of persons nominated to use fire extinguishing appliances** N/A
- ✔ **Are staff with special responsibilities (e.g. fire wardens) given additional training?** N/A
- ✔ **Are fire drills carried out at appropriate intervals?** N/A
- ✔ **When the employees of another employer work in the premises: Is their employer given appropriate information (e.g. on fire risks and general fire precautions)?** Yes
- ✔ **Is it ensured that the employees in the above question are provided with adequate instructions and information?** Yes

Contractors are subject to the fire safety and health and safety policies of the Council.

The caretaker has recieved fire awareness training as a CCC employee.



📁 Testing and Maintenance

Complete building (Complete Building) 2 x 1 = 2 | Tolerable Risk

1 / 1

- ✔ **Are the premises fire safety provisions adequately maintained?** Yes
- ✔ **Weekly testing and periodic servicing of fire detection and alarm system?** N/A
- ✘ **Monthly and annual testing routines for emergency escape lighting?** No

👁 Finding

 SC  Jul 26, 2020, 1:06:53 PM

The emergency lighting installation and equipment could not be confirmed as periodically inspected, tested and maintained

Likelihood: Low **Consequence: Medium Harm**

Tasks 1

- ☐ Emergency Lighting Monthly Testing

Ensure monthly function testing of all emergency lighting luminaires is undertaken. This is to establish the switching from normal to standby supply is working correctly.
Ensure a suitable system of defect reporting and repairs is in place and repairs/replacements are made in a timely fashion.

Location Complete building (Estates & Facilities, Princess Court, Coronation Street, Cambridge)

High Priority — complete within 3 months to reduce the risk by 100% **SC**

Assigned Users **John Conroy**

- ✔ **Annual maintenance of fire extinguishing appliances?** **N/A**
- ✔ **Periodic inspection of external escape staircases and gangways?** **Yes**
- ✘ **Weekly and monthly testing, six-monthly inspection and annual testing of fire-fighting lifts?** **No**

👁 Finding

SC ⌚ Jul 26, 2020, 1:06:54 PM

Firefighting lifts were not maintained and tested at prescribed intervals in accordance with current standards or records were not available to verify testing.

Likelihood: Low **Consequence: Medium Harm**

✔ Tasks 1

- Firefighting/evacuation lifts-maintained and tested

Where fitted ensure firefighting/evacuation lifts are maintained and tested at prescribed intervals in accordance with current standards with appropriate records being kept

Location Complete building (Estates & Facilities, Princess Court, Coronation Street, Cambridge)

High Priority — complete within 3 months to reduce the risk by 100% **SC**

Assigned Users **John Conroy**

- ✔ **Weekly testing and periodic inspection of sprinkler installations and smoke control systems?** **N/A**
- ✔ **Routine checks of final exit doors and/or security fastenings?** **N/A**
- ✔ **Annual inspection and test of lightning protection system?** **Yes**
- ✔ **Are suitable systems in place for reporting and subsequent restoration of safety measures that have fallen below standard?** **Yes**
- ✘ **Six-monthly inspection and annual testing of rising mains?** **No**

👁 Finding

SC ⌚ Jul 26, 2020, 1:06:53 PM

Security of DR outlet

Likelihood: Low **Consequence: Low Harm**

✔ Tasks 1

- Security of DR outlet

Where the DR is tested it should be ensured that the handwheel is secured to prevent malicious opening.

Location Complete building (Estates & Facilities, Princess Court, Coronation Street, Cambridge)

Low Priority — complete within 6 months to reduce the risk by 100% **SC**

Assigned Users **John Conroy**

🖼 Images 1



IMG_6335

— Jul 26, 2020, 1:06:53 PM

Arrangements are in put in place for all relevant tests for items in both the communal areas and individual dwellings by TSG.

Note. The door release buttons in the refuse rooms have manual over rides (green boxes) - these should be subject to regular testing

(suggest monthly with emergency lighting).

The lift (including the lift for hanover Ct) has a fire fighters switch to enable control of the lift. It is not clear if this is still effective. Given the height of the building this facility would be of use to the fire service.

Records

Complete building (Complete Building)

1 / 1

- ✔ **Appropriate records of: Fire drills?** N/A
- ✔ **Appropriate records of: Fire training?** N/A
- ✔ **Appropriate records of: Fire alarm tests?** N/A
- ✔ **Appropriate records of: Emergency escape lighting tests?** Yes
- ✔ **Appropriate records of: Maintenance and testing of other fire protection systems?** Yes

Records are kept centrally and electronically rather than on site.

The assessor did not have access to records.

This building is encompassed within Cambridge City Council's Fire Safety Policy and Fire Risk Management Strategy. See 'Evidence' for these documents.

There is liaison with the local fire protection officer (CFRS) and also with residents through leasehold representatives and CCC Estate Champions.

Management of fire safety has improved and the significant findings of fire risk assessments of recent assessments are being actioned with monitoring in place through the Fire Risk Management Group.

Future legislative requirements regarding flat entrance door inspections will need to be addressed.

➤ References

REFERENCES

Guidance in Support of Fire Safety Legislation

England and Wales

HM Government Guides to Fire Safety Risk Assessment, DCLG:

- Offices and Shops.
- Factories and Warehouses.
- Sleeping Accommodation.
- Residential Care Premises.
- Educational Premises.
- Small and Medium Places of Assembly.
- Large Places of Assembly.
- Theatres, Cinemas and Similar Premises.
- Open Air Events and Venues.
- Healthcare Premises.
- Animal Premises and Stables.
- Transport Premises and Facilities.
- Means of Escape for Disabled People.

Scotland

Scottish Government: Practical Fire Safety Guidance:

- Existing Non-Residential Premises.
- Existing Premises with Sleeping Accommodation.
- Care Homes.
- Healthcare Premises.
- The Evacuation of Disabled Persons from Buildings.

Northern Ireland

DHSSPS Sector Specific Guidance Documents:

- Sleeping Accommodation.
- Offices and Shops.
- Healthcare Premises.
- Theatres, Cinemas and Similar Premises.
- Small and Medium Places of Assembly.
- Open Air Events.

Guidance in Support of Building Regulations

England and Wales

- Approved Document B Vol 2, 2006 edition (as amended).

Scotland

- Technical Handbook 2019, Non-Domestic – Fire.

Northern Ireland

- Technical Booklet E 2012.

Fire Safety Design and Management

- BS 9991:2015. (Incorporating corrigendum No. 1.) Fire safety in the design, management and use of residential buildings. Code of practice.
- BS 9999:2017. Fire safety in the design, management and use of buildings. Code of practice.

Fire Detection and Fire Alarm Systems

- BS 5839-1:2017. Fire detection and fire alarm systems for buildings. Code of practice for design, installation, commissioning and maintenance of systems in non-domestic premises.
- BS 5839-6:2019. Fire detection and fire alarm systems for buildings - Code of practice for the design, installation, commissioning and maintenance of fire detection and fire alarm systems in domestic premises.
- BS 5839-8:2013. Fire detection and fire alarm systems for buildings - Code of practice for the design, installation, commissioning and maintenance of voice alarm systems.
- BS 5839-9:2011. Fire detection and fire alarm systems for buildings - Code of practice for the design, installation, commissioning and maintenance of emergency voice communication systems.

Fire Extinguishing Appliances

- BS 5306-1: 2006. Code of practice for fire extinguishing installations and equipment on premises - hose reels and foam inlets.

- BS 5306-3:2017. Fire extinguishing installations and equipment on premises. Commissioning and maintenance of portable fire extinguishers. Code of practice.
- BS 5306-8:2012. Fire extinguishing installations and equipment on premises - Selection and positioning of portable fire extinguishers - Code of practice.
- BS EN 3. Portable fire extinguishers.
- BS EN 671-3:2009. Fixed fire-fighting systems. Hose systems. Maintenance of hose reels with semi-rigid hose and hose systems with lay-flat hose.
- BS EN 1869:2019. Fire blankets.

Emergency Escape Lighting

- BS 5266-1:2016. Emergency lighting - Code of practice for the emergency lighting of premises.
- BS 5266-8:2004. (BS EN 50172: 2004). Emergency escape lighting systems.
- BS EN 1838:2013. Lighting applications - Emergency lighting.

Fire Safety Signs

- BS 5499-4:2013. Safety signs. Code of practice for escape route signing.
- BS ISO 3864-1:2011. Graphical symbols. Safety colours and safety signs. Design principles for safety signs and safety markings.
- BS EN ISO 7010:2020. Graphical symbols. Safety colours and safety signs. Registered safety signs.
- BS 5499-10:2014. Guidance for the selection and use of safety signs and fire safety notices.

Fixed Fire Extinguishing Systems and Equipment

- BS EN 12845:2015+A1 2019. Fixed fire-fighting systems. Automatic sprinkler systems. Design, installation and maintenance.
- BS 9990:2015. Non-automatic fire-fighting systems in buildings. Code of practice.

Lightning

- BS EN 62305-1:2011. Protection against lightning. General principles.
- BS EN 62305-2:2012. Protection against lightning. Risk management.
- BS EN 62305-3:2011. Protection against lightning. Physical damage to structures and life hazard.
- BS EN 62305-4:2011. Protection against lightning. Electrical and electronic systems within structures. Miscellaneous
- BS 7176:2007+A1: 2011. Specification for resistance to ignition of upholstered furniture for non-domestic seating by testing composites.
- BS 7273-4:2015. Code of practice for the operation of fire protection measures. Actuation of release mechanisms for doors.
- BS 7671:2018/A1:2020. Requirements for Electrical Installations. IET Wiring Regulations. Eighteenth Edition. BS 8899:2016. Improvement of fire-fighting and evacuation provisions in existing lifts. Code of practice.
- PAS 79:2012. Fire risk assessment - Guidance and a recommended methodology.

Published Guidance on Control of Contractors

- Standard Fire Precautions for Contractors Engaged on Crown Works, Department of Environment, HMSO.
 - Fire Prevention on Construction Sites. Fire Protection Association.
 - Fire Safety in Construction. HSG168 (2nd edition) HSE.
-

MA11229

Princess & Hanover
Calculations

May 2021





Project		Princess & Hanover		Job Ref.		MA11229	
Section		Introduction & loading		Sheet no./rev.			
Calc. by	Date						
BS	May 21						

Introduction

Millward was instructed by the Cambridge City Council to review the structural stability and capacity of the building for accidental loading due to gas explosion.

The calculations has been carried out based on 34kN/m² accidental design load, in accordance with BS5628-1 and Part 3 - Building Regulation.

In accordance with the noted codes, there are three routes through design for accidental damage.

Option 1 – Where there are no vertical ties in the panels nor horizontal ties within the screed on the floors. All structural members unless designed to be protected members are at risk and must be assumed to be lost following an accidental event.

Options 2 – Where the building only has horizontal ties, the building must be examined for the effect of removal of vertical members to predict the extent of damage.

Option 3 – Where the building is fully tied and has both horizontal and vertical ties, for which no removal checks required.

No vertical ties are present in the panels nor are there any horizontal ties in the floors. Therefore, the building will have to be reviewed for option 1, for which a loss of member and panel check is required for the accidental damage load.

The Hanover and Princess buildings are both masonry structures, consisting of precast concrete floors and roof with no vertical or horizontal ties present other than the precast concrete floor built into the masonry walls.

It has been understood that the building was constructed in the late 1960s prior to the Ronan Point accident which brought into force the need to check the robustness of the structural design for an accidental load of 34kN/m² into the building regulations 1970.

Existing plan drawings of the apartment are not available. However, the dimensions have been compared to the available drawings on Kingsway apartment blocks (Included in the calculation package) which is of the same, architectural design and closely matches to surveyed dimensions of Princess and Hanover.



Project		Princess & Hanover		Job Ref.		MA11229	
Section		Introduction & loading		Sheet no./rev.			
Calc. by	Date						
BS	May 21						

A number of typical wall panels have been considered to the top floor and also the lower two floors. The lower floors will have pre-compressive loads from the wall and floors above which will help resist the blast load from an explosion, for the purpose of these design checks external wind loads have been ignored.

All of the wall panels fail due to an accidental load of 34kN/m^2 . The degree of failure varies from a factor of 1.926 to the lower floor up to 22.565 to the upper floors. These failures are significant and whilst due to the lack of structural information it is not possible to determine or predict the probable extent of the damage it is reasonable to assume that this would result in a progressive collapse of the building that would be beyond the acceptable limits of the building regulations.

The loss of a supporting wall would result in the collapse of the supported precast floor units above on either side and also some if not all of the wall to the storey above. This in turn could result in further progressive collapse due to inadequate support of the walls/floors above and additional/impact loads of the collapsing walls and floors onto the lower storey structures.

It is therefore concluded that the structure is unable to support the required accidental load and that based upon these design checks it is recommended that all gas appliances are removed from the buildings.



Project		Princess & Hanover		Job Ref.		MA11229	
Section		Introduction & loading		Sheet no./rev.			
Calc. by	Date						
BS	May 21						

Loading

Roof

Single Ply Membrane	=	0.25kN/m ²
Insulation	=	0.10kN/m ²
PC Planks(150mm)	=	3.0kN/m ²
Ceiling	=	0.20kN/m ²
Snow	=	0.5kN/m ²
Imposed	=	1.5kN/m ²

Precast Concrete Floor

150mm thick Beam & Block Floor	=	3.0kN/m ²
75mm sand cement Screed	=	1.80kN/m ²
Ceiling	=	0.20kN/m ²
Imposed	=	1.50kN/m ²

External Wall

Brickwork	=	2.10kN/m ²
Blockwork	=	1.80kN/m ²
Plaster	=	0.20kN/m ²

Internal Walls

Brickwork 220mm	=	4.4kN/m ²
Plaster	=	0.20kN/m ²

Accidental design load	=	34kN/m ²
------------------------	---	---------------------



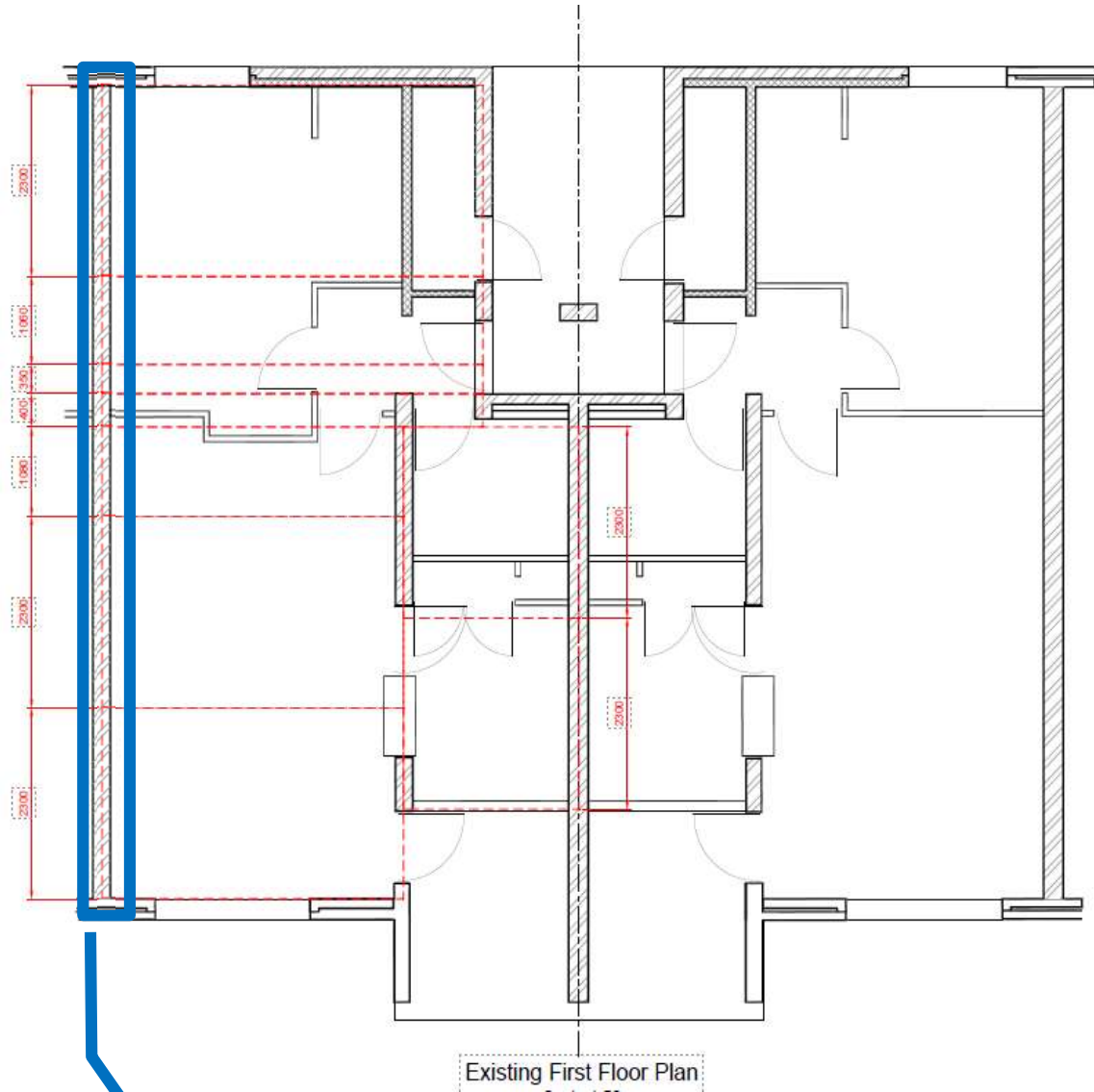
Project		Princess & Hanover		Job Ref.		MA11229	
Section		Introduction & loading		Sheet no./rev.			
Calc. by	Date						
BS	May 21						

Floor	Panel	Utilisation Factor
7	Side – 10m Cavity	8.367
1	Side – 10m Cavity	1.959
Ground	Side – 10m Cavity	1.926
7	Party –7.32m	7.803
1	Party –7.32m	2.289
Ground	Party –7.32m	2.827
7	Front -4m	22.052
1	Front -4m	7.781
Ground	Front -4m	7.523
7	Internal -2.55m	22.565
1	Internal -2.55m	6.814
Ground	Internal -2.55m	12.075




Project		Princess & Hanover		Job Ref.	
Section		Introduction & loading		MA11229	
Calc. by	Date				
BS	May 21				

Kingsway first floor plan



Examined panel

	External wall - Side elevation 10m	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
		Calc No	
	Page No	1	

Masonry Wall Panel Designer MAX V2.24 (Build 237) Copyright © Computer and Design Services Ltd.

MATERIAL AND DESIGN DATA

Material properties

<i>Data item</i>	<i>Near leaf</i>	<i>Far leaf</i>	<i>Units</i>
Masonry unit Properties			
Masonry unit product	User defined	User defined	-
Masonry unit type	Clay brick	Clay brick	-
Water absorption	7% - 12%	7% - 12%	%
Unit mean compressive strength	20.0	20.0	N/mm ²
Unit minimum width as tested	102.5	102.5	mm
Unit height as tested	65.0	65.0	mm
Unit height as built	(laid normal) 65.0	(laid normal) 65.0	mm
Density of wall / leaf as built	15.0	15.0	kN/m ³
Mortar property			
Mortar selection	Designated	Designated	-
Mortar designation	M4 (iii)	M4 (iii)	-

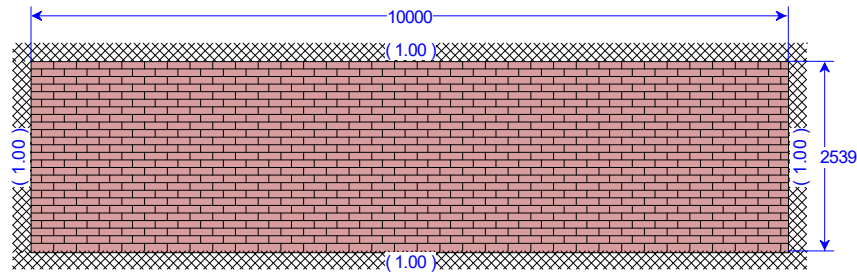
Partial safety factors for material strength

<i>Data item</i>	<i>Near leaf</i>	<i>Far leaf</i>
Partial safety factors		
Reinforcement tension	1.15	1.15
Masonry flexural tension	3.00	3.00
Masonry compression	3.50	3.50
Masonry shear	2.50	2.50
Masonry ties	3.50	3.50

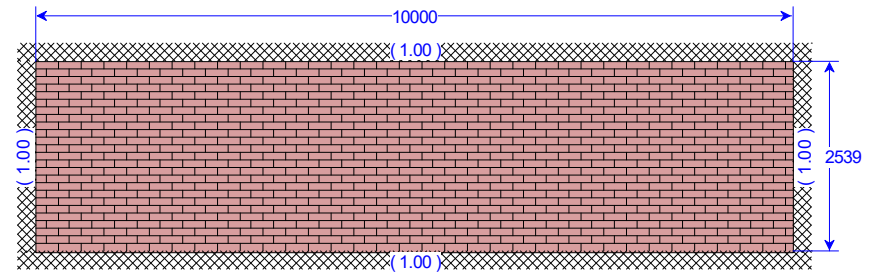
Calculation options

<i>Data item</i>	<i>Options</i>
Section analysis	
Vertical load capacity check	Yes
Include eccentricity due to slenderness	Yes
Section resistance moment option (Near/Far)	
Top edge	Cracked / Cracked
Mid height	Cracked / Cracked
Bottom edge	Cracked / Cracked
Dimension and deflection limits	
Design code	BS 5628-1 and 2:2005
Maximum slenderness ratio	27
Limiting dimensions check	Yes
Minimum span/deflection ratio	250
Minimum cantilever/deflection ratio	125
Maximum absolute deflection (mm)	20.00

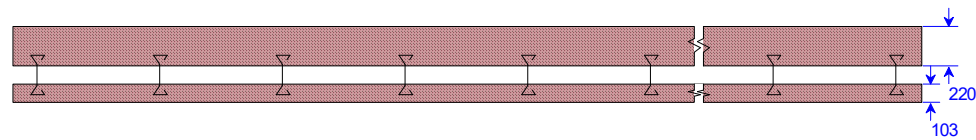
Notes:



Near leaf



Far leaf



Sectional plan

Note: Figures in brackets eg: (1.00) shown in elevation indicate user defined proportional fixity/continuity factor applied before allowing for openings.

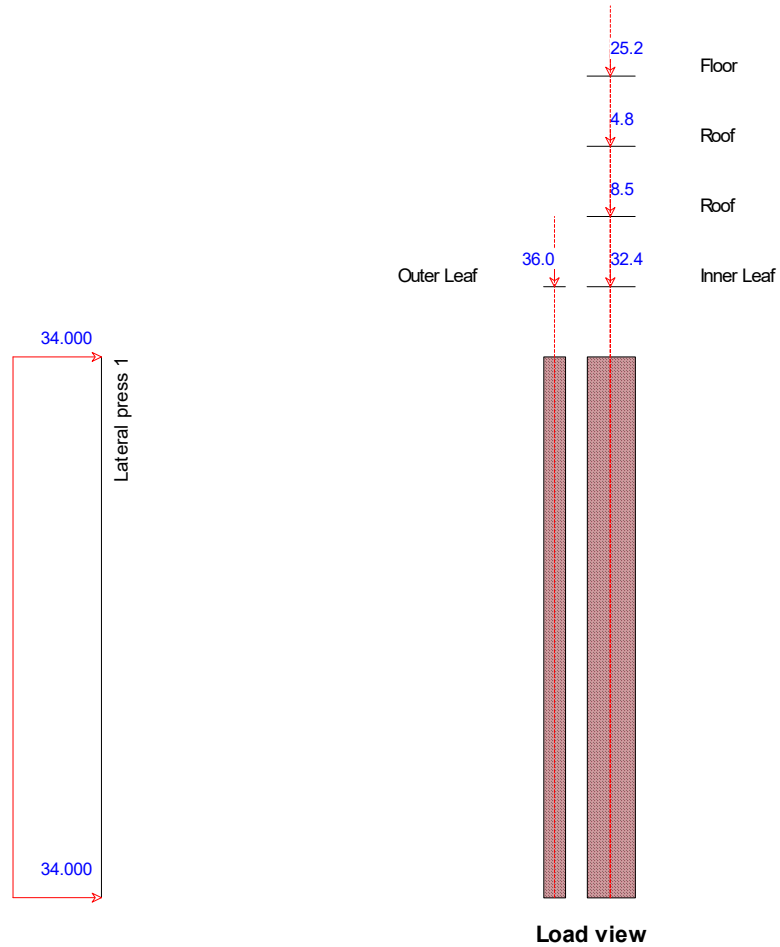



Masonry Wall Panel Designer MAX V2.24 (Build 237)
Copyright © Computer and Design Services Ltd.


External wall - Side elevation 10m

Job No	MA11229
Job Ref	
Designed By	
Checked By	
Date	24/ 5/2021
Revision No	
Calc No	
Page No	2

Units
 Vertical load - kN/m
 Eccentricity - mm
 Lateral pressure - kN/m²



	External wall - Side elevation 10m	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
		Calc No	
		Page No	3

	External wall - Side elevation 10m	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
	Calc No		
	Page No	4	

Masonry Wall Panel Designer MAX V2.24 (Build 237) Copyright © Computer and Design Services Ltd.

<i>Data item</i>	<i>Near</i>	<i>Far</i>
Bed joint reinforcement	No	No
DPC - top	No	No
DPC - bottom	No	No

Note:

- 1.For details of masonry units, bed joint reinforcement and damp proof course refer to 'Material and design data'
- 2.For details of wall ties (if specified) refer to 'Concise' or 'Detailed' report.

Masonry characteristic strengths

<i>Description</i>	<i>Near</i>	<i>Far</i>	<i>Units</i>	<i>Description</i>	<i>Near</i>	<i>Far</i>	<i>Units</i>
Design code	BS 5628-1 and 2:2005			Shear			
Compression				Shear without compression	0.15	0.15	N/mm ²
Narrow brick wall factor	1.00	1.00	-	Shear friction coefficient	0.60	0.60	-
Compression on bed joints	5.00	5.00	N/mm ²	Limiting shear	1.40	1.40	N/mm ²
Compression // bed joints	5.00	5.00	N/mm ²	Vertical shear- bonded	0.50	0.50	N/mm ²
Flexure				Elastic modulus			
Horizontal span	1.10	1.10	N/mm ²	Short term	4.50	4.50	kN/mm ²
Vertical span	0.40	0.40	N/mm ²	Long term	2.25	2.25	kN/mm ²

Characteristic vertical loads

Load category name	Near		Far	
	Load (kN/m)	Ecc. mm	Load (kN/m)	Ecc. mm
Dead load 1	36.000	0.000	32.400	0.000
Dead load 2			8.520	0.000
Imp. Load 1			4.800	0.000
Imp. Load 2			25.200	0.000

Characteristic lateral wind pressure

Category name	Pres. top kN/m ²	Pres. Bottom kN/m ²
Lateral press 1	34.000	34.000


Characteristic lateral line load

Category name	Load kN/m	Height from bottom mm

Note: For details of more than two loads please refer detailed report

Summary results (critical load combinations)

<i>Description</i>	<i>Wall</i>	<i>Status</i>	<i>Units</i>	<i>Description</i>	<i>Near</i>	<i>Far</i>	<i>Status</i>	<i>Units</i>
Lateral load capacity	24.712		kN/m ²	Max. slenderness	27	27		
Design uniform load	47.600		kN/m ²	Actual	8.656	8.656		
Utilisation	1.926	Fail		Utilisation	0.321	0.321	Pass	
Load combination	0.90D+1.40Lp1							
Limiting dimension / area								
Allowable	11000		mm					
Actual	10000		mm					
Utilisation	0.909	Pass						

	External wall - Side elevation 10m - First Floor	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
		Calc No	
		Page No	1

Masonry Wall Panel Designer MAX V2.24 (Build 237) Copyright © Computer and Design Services Ltd.

MATERIAL AND DESIGN DATA

Material properties

<i>Data item</i>	<i>Near leaf</i>	<i>Far leaf</i>	<i>Units</i>
Masonry unit Properties			
Masonry unit product	User defined	User defined	-
Masonry unit type	Clay brick	Clay brick	-
Water absorption	7% - 12%	7% - 12%	%
Unit mean compressive strength	20.0	20.0	N/mm ²
Unit minimum width as tested	102.5	102.5	mm
Unit height as tested	65.0	65.0	mm
Unit height as built	(laid normal) 65.0	(laid normal) 65.0	mm
Density of wall / leaf as built	15.0	15.0	kN/m ³
Mortar property			
Mortar selection	Designated	Designated	-
Mortar designation	M4 (iii)	M4 (iii)	-

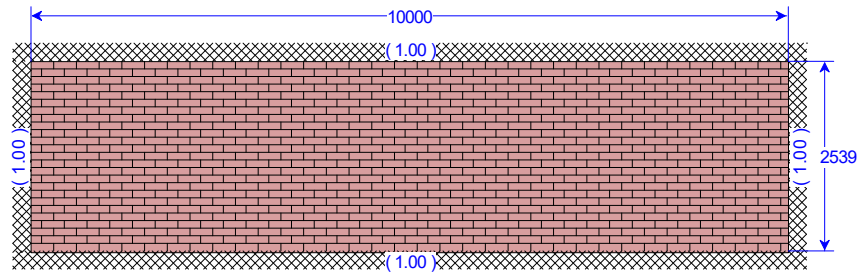
Partial safety factors for material strength

<i>Data item</i>	<i>Near leaf</i>	<i>Far leaf</i>
Partial safety factors		
Reinforcement tension	1.15	1.15
Masonry flexural tension	3.00	3.00
Masonry compression	3.50	3.50
Masonry shear	2.50	2.50
Masonry ties	3.50	3.50

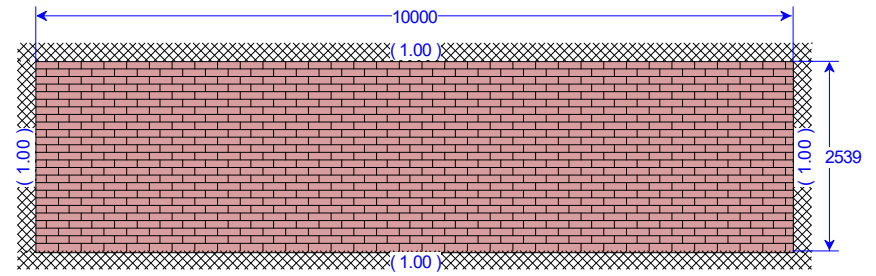
Calculation options

<i>Data item</i>	<i>Options</i>
Section analysis	
Vertical load capacity check	Yes
Include eccentricity due to slenderness	Yes
Section resistance moment option (Near/Far)	
Top edge	Cracked / Cracked
Mid height	Cracked / Cracked
Bottom edge	Cracked / Cracked
Dimension and deflection limits	
Design code	BS 5628-1 and 2:2005
Maximum slenderness ratio	27
Limiting dimensions check	Yes
Minimum span/deflection ratio	250
Minimum cantilever/deflection ratio	125
Maximum absolute deflection (mm)	20.00

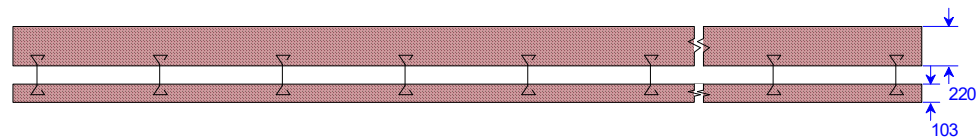
Notes:



Near leaf



Far leaf



Sectional plan

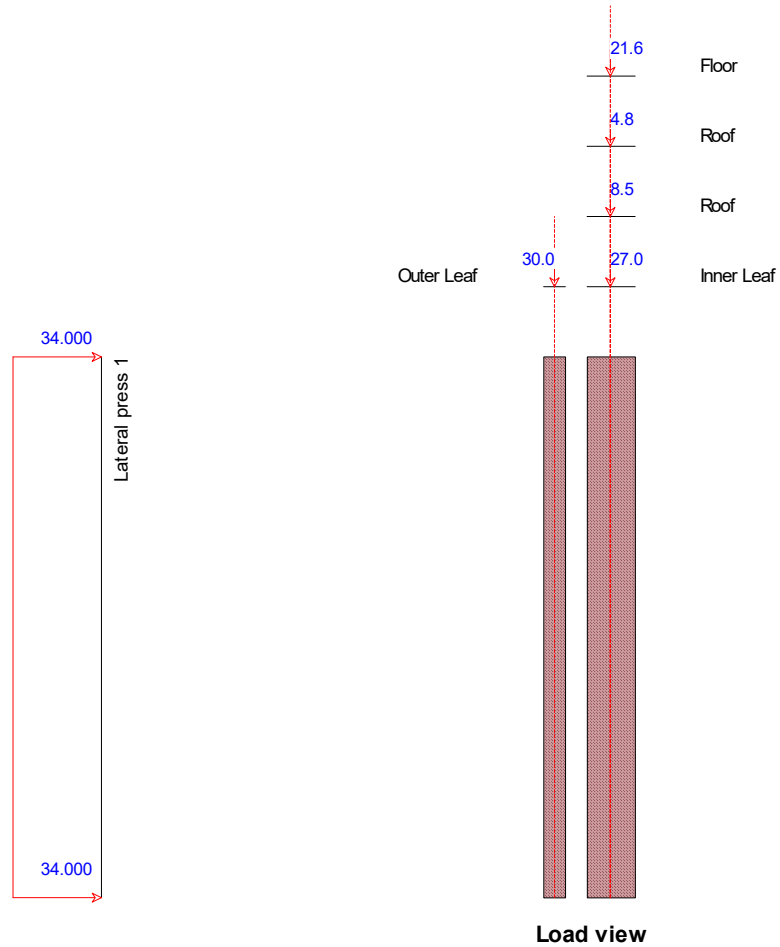
Note: Figures in brackets eg: (1.00) shown in elevation indicate user defined proportional fixity/continuity factor applied before allowing for openings.



External wall - Side elevation 10m -
First Floor


Job No	MA11229
Job Ref	
Designed By	
Checked By	
Date	24/ 5/2021
Revision No	
Calc No	
Page No	2

Units
 Vertical load - kN/m
 Eccentricity - mm
 Lateral pressure - kN/m²



External wall - Side elevation 10m -
 First Floor

Job No	MA11229
Job Ref	
Designed By	
Checked By	
Date	24/ 5/2021
Revision No	
Calc No	
Page No	3

	External wall - Side elevation 10m - First Floor	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
	Calc No		
	Page No	4	

Masonry Wall Panel Designer MAX V2.24 (Build 237) Copyright © Computer and Design Services Ltd.

<i>Data item</i>	<i>Near</i>	<i>Far</i>
Bed joint reinforcement	No	No
DPC - top	No	No
DPC - bottom	No	No

Note:

- For details of masonry units, bed joint reinforcement and damp proof course refer to 'Material and design data'
- For details of wall ties (if specified) refer to 'Concise' or 'Detailed' report.

Masonry characteristic strengths

<i>Description</i>	<i>Near</i>	<i>Far</i>	<i>Units</i>	<i>Description</i>	<i>Near</i>	<i>Far</i>	<i>Units</i>
Design code	BS 5628-1 and 2:2005			Shear			
Compression				Shear without compression	0.15	0.15	N/mm ²
Narrow brick wall factor	1.00	1.00	-	Shear friction coefficient	0.60	0.60	-
Compression on bed joints	5.00	5.00	N/mm ²	Limiting shear	1.40	1.40	N/mm ²
Compression // bed joints	5.00	5.00	N/mm ²	Vertical shear- bonded	0.50	0.50	N/mm ²
Flexure				Elastic modulus			
Horizontal span	1.10	1.10	N/mm ²	Short term	4.50	4.50	kN/mm ²
Vertical span	0.40	0.40	N/mm ²	Long term	2.25	2.25	kN/mm ²

Characteristic vertical loads

Load category name	Near		Far	
	Load (kN/m)	Ecc. mm	Load (kN/m)	Ecc. mm
Dead load 1	30.000	0.000	27.000	0.000
Dead load 2			8.520	0.000
Imp. Load 1			4.800	0.000
Imp. Load 2			21.600	0.000

Characteristic lateral wind pressure

Category name	Pres. top kN/m ²	Pres. Bottom kN/m ²
Lateral press 1	34.000	34.000


Characteristic lateral line load

Category name	Load kN/m	Height from bottom mm

Note: For details of more than two loads please refer detailed report

Summary results (critical load combinations)

<i>Description</i>	<i>Wall</i>	<i>Status</i>	<i>Units</i>	<i>Description</i>	<i>Near</i>	<i>Far</i>	<i>Status</i>	<i>Units</i>
Lateral load capacity	24.297		kN/m ²	Max. slenderness	27	27		
Design uniform load	47.600		kN/m ²	Actual	8.656	8.656		
Utilisation	1.959	Fail		Utilisation	0.321	0.321	Pass	
Load combination	0.90D+1.40Lp1							
Limiting dimension / area								
Allowable	11000		mm					
Actual	10000		mm					
Utilisation	0.909	Pass						

	External wall - Side elevation 10m - Roof	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
	Calc No		
	Page No	1	

Masonry Wall Panel Designer MAX V2.24 (Build 237) Copyright © Computer and Design Services Ltd.

MATERIAL AND DESIGN DATA

Material properties

<i>Data item</i>	<i>Near leaf</i>	<i>Far leaf</i>	<i>Units</i>
Masonry unit Properties			
Masonry unit product	User defined	User defined	-
Masonry unit type	Clay brick	Clay brick	-
Water absorption	7% - 12%	7% - 12%	%
Unit mean compressive strength	20.0	20.0	N/mm ²
Unit minimum width as tested	102.5	102.5	mm
Unit height as tested	65.0	65.0	mm
Unit height as built	(laid normal) 65.0	(laid normal) 65.0	mm
Density of wall / leaf as built	15.0	15.0	kN/m ³
Mortar property			
Mortar selection	Designated	Designated	-
Mortar designation	M4 (iii)	M4 (iii)	-

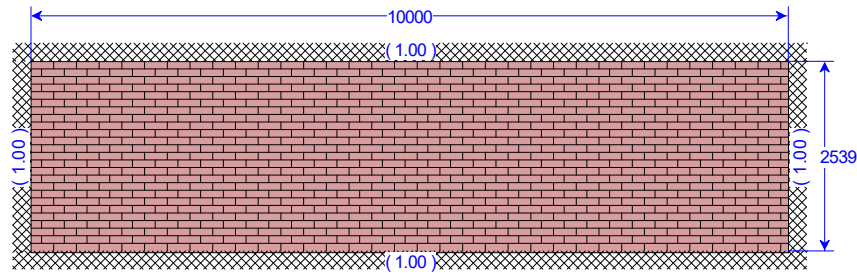
Partial safety factors for material strength

<i>Data item</i>	<i>Near leaf</i>	<i>Far leaf</i>
Partial safety factors		
Reinforcement tension	1.15	1.15
Masonry flexural tension	3.00	3.00
Masonry compression	3.50	3.50
Masonry shear	2.50	2.50
Masonry ties	3.50	3.50

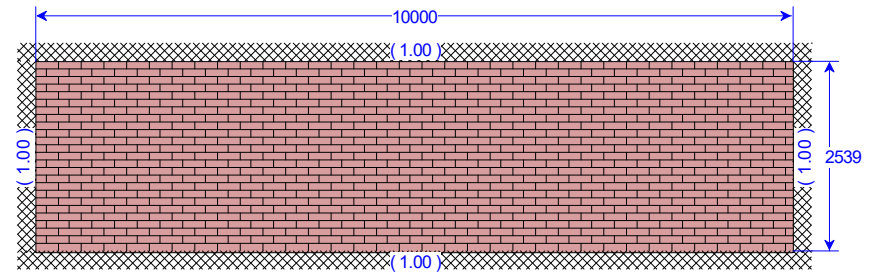
Calculation options

<i>Data item</i>	<i>Options</i>
Section analysis	
Vertical load capacity check	Yes
Include eccentricity due to slenderness	Yes
Section resistance moment option (Near/Far)	
Top edge	Cracked / Cracked
Mid height	Cracked / Cracked
Bottom edge	Cracked / Cracked
Dimension and deflection limits	
Design code	BS 5628-1 and 2:2005
Maximum slenderness ratio	27
Limiting dimensions check	Yes
Minimum span/deflection ratio	250
Minimum cantilever/deflection ratio	125
Maximum absolute deflection (mm)	20.00

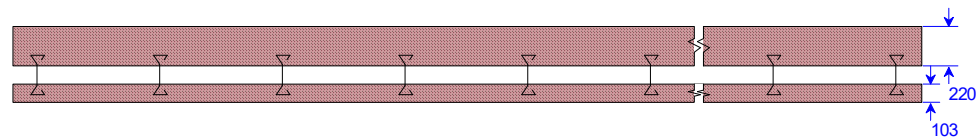
Notes:



Near leaf



Far leaf



Sectional plan

Note: Figures in brackets eg: (1.00) shown in elevation indicate user defined proportional fixity/continuity factor applied before allowing for openings.

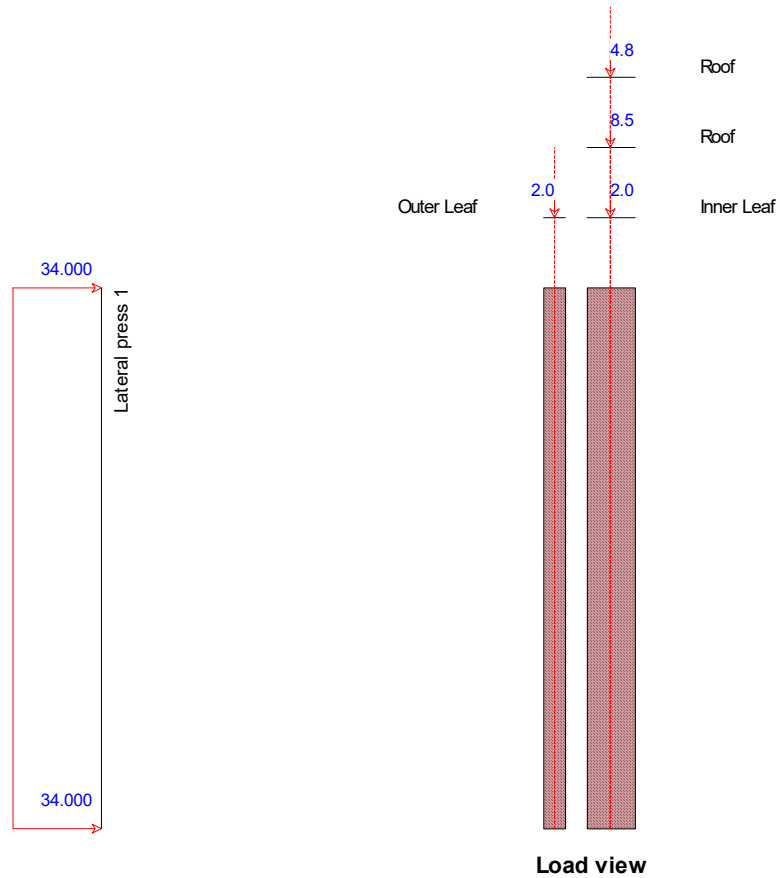


Masonry Wall Panel Designer MAX V2.24 (Build 237)
Copyright © Computer and Design Services Ltd.

External wall - Side elevation 10m -
Roof


Job No	MA11229
Job Ref	
Designed By	
Checked By	
Date	24/ 5/2021
Revision No	
Calc No	
Page No	2

Units
 Vertical load - kN/m
 Eccentricity - mm
 Lateral pressure - kN/m²



External wall - Side elevation 10m -
 Roof

Job No	MA11229
Job Ref	
Designed By	
Checked By	
Date	24/ 5/2021
Revision No	
Calc No	
Page No	3

	External wall - Side elevation 10m - Roof	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
	Calc No		
	Page No	4	

Masonry Wall Panel Designer MAX V2.24 (Build 237) Copyright © Computer and Design Services Ltd.

<i>Data item</i>	<i>Near</i>	<i>Far</i>
Bed joint reinforcement	No	No
DPC - top	No	No
DPC - bottom	No	No

Note:

- For details of masonry units, bed joint reinforcement and damp proof course refer to 'Material and design data'
- For details of wall ties (if specified) refer to 'Concise' or 'Detailed' report.

Masonry characteristic strengths

<i>Description</i>	<i>Near</i>	<i>Far</i>	<i>Units</i>	<i>Description</i>	<i>Near</i>	<i>Far</i>	<i>Units</i>
Design code	BS 5628-1 and 2:2005			Shear			
Compression				Shear without compression	0.15	0.15	N/mm ²
Narrow brick wall factor	1.00	1.00	-	Shear friction coefficient	0.60	0.60	-
Compression on bed joints	5.00	5.00	N/mm ²	Limiting shear	1.40	1.40	N/mm ²
Compression // bed joints	5.00	5.00	N/mm ²	Vertical shear- bonded	0.50	0.50	N/mm ²
Flexure				Elastic modulus			
Horizontal span	1.10	1.10	N/mm ²	Short term	4.50	4.50	kN/mm ²
Vertical span	0.40	0.40	N/mm ²	Long term	2.25	2.25	kN/mm ²

Characteristic vertical loads

Load category name	Near		Far	
	Load (kN/m)	Ecc. mm	Load (kN/m)	Ecc. mm
Dead load 1	2.000	0.000	2.000	0.000
Dead load 2			8.520	0.000
Imp. Load 1			4.800	0.000

Characteristic lateral wind pressure

Category name	Pres. top kN/m ²	Pres. Bottom kN/m ²
Lateral press 1	34.000	34.000

Characteristic lateral line load

Category name	Load kN/m	Height from bottom mm

Note: For details of more than two loads please refer detailed report

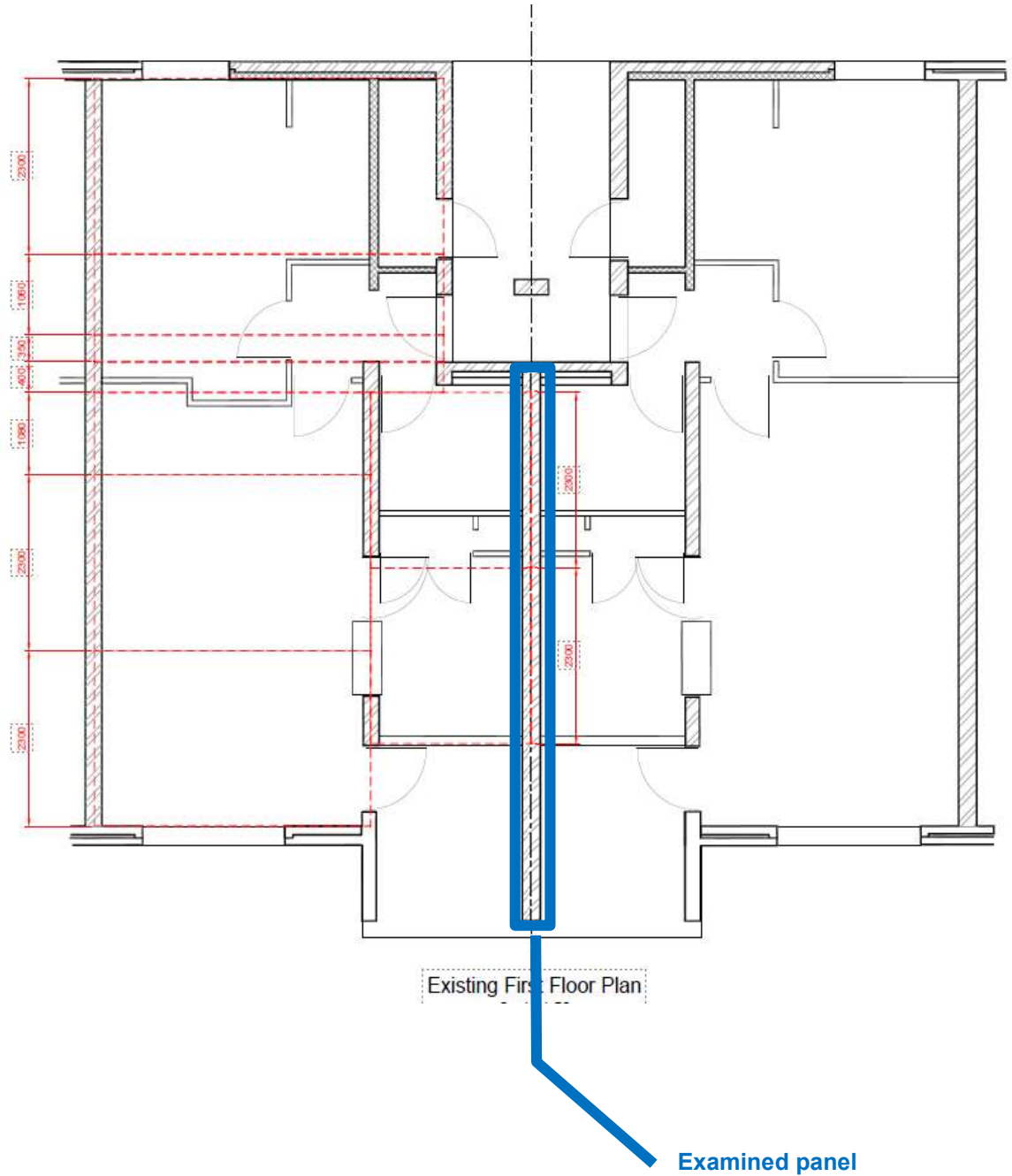
Summary results (critical load combinations)


<i>Description</i>	<i>Wall</i>	<i>Status</i>	<i>Units</i>	<i>Description</i>	<i>Near</i>	<i>Far</i>	<i>Status</i>	<i>Units</i>
Lateral load capacity	5.689		kN/m ²	Max. slenderness	27	27		
Design uniform load	47.600		kN/m ²	Actual	8.656	8.656		
Utilisation	8.367	Fail		Utilisation	0.321	0.321	Pass	
Load combination	0.90D+1.40Lp1							
Limiting dimension / area								
Allowable	11000		mm					
Actual	10000		mm					
Utilisation	0.909	Pass						



Project		Princess & Hanover		Job Ref.	
Section		Introduction & loading		MA11229	
Calc. by	Date				
BS	May 21				

Kingsway first floor plan



	Party Wall - Ground Floor	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
	Calc No		
	Page No		1

Masonry Wall Panel Designer MAX V2.24 (Build 237) Copyright © Computer and Design Services Ltd.

MATERIAL AND DESIGN DATA

Material properties

<i>Data item</i>	<i>Near leaf</i>	<i>Units</i>
Masonry unit Properties		
Masonry unit product	User defined	-
Masonry unit type	Clay brick	-
Water absorption	7% - 12%	%
Unit mean compressive strength	20.0	N/mm ²
Unit minimum width as tested	102.5	mm
Unit height as tested	65.0	mm
Unit height as built	(laid normal) 65.0	mm
Density of wall / leaf as built	15.0	kN/m ³
Mortar property		
Mortar selection	Designated	-
Mortar designation	M4 (iii)	-

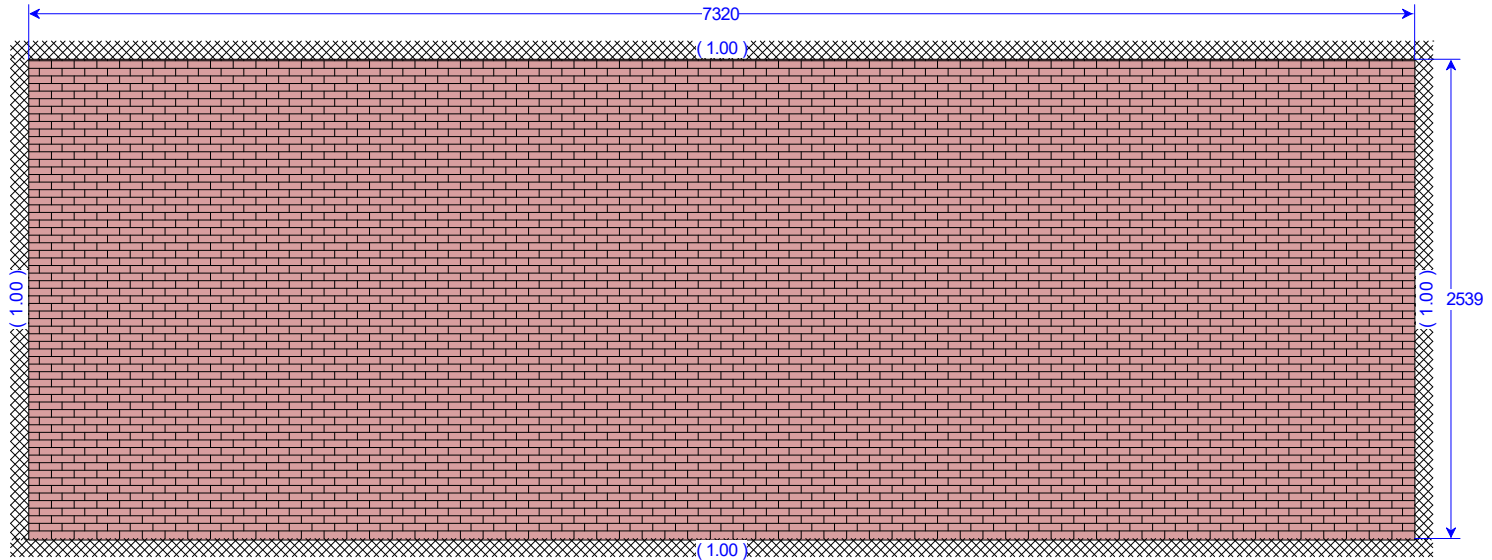
Partial safety factors for material strength

<i>Data item</i>	<i>Near leaf</i>
Partial safety factors	
Reinforcement tension	1.15
Masonry flexural tension	3.00
Masonry compression	3.50
Masonry shear	2.50
Masonry ties	3.50

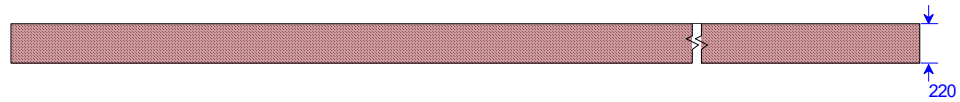
Calculation options

<i>Data item</i>	<i>Options</i>
Section analysis	
Vertical load capacity check	Yes
Include eccentricity due to slenderness	Yes
Section resistance moment option (Near/Far)	
Top edge	Cracked
Mid height	Cracked
Bottom edge	Cracked
Dimension and deflection limits	
Design code	BS 5628-1 and 2:2005
Maximum slenderness ratio	27
Limiting dimensions check	Yes
Minimum span/deflection ratio	250
Minimum cantilever/deflection ratio	125
Maximum absolute deflection (mm)	20.00

Notes:



Elevation



Sectional plan

Note: Figures in brackets eg: (1.00) shown in elevation indicate user defined proportional fixity/continuity factor applied before allowing for openings.

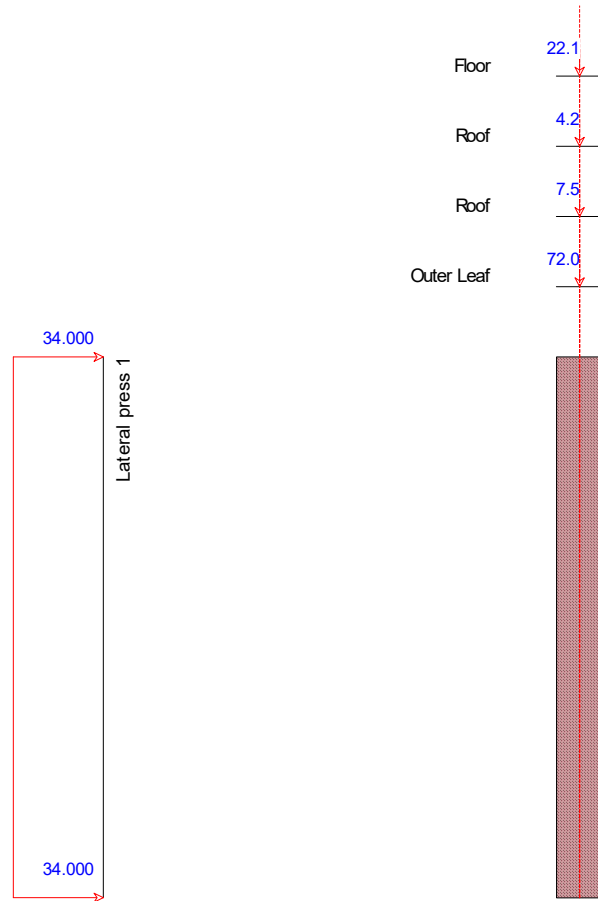


Masonry Wall Panel Designer MAX V2.24 (Build 237)
 Copyright © Computer and Design Services Ltd.

Party Wall - Ground Floor

Job No	MA11229
Job Ref	
Designed By	
Checked By	
Date	24/ 5/2021
Revision No	
Calc No	
Page No	2

Units
 Vertical load - kNm
 Eccentricity - mm
 Lateral pressure - kNm²




Load view



Party Wall - Ground Floor

Job No	MA11229
Job Ref	
Designed By	
Checked By	
Date	24/ 5/2021
Revision No	
Calc No	
Page No	3

	Party Wall - Ground Floor	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
	Calc No		
	Page No	4	

Masonry Wall Panel Designer MAX V2.24 (Build 237) Copyright © Computer and Design Services Ltd.

<i>Data item</i>	<i>Near</i>
Bed joint reinforcement	No
DPC - top	No
DPC - bottom	No

Note:

- For details of masonry units, bed joint reinforcement and damp proof course refer to 'Material and design data'
- For details of wall ties (if specified) refer to 'Concise' or 'Detailed' report.

Masonry characteristic strengths

<i>Description</i>	<i>Near</i>	<i>Units</i>	<i>Description</i>	<i>Near</i>	<i>Units</i>
Design code	BS 5628-1 and 2:2005		Shear		
Compression			Shear without compression	0.15	N/mm ²
Narrow brick wall factor	1.00	-	Shear friction coefficient	0.60	-
Compression on bed joints	5.00	N/mm ²	Limiting shear	1.40	N/mm ²
Compression // bed joints	5.00	N/mm ²	Vertical shear- bonded	0.50	N/mm ²
Flexure			Elastic modulus		
Horizontal span	1.10	N/mm ²	Short term	4.50	kN/mm ²
Vertical span	0.40	N/mm ²	Long term	2.25	kN/mm ²

Characteristic vertical loads

Load category name	Near	
	Load (kN/m)	Ecc. mm
Dead load 1	72.000	0.000
Dead load 2	7.460	0.000
Imp. Load 1	4.200	0.000
Imp. Load 2	22.050	0.000

Characteristic lateral wind pressure

Category name	Pres. top kN/m ²	Pres. Bottom kN/m ²
Lateral press 1	34.000	34.000


Characteristic lateral line load

Category name	Load kN/m	Height from bottom mm

Note: For details of more than two loads please refer detailed report

Summary results (critical load combinations)

<i>Description</i>	<i>Wall</i>	<i>Status</i>	<i>Units</i>	<i>Description</i>	<i>Near</i>	<i>Status</i>	<i>Units</i>
Lateral load capacity	16.837		kN/m ²	Max. slenderness ratio	27		
Design uniform load	47.600		kN/m ²	Actual	8.656		
Utilisation	2.827	Fail		Utilisation	0.321	Pass	
Load combination	1.40D+1.20I+1.40						
Limiting dimension / area							
Allowable	11000		mm				
Actual	7320		mm				
Utilisation	0.665	Pass					

	Party Wall - First Floor	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
	Calc No		
	Page No		1

Masonry Wall Panel Designer MAX V2.24 (Build 237) Copyright © Computer and Design Services Ltd.

MATERIAL AND DESIGN DATA

Material properties

<i>Data item</i>	<i>Near leaf</i>	<i>Units</i>
Masonry unit Properties		
Masonry unit product	User defined	-
Masonry unit type	Clay brick	-
Water absorption	7% - 12%	%
Unit mean compressive strength	20.0	N/mm ²
Unit minimum width as tested	102.5	mm
Unit height as tested	65.0	mm
Unit height as built	(laid normal) 65.0	mm
Density of wall / leaf as built	15.0	kN/m ³
Mortar property		
Mortar selection	Designated	-
Mortar designation	M4 (iii)	-

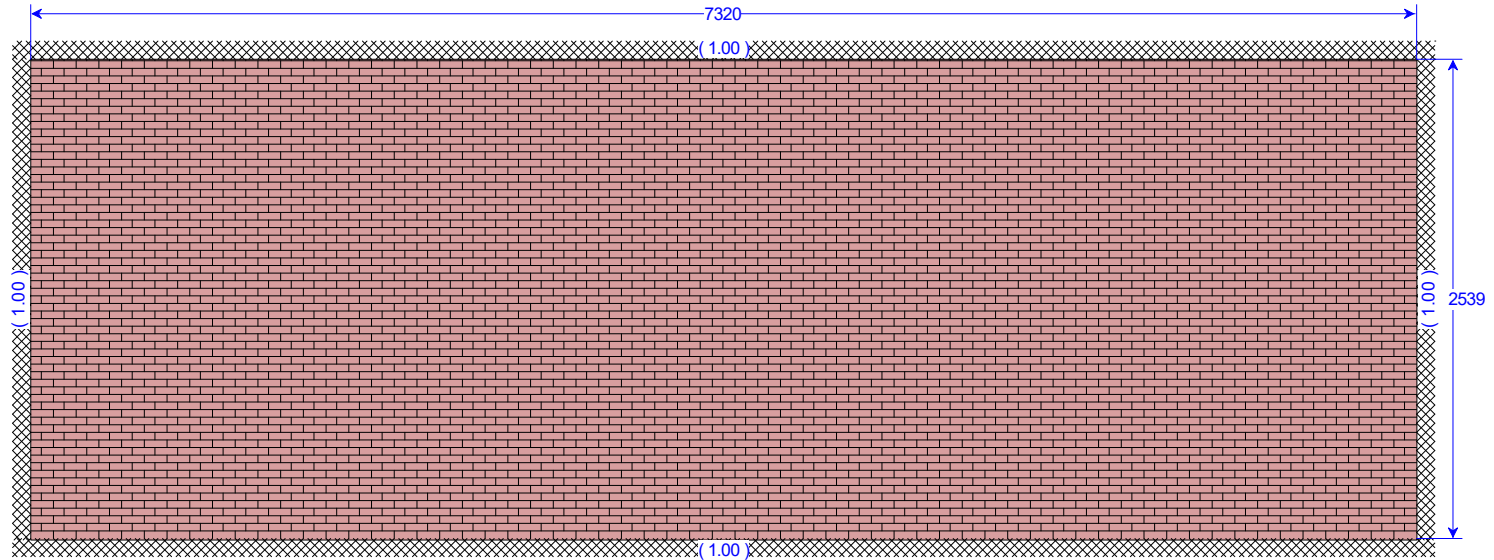
Partial safety factors for material strength

<i>Data item</i>	<i>Near leaf</i>
Partial safety factors	
Reinforcement tension	1.15
Masonry flexural tension	3.00
Masonry compression	3.50
Masonry shear	2.50
Masonry ties	3.50

Calculation options

<i>Data item</i>	<i>Options</i>
Section analysis	
Vertical load capacity check	Yes
Include eccentricity due to slenderness	Yes
Section resistance moment option (Near/Far)	
Top edge	Cracked
Mid height	Cracked
Bottom edge	Cracked
Dimension and deflection limits	
Design code	BS 5628-1 and 2:2005
Maximum slenderness ratio	27
Limiting dimensions check	Yes
Minimum span/deflection ratio	250
Minimum cantilever/deflection ratio	125
Maximum absolute deflection (mm)	20.00

Notes:



Elevation



Sectional plan

Note: Figures in brackets eg: (1.00) shown in elevation indicate user defined proportional fixity/continuity factor applied before allowing for openings.

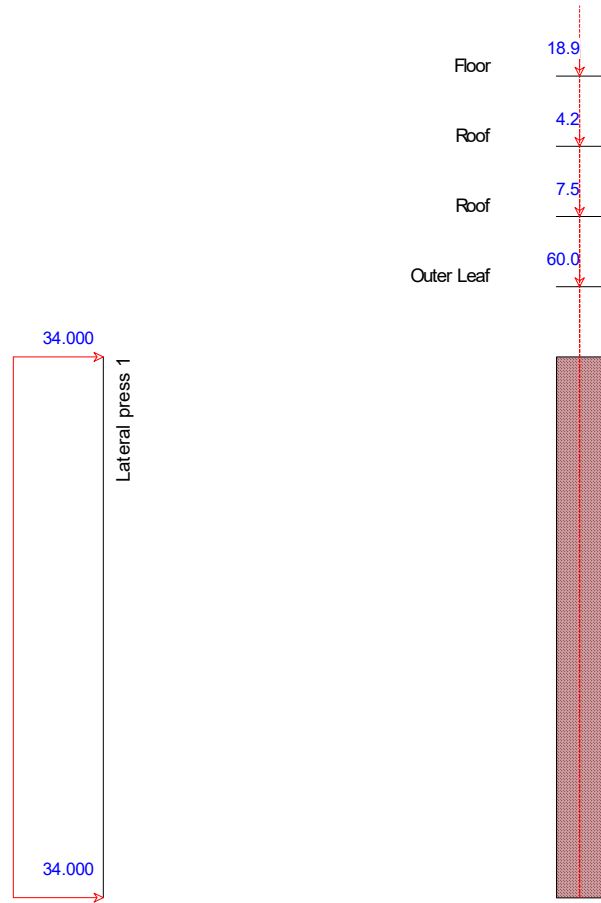


Masonry Wall Panel Designer MAX V2.24 (Build 237)
 Copyright © Computer and Design Services Ltd.

Party Wall - First Floor

Job No	MA11229
Job Ref	
Designed By	
Checked By	
Date	24/ 5/2021
Revision No	
Calc No	
Page No	2

Units
Vertical load - kNm
Eccentricity - mm
Lateral pressure - kNm²




Load view



Party Wall - First Floor

Job No	MA11229
Job Ref	
Designed By	
Checked By	
Date	24/ 5/2021
Revision No	
Calc No	
Page No	3

	Party Wall - First Floor	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
	Calc No		
	Page No	4	

Masonry Wall Panel Designer MAX V2.24 (Build 237) Copyright © Computer and Design Services Ltd.

<i>Data item</i>	<i>Near</i>
Bed joint reinforcement	No
DPC - top	No
DPC - bottom	No

Note:

- For details of masonry units, bed joint reinforcement and damp proof course refer to 'Material and design data'
- For details of wall ties (if specified) refer to 'Concise' or 'Detailed' report.

Masonry characteristic strengths

<i>Description</i>	<i>Near</i>	<i>Units</i>	<i>Description</i>	<i>Near</i>	<i>Units</i>
Design code	BS 5628-1 and 2:2005		Shear		
Compression			Shear without compression	0.15	N/mm ²
Narrow brick wall factor	1.00	-	Shear friction coefficient	0.60	-
Compression on bed joints	5.00	N/mm ²	Limiting shear	1.40	N/mm ²
Compression // bed joints	5.00	N/mm ²	Vertical shear- bonded	0.50	N/mm ²
Flexure			Elastic modulus		
Horizontal span	1.10	N/mm ²	Short term	4.50	kN/mm ²
Vertical span	0.40	N/mm ²	Long term	2.25	kN/mm ²

Characteristic vertical loads

Load category name	Near	
	Load (kN/m)	Ecc. mm
Dead load 1	60.000	0.000
Dead load 2	7.460	0.000
Imp. Load 1	4.200	0.000
Imp. Load 2	18.900	0.000

Characteristic lateral wind pressure

Category name	Pres. top kN/m ²	Pres. Bottom kN/m ²
Lateral press 1	34.000	34.000


Characteristic lateral line load

Category name	Load kN/m	Height from bottom mm

Note: For details of more than two loads please refer detailed report

Summary results (critical load combinations)

<i>Description</i>	<i>Wall</i>	<i>Status</i>	<i>Units</i>	<i>Description</i>	<i>Near</i>	<i>Status</i>	<i>Units</i>
Lateral load capacity	20.796		kN/m ²	Max. slenderness ratio	27		
Design uniform load	47.600		kN/m ²	Actual	8.656		
Utilisation	2.289	Fail		Utilisation	0.321	Pass	
Load combination	0.90D+1.40Lp1						
Limiting dimension / area							
Allowable	11000		mm				
Actual	7320		mm				
Utilisation	0.665	Pass					

	Party Wall - 10m - Roof	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
	Calc No		
	Page No	1	

Masonry Wall Panel Designer MAX V2.24 (Build 237) Copyright © Computer and Design Services Ltd.

MATERIAL AND DESIGN DATA

Material properties

<i>Data item</i>	<i>Near leaf</i>	<i>Units</i>
Masonry unit Properties		
Masonry unit product	User defined	-
Masonry unit type	Clay brick	-
Water absorption	7% - 12%	%
Unit mean compressive strength	20.0	N/mm ²
Unit minimum width as tested	102.5	mm
Unit height as tested	65.0	mm
Unit height as built	(laid normal) 65.0	mm
Density of wall / leaf as built	15.0	kN/m ³
Mortar property		
Mortar selection	Designated	-
Mortar designation	M4 (iii)	-

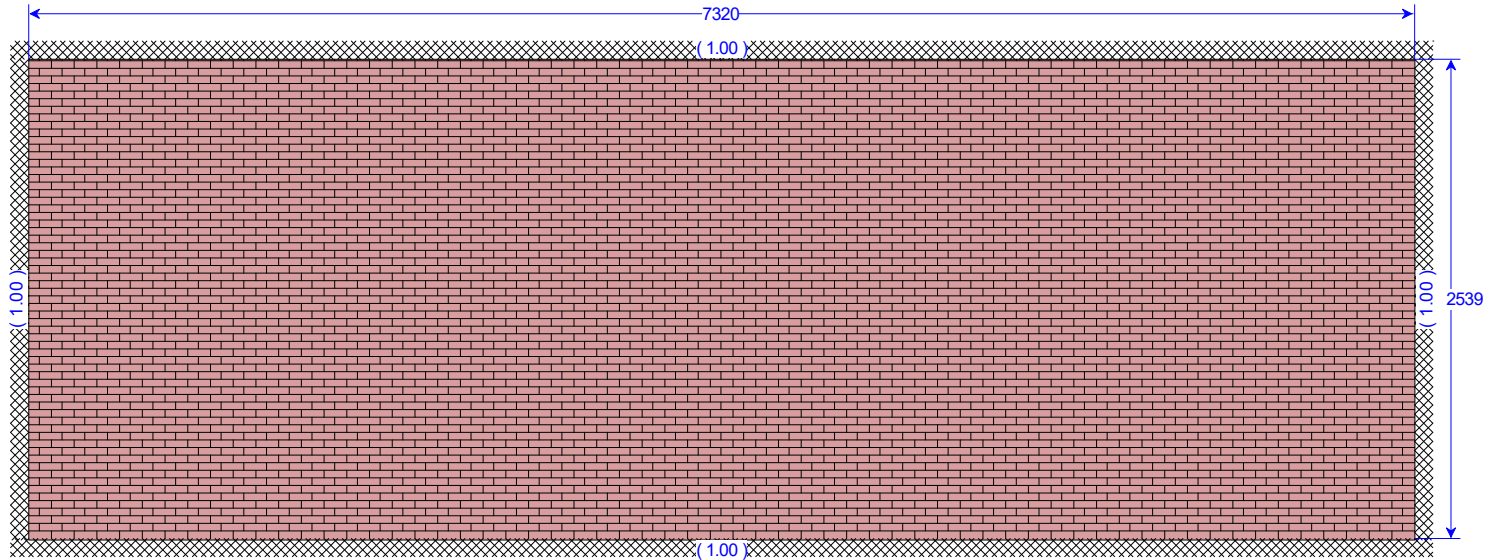
Partial safety factors for material strength

<i>Data item</i>	<i>Near leaf</i>
Partial safety factors	
Reinforcement tension	1.15
Masonry flexural tension	3.00
Masonry compression	3.50
Masonry shear	2.50
Masonry ties	3.50

Calculation options

<i>Data item</i>	<i>Options</i>
Section analysis	
Vertical load capacity check	Yes
Include eccentricity due to slenderness	Yes
Section resistance moment option (Near/Far)	
Top edge	Cracked
Mid height	Cracked
Bottom edge	Cracked
Dimension and deflection limits	
Design code	BS 5628-1 and 2:2005
Maximum slenderness ratio	27
Limiting dimensions check	Yes
Minimum span/deflection ratio	250
Minimum cantilever/deflection ratio	125
Maximum absolute deflection (mm)	20.00

Notes:




Elevation

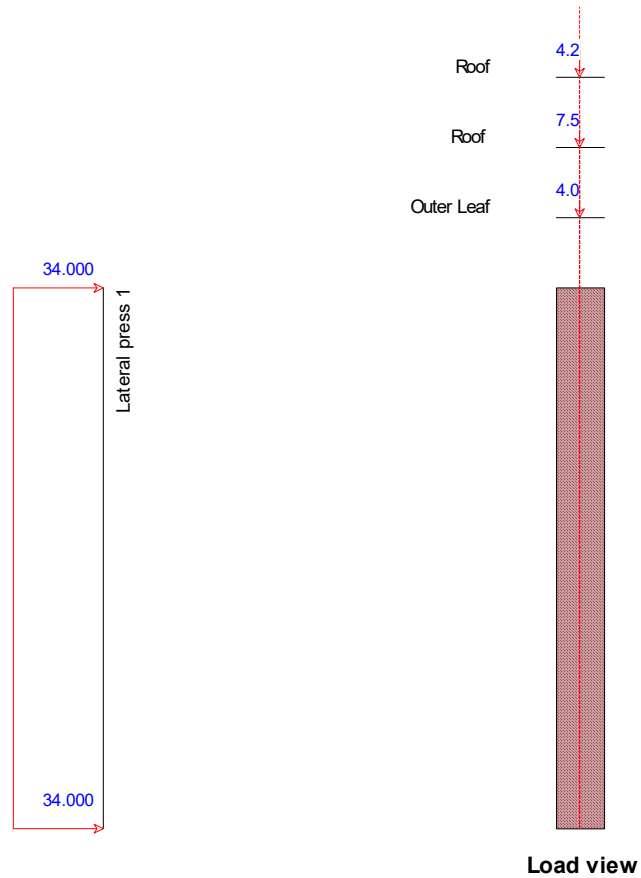



Sectional plan


Note: Figures in brackets eg: (1.00) shown in elevation indicate user defined proportional fixity/continuity factor applied before allowing for openings.

	Party Wall - 10m - Roof	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
		Calc No	
		Page No	2

Units
Vertical load - kNm
Eccentricity - mm
Lateral pressure - kNm²



	Party Wall - 10m - Roof	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
		Calc No	
		Page No	3

	Party Wall - 10m - Roof	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
	Calc No		
	Page No	4	

Masonry Wall Panel Designer MAX V2.24 (Build 237) Copyright © Computer and Design Services Ltd.

<i>Data item</i>	<i>Near</i>
Bed joint reinforcement	No
DPC - top	No
DPC - bottom	No

Note:

- For details of masonry units, bed joint reinforcement and damp proof course refer to 'Material and design data'
- For details of wall ties (if specified) refer to 'Concise' or 'Detailed' report.

Masonry characteristic strengths

<i>Description</i>	<i>Near</i>	<i>Units</i>	<i>Description</i>	<i>Near</i>	<i>Units</i>
Design code	BS 5628-1 and 2:2005		Shear		
Compression			Shear without compression	0.15	N/mm ²
Narrow brick wall factor	1.00	-	Shear friction coefficient	0.60	-
Compression on bed joints	5.00	N/mm ²	Limiting shear	1.40	N/mm ²
Compression // bed joints	5.00	N/mm ²	Vertical shear- bonded	0.50	N/mm ²
Flexure			Elastic modulus		
Horizontal span	1.10	N/mm ²	Short term	4.50	kN/mm ²
Vertical span	0.40	N/mm ²	Long term	2.25	kN/mm ²

Characteristic vertical loads

Load category name	Near	
	Load (kN/m)	Ecc. mm
Dead load 1	4.000	0.000
Dead load 2	7.460	0.000
Imp. Load 1	4.200	0.000

Characteristic lateral wind pressure

Category name	Pres. top kN/m ²	Pres. Bottom kN/m ²
Lateral press 1	34.000	34.000

Characteristic lateral line load

Category name	Load kN/m	Height from bottom mm

Note: For details of more than two loads please refer detailed report

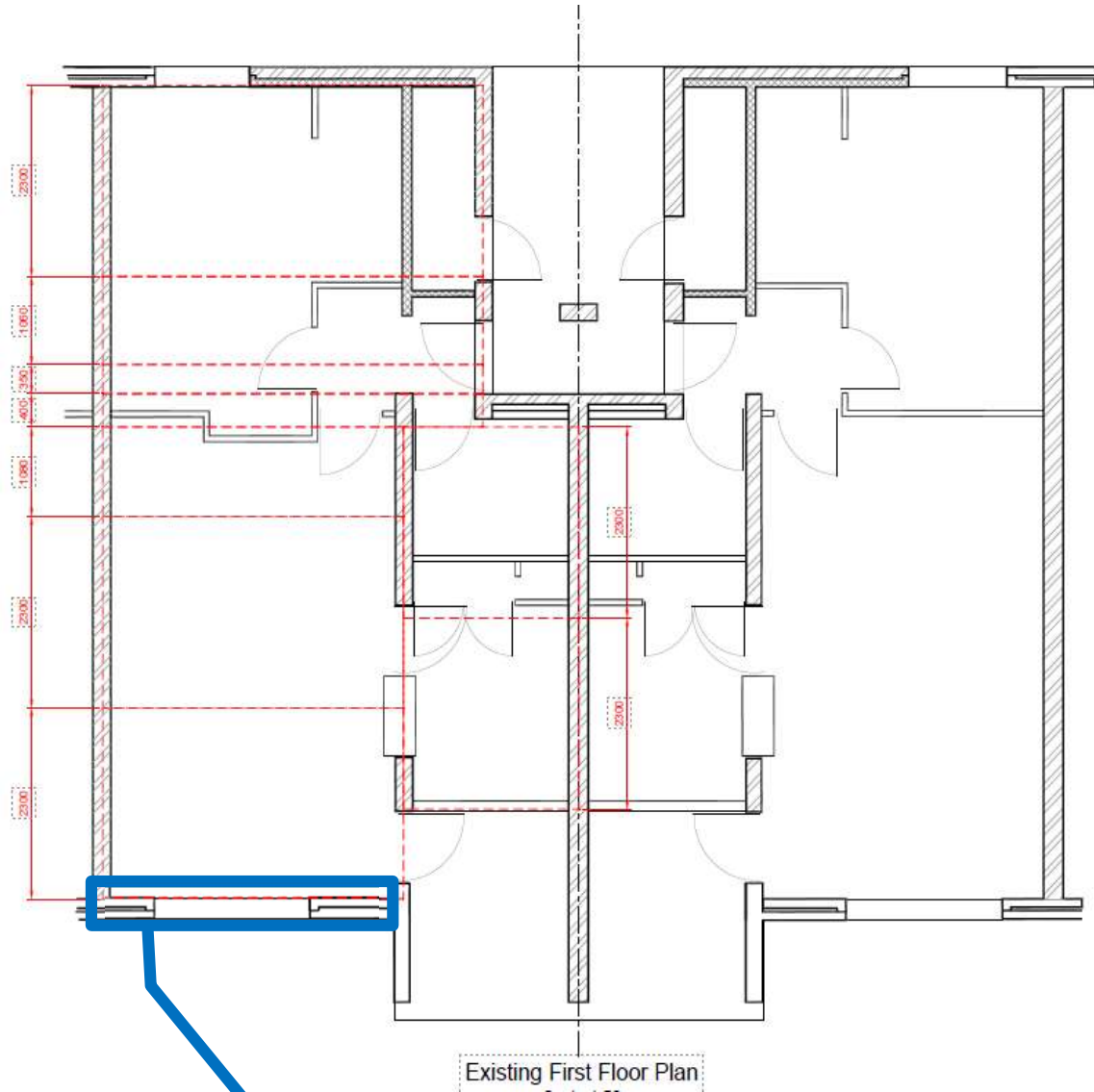
Summary results (critical load combinations)

<i>Description</i>	<i>Wall</i>	<i>Status</i>	<i>Units</i>	<i>Description</i>	<i>Near</i>	<i>Status</i>	<i>Units</i>
Lateral load capacity	6.101		kN/m ²	Max. slenderness ratio	27		
Design uniform load	47.600		kN/m ²	Actual	8.656		
Utilisation	7.803	Fail		Utilisation	0.321	Pass	
Load combination	0.90D+1.40Lp1						
Limiting dimension / area							
Allowable	11000		mm				
Actual	7320		mm				
Utilisation	0.665	Pass					




Project		Princess & Hanover		Job Ref.	
Section		Introduction & loading		MA11229	
Calc. by	Date				
BS	May 21				

Kingsway first floor plan



Examined panel

	Front Elevation - Ground Floor	Job No	
		Job Ref	
		Designed By	
		Checked By	
		Date	11/ 6/2021
		Revision No	
		Calc No	
		Page No	1

Masonry Wall Panel Designer MAX V2.24 (Build 237) Copyright © Computer and Design Services Ltd.

MATERIAL AND DESIGN DATA

Material properties

<i>Data item</i>	<i>Near leaf</i>	<i>Far leaf</i>	<i>Units</i>
Masonry unit Properties			
Masonry unit product	User defined	User defined	-
Masonry unit type	Clay brick	Aggregate concrete block	-
Water absorption	7% - 12%	N/a	%
Unit mean compressive strength	20.0	7.3	N/mm ²
Unit minimum width as tested	102.5	100.0	mm
Unit height as tested	65.0	215.0	mm
Unit height as built	(laid normal) 65.0	(laid upright) 215.0	mm
Density of wall / leaf as built	15.0	15.0	kN/m ³
Mortar property			
Mortar selection	Designated	Designated	-
Mortar designation	M4 (iii)	M4 (iii)	-

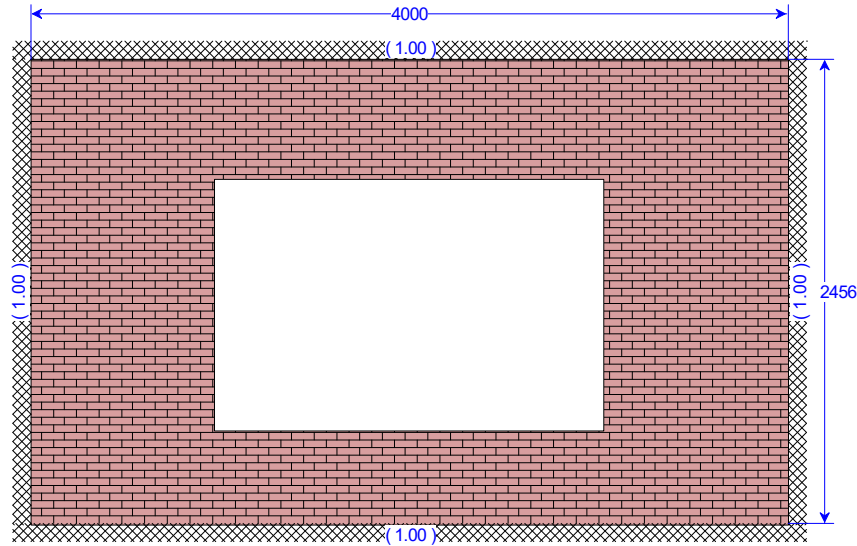
Partial safety factors for material strength

<i>Data item</i>	<i>Near leaf</i>	<i>Far leaf</i>
Partial safety factors		
Reinforcement tension	1.15	1.15
Masonry flexural tension	3.00	3.00
Masonry compression	3.50	3.50
Masonry shear	2.50	2.50
Masonry ties	3.50	3.50

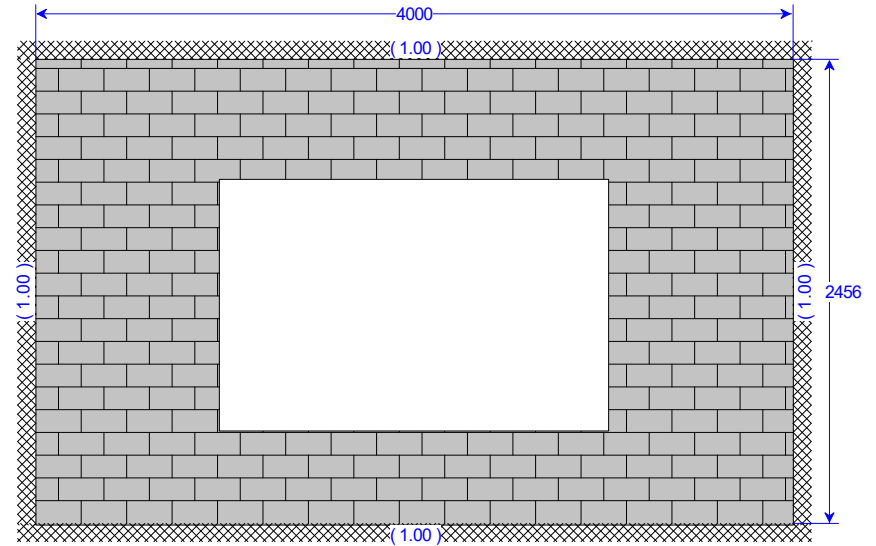
Calculation options

<i>Data item</i>	<i>Options</i>
Section analysis	
Vertical load capacity check	Yes
Include eccentricity due to slenderness	Yes
Section resistance moment option (Near/Far)	
Top edge	Cracked / Cracked
Mid height	Cracked / Cracked
Bottom edge	Cracked / Cracked
Opening effects	
Opening - edge influence angle	
Left / right edge (deg)	30
Top / bottom edge (deg)	30
Maximum strip width / span ratio	0.25
Maximum strip width / cantilever ratio	0.50
Dimension and deflection limits	
Design code	BS 5628-1 and 2:2005
Maximum slenderness ratio	27
Limiting dimensions check	Yes
Minimum span/deflection ratio	250
Minimum cantilever/deflection ratio	125
Maximum absolute deflection (mm)	20.00

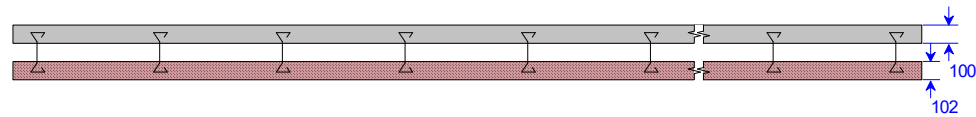
Notes:



Near leaf




Far leaf

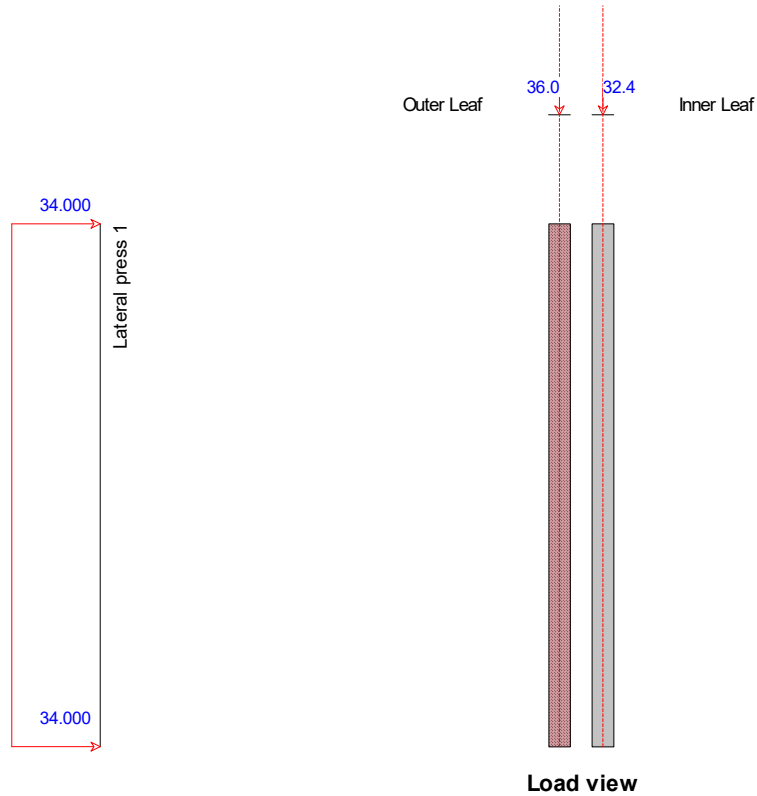


Sectional plan

Note: Figures in brackets eg: (1.00) shown in elevation indicate user defined proportional fixity/continuity factor applied before allowing for openings.


	Front Elevation - Ground Floor	Job No	
		Job Ref	
		Designed By	
		Checked By	
		Date	11/ 6/2021
		Revision No	
		Calc No	
		Page No	2

Units
Vertical load - kN/m
Eccentricity - mm
Lateral pressure - kN/m²



Front Elevation - Ground Floor

Job No	
Job Ref	
Designed By	
Checked By	
Date	11/ 6/2021
Revision No	
Calc No	
Page No	3

	Front Elevation - Ground Floor	Job No	
		Job Ref	
		Designed By	
		Checked By	
		Date	11/ 6/2021
		Revision No	
	Calc No		
	Page No	4	

Masonry Wall Panel Designer MAX V2.24 (Build 237) Copyright © Computer and Design Services Ltd.

<i>Data item</i>	<i>Near</i>	<i>Far</i>
Bed joint reinforcement	No	No
DPC - top	No	No
DPC - bottom	No	No

Note:

1. For details of masonry units, bed joint reinforcement and damp proof course refer to 'Material and design data'
2. For details of wall ties (if specified) refer to 'Concise' or 'Detailed' report.

Masonry characteristic strengths

<i>Description</i>	<i>Near</i>	<i>Far</i>	<i>Units</i>	<i>Description</i>	<i>Near</i>	<i>Far</i>	<i>Units</i>
Design code	BS 5628-1 and 2:2005			Shear			
Compression				Shear without compression	0.15	0.15	N/mm ²
Narrow brick wall factor	1.15	1.00	-	Shear friction coefficient	0.60	0.60	-
Compression on bed joints	5.75	6.40	N/mm ²	Limiting shear	1.40	1.40	N/mm ²
Compression // bed joints	5.75	6.40	N/mm ²	Vertical shear- bonded	0.50	0.35	N/mm ²
Flexure				Elastic modulus			
Horizontal span	1.10	0.60	N/mm ²	Short term	4.50	5.76	kN/mm ²
Vertical span	0.40	0.25	N/mm ²	Long term	2.25	2.88	kN/mm ²

Characteristic vertical loads

Load category name	Near		Far	
	Load (kN/m)	Ecc. mm	Load (kN/m)	Ecc. mm
Dead load 1	36.000	0.000	32.400	0.000

Characteristic lateral wind pressure

Category name	Pres. top kN/m ²	Pres. Bottom kN/m ²
Lateral press 1	34.000	34.000


Characteristic lateral line load

Category name	Load kN/m	Height from bottom mm

Note: For details of more than two loads please refer detailed report

Summary results (critical load combinations)

<i>Description</i>	<i>Wall</i>	<i>Status</i>	<i>Units</i>	<i>Description</i>	<i>Near</i>	<i>Far</i>	<i>Status</i>	<i>Units</i>
Lateral load capacity	6.328		kN/m ²	Max. slenderness	27	27		
Design uniform load	47.600		kN/m ²	Actual	13.678	13.678		
Utilisation	7.523	Fail		Utilisation	0.507	0.507	Pass	
Load combination	1.40D+1.40Lp1							
Limiting dimension / area								
Allowable	6733		mm					
Actual	4000		mm					
Utilisation	0.594	Pass						

	Front elevation with window openings - First floor	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
		Calc No	
		Page No	1

Masonry Wall Panel Designer MAX V2.24 (Build 237) Copyright © Computer and Design Services Ltd.

MATERIAL AND DESIGN DATA

Material properties


<i>Data item</i>	<i>Near leaf</i>		<i>Far leaf</i>	<i>Units</i>
Masonry unit Properties				
Masonry unit product	User defined		User defined	-
Masonry unit type	Clay brick		Aggregate concrete block	-
Water absorption	7% - 12%		N/a	%
Unit mean compressive strength	20.0		7.3	N/mm ²
Unit minimum width as tested	102.5		100.0	mm
Unit height as tested	65.0		215.0	mm
Unit height as built	(laid normal) 65.0		(laid upright) 215.0	mm
Density of wall / leaf as built	20.0		18.0	kN/m ³
Mortar property				
Mortar selection	Designated		Designated	-
Mortar designation	M4 (iii)		M4 (iii)	-
Damp proof course properties				
	<i>Top</i>	<i>Bottom</i>		
DPC type	Polyethylene	Polyethylene		-
Characteristic compressive strength	> Masonry	> Masonry		N/mm ²
Characteristic flexural strength	0.20	0.20		N/mm ²
Characteristic initial shear strength	0.15	0.15		N/mm ²
Shear-friction coefficient	0.60	0.60		-

Partial safety factors for material strength

<i>Data item</i>	<i>Near leaf</i>	<i>Far leaf</i>
Partial safety factors		
Reinforcement tension	1.15	1.15
Masonry flexural tension	3.00	3.00
Masonry compression	3.50	3.50
Masonry shear	2.50	2.50
Masonry ties	3.50	3.50

Calculation options

<i>Data item</i>	<i>Options</i>
Section analysis	
Vertical load capacity check	Yes
Include eccentricity due to slenderness	Yes
Section resistance moment option (Near/Far)	
Top edge	Cracked / Cracked
Mid height	Cracked / Cracked
Bottom edge	Cracked / Cracked
Opening effects	
Opening - edge influence angle	
Left / right edge (deg)	30
Top / bottom edge (deg)	30
Maximum strip width / span ratio	0.25
Maximum strip width / cantilever ratio	0.50
Dimension and deflection limits	
Design code	BS 5628-1 and 2:2005
Maximum slenderness ratio	27
Limiting dimensions check	Yes
Minimum span/deflection ratio	250
Minimum cantilever/deflection ratio	125

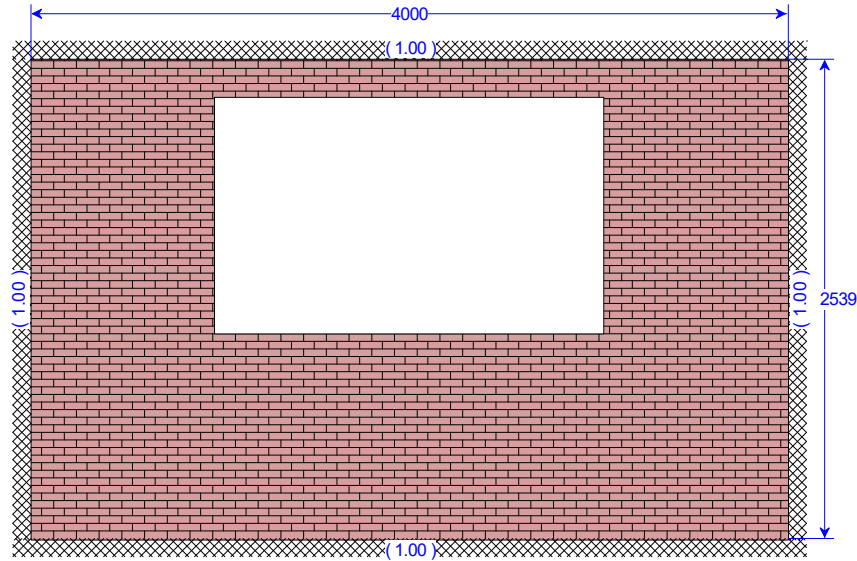
	Front elevation with window openings - First floor	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
		Calc No	
	Page No	2	

Masonry Wall Panel Designer MAX V2.24 (Build 237) Copyright © Computer and Design Services Ltd.

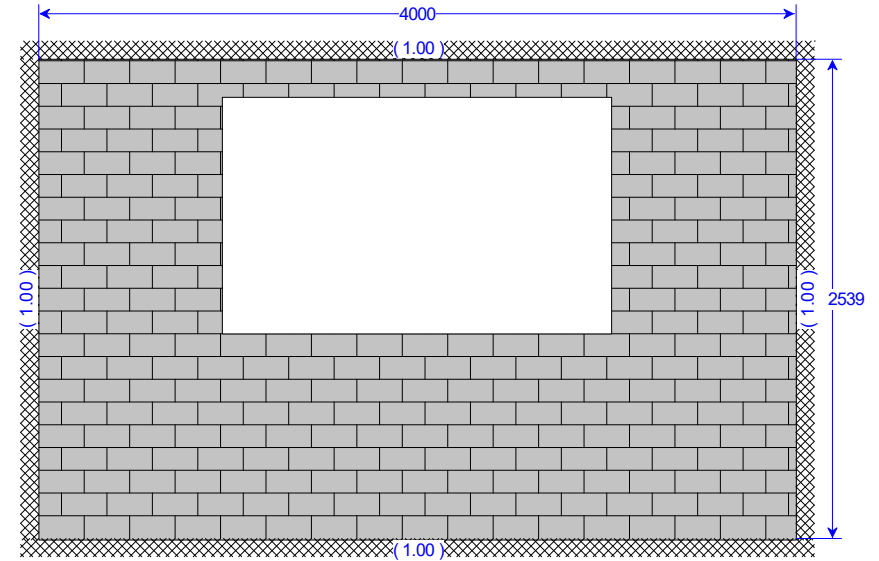
Calculation options(Contd.)

Maximum absolute deflection (mm)	20.00
----------------------------------	-------

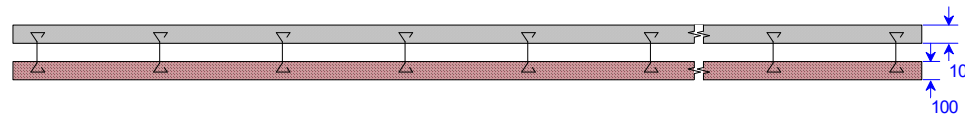
Notes:



Near leaf



Far leaf



Sectional plan

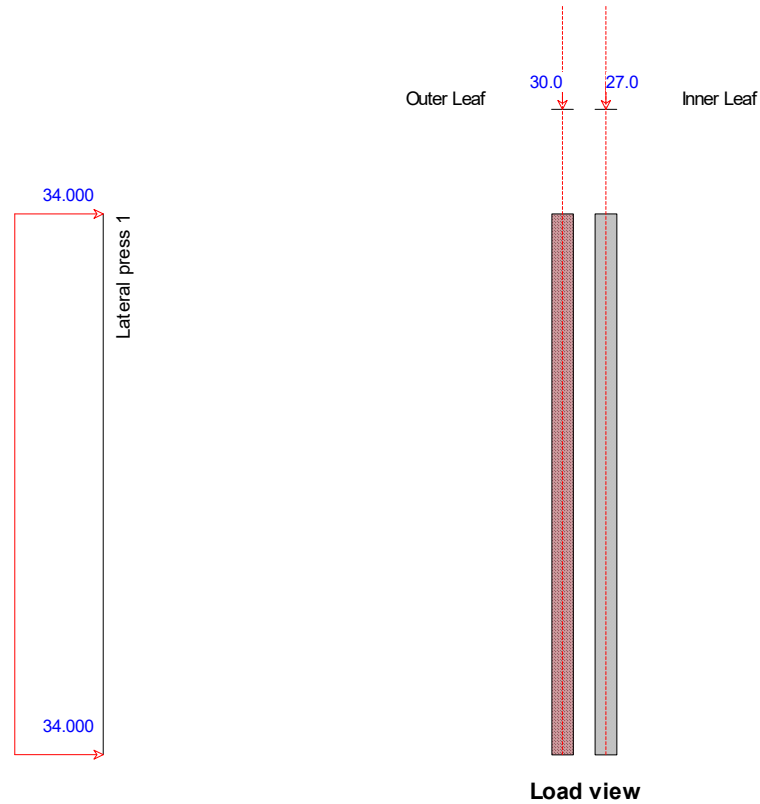
Note: Figures in brackets eg: (1.00) shown in elevation indicate user defined proportional fixity/continuity factor applied before allowing for openings.



Front elevation with window
openings - First floor


Job No	MA11229
Job Ref	
Designed By	
Checked By	
Date	24/ 5/2021
Revision No	
Calc No	
Page No	3

Units
Vertical load - kNm
Eccentricity - mm
Lateral pressure - kNm²



Front elevation with window
openings - First floor

Job No	MA11229
Job Ref	
Designed By	
Checked By	
Date	24/ 5/2021
Revision No	
Calc No	
Page No	4

	Front elevation with window openings - First floor	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
	Calc No		
	Page No	5	

Masonry Wall Panel Designer MAX V2.24 (Build 237) Copyright © Computer and Design Services Ltd.

<i>Data item</i>	<i>Near</i>	<i>Far</i>
Bed joint reinforcement	No	No
DPC - top	Yes	No
DPC - bottom	Yes	No

Note:

- For details of masonry units, bed joint reinforcement and damp proof course refer to 'Material and design data'
- For details of wall ties (if specified) refer to 'Concise' or 'Detailed' report.

Masonry characteristic strengths

<i>Description</i>	<i>Near</i>	<i>Far</i>	<i>Units</i>	<i>Description</i>	<i>Near</i>	<i>Far</i>	<i>Units</i>
Design code	BS 5628-1 and 2:2005			Shear			
Compression				Shear without compression	0.15	0.15	N/mm ²
Narrow brick wall factor	1.15	1.00	-	Shear friction coefficient	0.60	0.60	-
Compression on bed joints	5.75	6.40	N/mm ²	Limiting shear	1.40	1.40	N/mm ²
Compression // bed joints	5.75	6.40	N/mm ²	Vertical shear- bonded	0.50	0.35	N/mm ²
Flexure				Elastic modulus			
Horizontal span	1.10	0.60	N/mm ²	Short term	4.50	5.76	kN/mm ²
Vertical span	0.40	0.25	N/mm ²	Long term	2.25	2.88	kN/mm ²

Characteristic vertical loads

Load category name	Near		Far	
	Load (kN/m)	Ecc. mm	Load (kN/m)	Ecc. mm
Dead load 1	30.000	0.000	27.000	0.000

Characteristic lateral wind pressure

Category name	Pres. top kN/m ²	Pres. Bottom kN/m ²
Lateral press 1	34.000	34.000


Characteristic lateral line load

Category name	Load kN/m	Height from bottom mm

Note: For details of more than two loads please refer detailed report

Summary results (critical load combinations)

<i>Description</i>	<i>Wall</i>	<i>Status</i>	<i>Units</i>	<i>Description</i>	<i>Near</i>	<i>Far</i>	<i>Status</i>	<i>Units</i>
Lateral load capacity	6.118		kN/m ²	Max. slenderness	27	27		
Design uniform load	47.600		kN/m ²	Actual	14.282	14.282		
Utilisation	7.781	Fail		Utilisation	0.529	0.529	Pass	
Load combination	0.90D+1.40Lp1							
Limiting dimension / area								
Allowable	6666		mm					
Actual	4000		mm					
Utilisation	0.600	Pass						

	Front elevation with window openings at 7th floor	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
	Calc No		
	Page No	1	

Masonry Wall Panel Designer MAX V2.24 (Build 237) Copyright © Computer and Design Services Ltd.

MATERIAL AND DESIGN DATA

Material properties


<i>Data item</i>	<i>Near leaf</i>		<i>Far leaf</i>	<i>Units</i>
Masonry unit Properties				
Masonry unit product	User defined		User defined	-
Masonry unit type	Clay brick		Aggregate concrete block	-
Water absorption	7% - 12%		N/a	%
Unit mean compressive strength	20.0		7.3	N/mm ²
Unit minimum width as tested	102.5		100.0	mm
Unit height as tested	65.0		215.0	mm
Unit height as built	(laid normal) 65.0		(laid upright) 215.0	mm
Density of wall / leaf as built	20.0		18.0	kN/m ³
Mortar property				
Mortar selection	Designated		Designated	-
Mortar designation	M4 (iii)		M4 (iii)	-
Damp proof course properties				
	<i>Top</i>	<i>Bottom</i>		
DPC type	Polyethylene	Polyethylene		-
Characteristic compressive strength	> Masonry	> Masonry		N/mm ²
Characteristic flexural strength	0.20	0.20		N/mm ²
Characteristic initial shear strength	0.15	0.15		N/mm ²
Shear-friction coefficient	0.60	0.60		-

Partial safety factors for material strength

<i>Data item</i>	<i>Near leaf</i>	<i>Far leaf</i>
Partial safety factors		
Reinforcement tension	1.15	1.15
Masonry flexural tension	3.00	3.00
Masonry compression	3.50	3.50
Masonry shear	2.50	2.50
Masonry ties	3.50	3.50

Calculation options

<i>Data item</i>	<i>Options</i>
Section analysis	
Vertical load capacity check	Yes
Include eccentricity due to slenderness	Yes
Section resistance moment option (Near/Far)	
Top edge	Cracked / Cracked
Mid height	Cracked / Cracked
Bottom edge	Cracked / Cracked
Opening effects	
Opening - edge influence angle	
Left / right edge (deg)	30
Top / bottom edge (deg)	30
Maximum strip width / span ratio	0.25
Maximum strip width / cantilever ratio	0.50
Dimension and deflection limits	
Design code	BS 5628-1 and 2:2005
Maximum slenderness ratio	27
Limiting dimensions check	Yes
Minimum span/deflection ratio	250
Minimum cantilever/deflection ratio	125

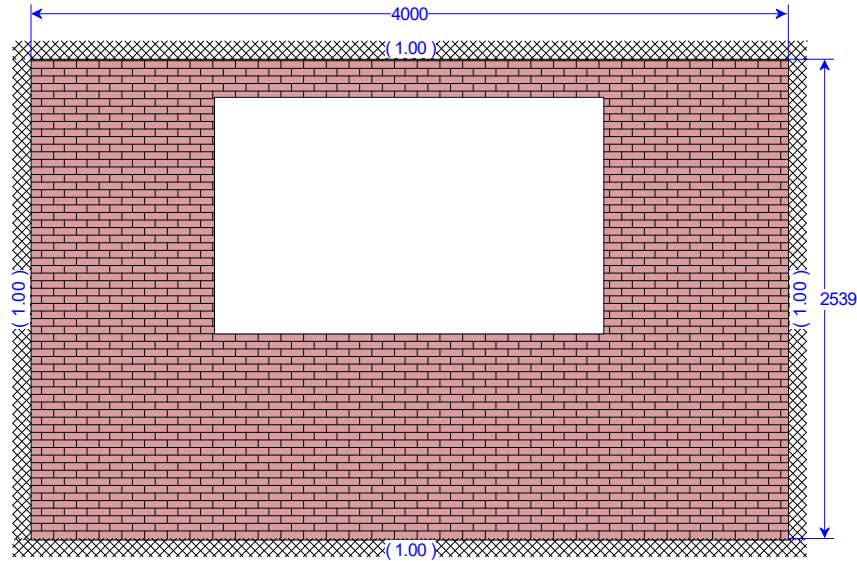
	Front elevation with window openings at 7th floor	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
		Calc No	
Page No	2		

Masonry Wall Panel Designer MAX V2.24 (Build 237) Copyright © Computer and Design Services Ltd.

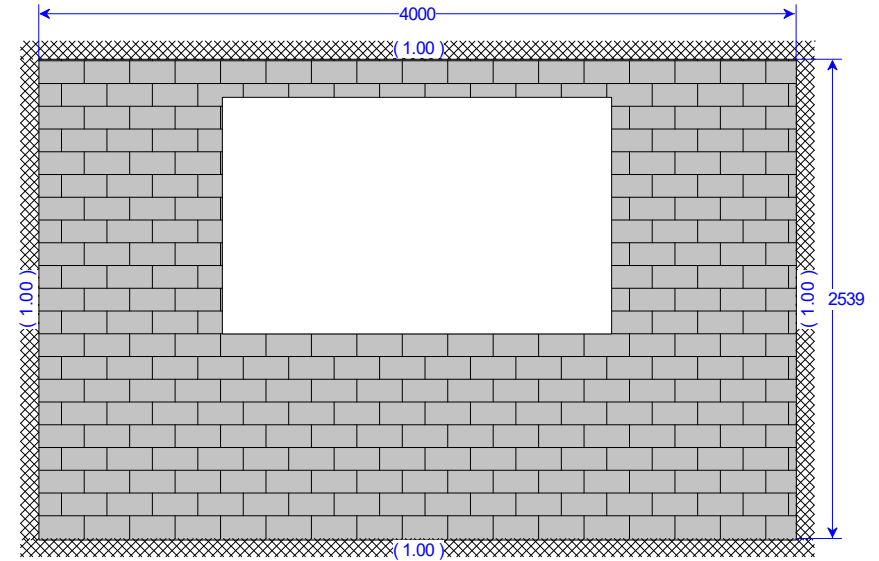
Calculation options(Contd.)

Maximum absolute deflection (mm)	20.00
----------------------------------	-------

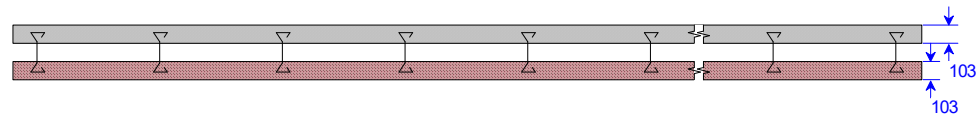
Notes:



Near leaf



Far leaf



Sectional plan

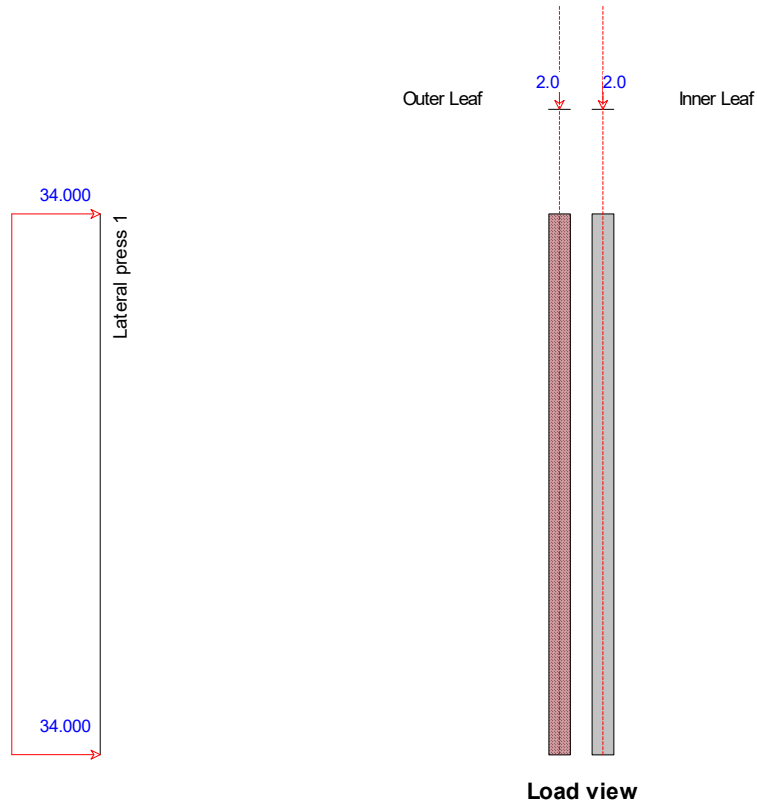
Note: Figures in brackets eg: (1.00) shown in elevation indicate user defined proportional fixity/continuity factor applied before allowing for openings.



Front elevation with window
openings at 7th floor


Job No	MA11229
Job Ref	
Designed By	
Checked By	
Date	24/ 5/2021
Revision No	
Calc No	
Page No	3

Units
Vertical load - kN/m
Eccentricity - mm
Lateral pressure - kN/m²



Front elevation with window
openings at 7th floor

Job No	MA11229
Job Ref	
Designed By	
Checked By	
Date	24/ 5/2021
Revision No	
Calc No	
Page No	4

	Front elevation with window openings at 7th floor	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
	Calc No		
	Page No	5	

Masonry Wall Panel Designer MAX V2.24 (Build 237) Copyright © Computer and Design Services Ltd.

<i>Data item</i>	<i>Near</i>	<i>Far</i>
Bed joint reinforcement	No	No
DPC - top	Yes	No
DPC - bottom	Yes	No

Note:

- For details of masonry units, bed joint reinforcement and damp proof course refer to 'Material and design data'
- For details of wall ties (if specified) refer to 'Concise' or 'Detailed' report.

Masonry characteristic strengths

<i>Description</i>	<i>Near</i>	<i>Far</i>	<i>Units</i>	<i>Description</i>	<i>Near</i>	<i>Far</i>	<i>Units</i>
Design code	BS 5628-1 and 2:2005			Shear			
Compression				Shear without compression	0.15	0.15	N/mm ²
Narrow brick wall factor	1.00	1.00	-	Shear friction coefficient	0.60	0.60	-
Compression on bed joints	5.00	6.40	N/mm ²	Limiting shear	1.40	1.40	N/mm ²
Compression // bed joints	5.00	6.40	N/mm ²	Vertical shear- bonded	0.50	0.35	N/mm ²
Flexure				Elastic modulus			
Horizontal span	1.10	0.59	N/mm ²	Short term	4.50	5.76	kN/mm ²
Vertical span	0.40	0.25	N/mm ²	Long term	2.25	2.88	kN/mm ²

Characteristic vertical loads

Load category name	Near		Far	
	Load (kN/m)	Ecc. mm	Load (kN/m)	Ecc. mm
Dead load 1	2.000	0.000	2.000	0.000

Characteristic lateral wind pressure

Category name	Pres. top kN/m ²	Pres. Bottom kN/m ²
Lateral press 1	34.000	34.000

Characteristic lateral line load

Category name	Load kN/m	Height from bottom mm

Note: For details of more than two loads please refer detailed report

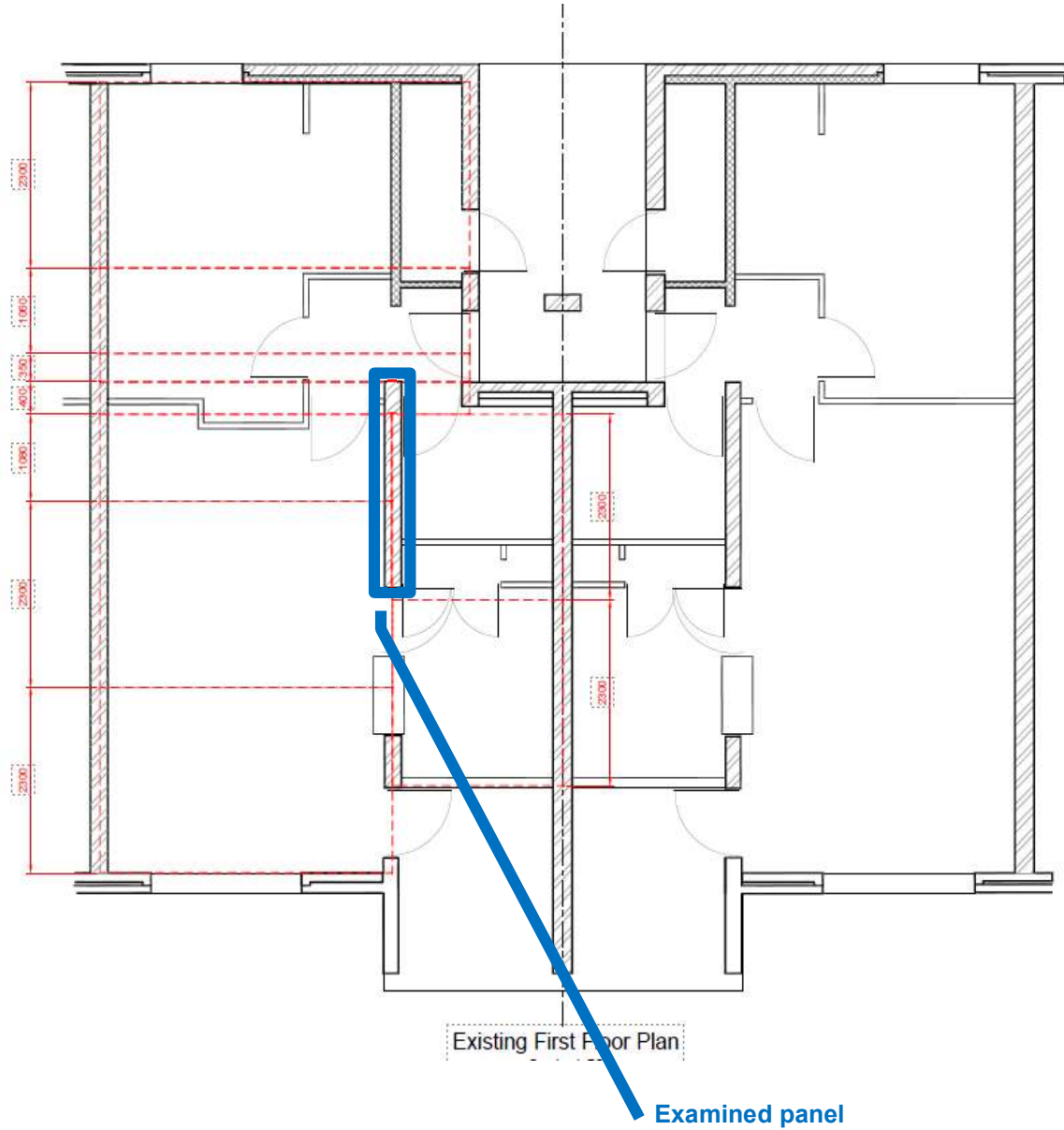
Summary results (critical load combinations)


<i>Description</i>	<i>Wall</i>	<i>Status</i>	<i>Units</i>	<i>Description</i>	<i>Near</i>	<i>Far</i>	<i>Status</i>	<i>Units</i>
Lateral load capacity	2.159		kN/m ²	Max. slenderness	27	27		
Design uniform load	47.600		kN/m ²	Actual	13.866	13.866		
Utilisation	22.052	Fail		Utilisation	0.514	0.514	Pass	
Load combination	0.90D+1.40Lp1							
Limiting dimension / area								
Allowable	6866		mm					
Actual	4000		mm					
Utilisation	0.583	Pass						



Project		Princess & Hanover		Job Ref.	
Section		Introduction & loading		MA11229	
Calc. by	Date				
BS	May 21				

Kingsway first floor plan



	Internal Wall -Ground Floor	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
	Calc No		
	Page No		1

Masonry Wall Panel Designer MAX V2.24 (Build 237) Copyright © Computer and Design Services Ltd.

MATERIAL AND DESIGN DATA

Material properties

<i>Data item</i>	<i>Near leaf</i>	<i>Units</i>
Masonry unit Properties		
Masonry unit product	User defined	-
Masonry unit type	Clay brick	-
Water absorption	7% - 12%	%
Unit mean compressive strength	20.0	N/mm ²
Unit minimum width as tested	220.0	mm
Unit height as tested	65.0	mm
Unit height as built	(laid normal) 65.0	mm
Density of wall / leaf as built	15.0	kN/m ³
Mortar property		
Mortar selection	Designated	-
Mortar designation	M4 (iii)	-

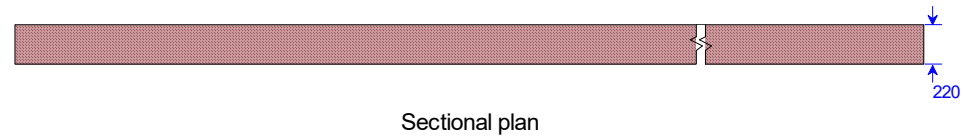
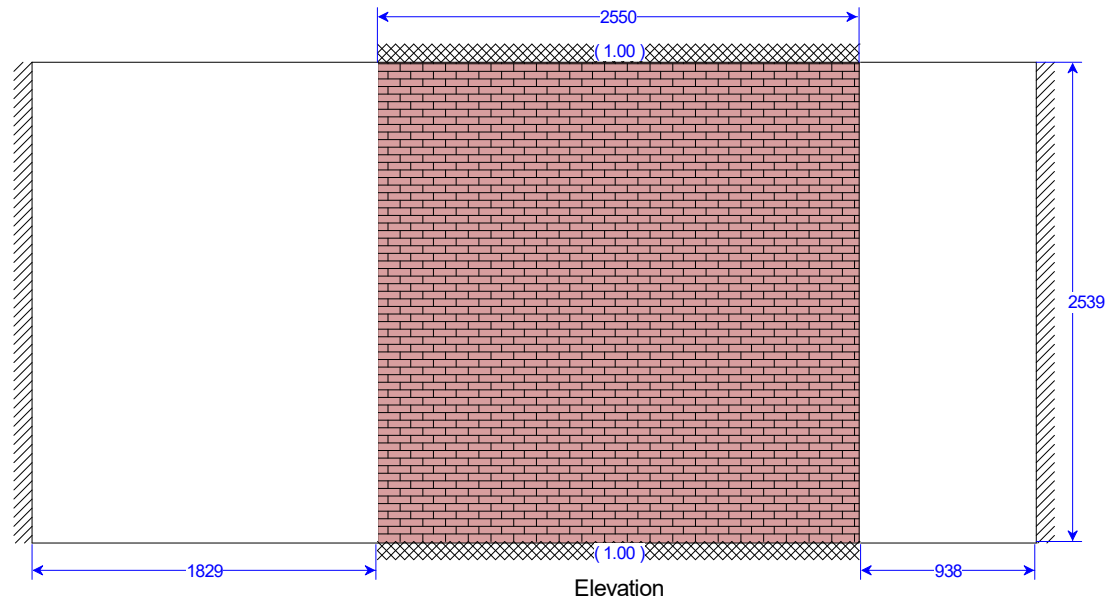
Partial safety factors for material strength

<i>Data item</i>	<i>Near leaf</i>
Partial safety factors	
Reinforcement tension	1.15
Masonry flexural tension	3.00
Masonry compression	3.50
Masonry shear	2.50
Masonry ties	3.50


Calculation options

<i>Data item</i>	<i>Options</i>
Section analysis	
Vertical load capacity check	Yes
Include eccentricity due to slenderness	Yes
Section resistance moment option (Near/Far)	
Top edge	Cracked
Mid height	Cracked
Bottom edge	Cracked
Opening effects	
Opening - edge influence angle	
Left / right edge (deg)	30
Top / bottom edge (deg)	30
Maximum strip width / span ratio	0.25
Maximum strip width / cantilever ratio	0.50
Dimension and deflection limits	
Design code	BS 5628-1 and 2:2005
Maximum slenderness ratio	27
Limiting dimensions check	Yes
Minimum span/deflection ratio	250
Minimum cantilever/deflection ratio	125
Maximum absolute deflection (mm)	20.00

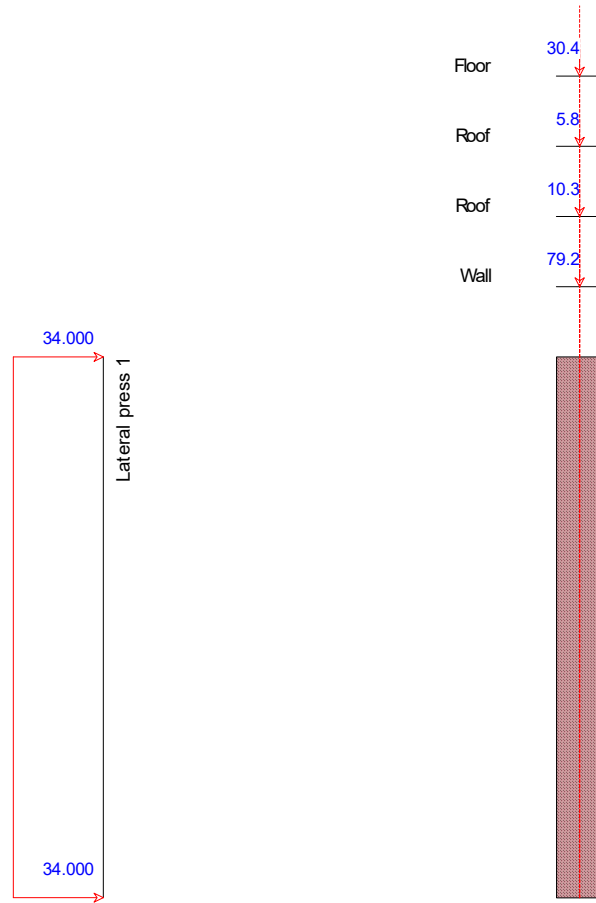
Notes:



Note: Figures in brackets eg: (1.00) shown in elevation indicate user defined proportional fixity/continuity factor applied before allowing for openings.

	Internal Wall -Ground Floor	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
		Calc No	
		Page No	2

Units
 Vertical load - kNm
 Eccentricity - mm
 Lateral pressure - kN/m²




Load view



Internal Wall -Ground Floor

Job No	MA11229
Job Ref	
Designed By	
Checked By	
Date	24/ 5/2021
Revision No	
Calc No	
Page No	3

	Internal Wall -Ground Floor	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
	Calc No		
	Page No	4	

Masonry Wall Panel Designer MAX V2.24 (Build 237) Copyright © Computer and Design Services Ltd.

<i>Data item</i>	<i>Near</i>
Bed joint reinforcement	No
DPC - top	No
DPC - bottom	No

Note:

- For details of masonry units, bed joint reinforcement and damp proof course refer to 'Material and design data'
- For details of wall ties (if specified) refer to 'Concise' or 'Detailed' report.

Masonry characteristic strengths

<i>Description</i>	<i>Near</i>	<i>Units</i>	<i>Description</i>	<i>Near</i>	<i>Units</i>
Design code	BS 5628-1 and 2:2005		Shear		
Compression			Shear without compression	0.15	N/mm ²
Narrow brick wall factor	1.15	-	Shear friction coefficient	0.60	-
Compression on bed joints	5.75	N/mm ²	Limiting shear	1.40	N/mm ²
Compression // bed joints	5.75	N/mm ²	Vertical shear- bonded	0.50	N/mm ²
Flexure			Elastic modulus		
Horizontal span	1.10	N/mm ²	Short term	4.50	kN/mm ²
Vertical span	0.40	N/mm ²	Long term	2.25	kN/mm ²

Characteristic vertical loads

Load category name	Near	
	Load (kN/m)	Ecc. mm
Dead load 1	79.200	0.000
Dead load 2	10.300	0.000
Imp. Load 1	5.800	0.000
Imp. Load 2	30.450	0.000

Characteristic lateral wind pressure

Category name	Pres. top kN/m ²	Pres. Bottom kN/m ²
Lateral press 1	34.000	34.000


Characteristic lateral line load

Category name	Load kN/m	Height from bottom mm

Note: For details of more than two loads please refer detailed report

Summary results (critical load combinations)

<i>Description</i>	<i>Wall</i>	<i>Status</i>	<i>Units</i>	<i>Description</i>	<i>Near</i>	<i>Status</i>	<i>Units</i>
Lateral load capacity	3.942		kN/m ²	Max. slenderness ratio	27		
Design uniform load	47.600		kN/m ²	Actual	8.656		
Utilisation	12.075	Fail		Utilisation	0.321	Pass	
Load combination	1.40D+1.20I+1.40						
Limiting dimension / area							
Allowable	11000		mm				
Actual	2539		mm				
Utilisation	0.231	Pass					

	Internal Wall - First Floor	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
	Calc No		
	Page No	1	

Masonry Wall Panel Designer MAX V2.24 (Build 237) Copyright © Computer and Design Services Ltd.

MATERIAL AND DESIGN DATA

Material properties

<i>Data item</i>	<i>Near leaf</i>	<i>Units</i>
Masonry unit Properties		
Masonry unit product	User defined	-
Masonry unit type	Clay brick	-
Water absorption	7% - 12%	%
Unit mean compressive strength	20.0	N/mm ²
Unit minimum width as tested	220.0	mm
Unit height as tested	65.0	mm
Unit height as built	(laid normal) 65.0	mm
Density of wall / leaf as built	15.0	kN/m ³
Mortar property		
Mortar selection	Designated	-
Mortar designation	M4 (iii)	-

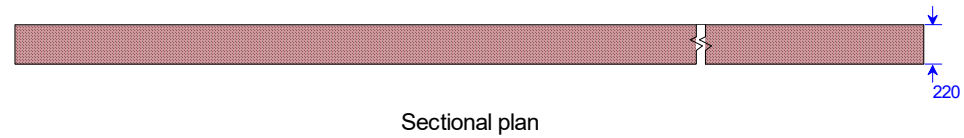
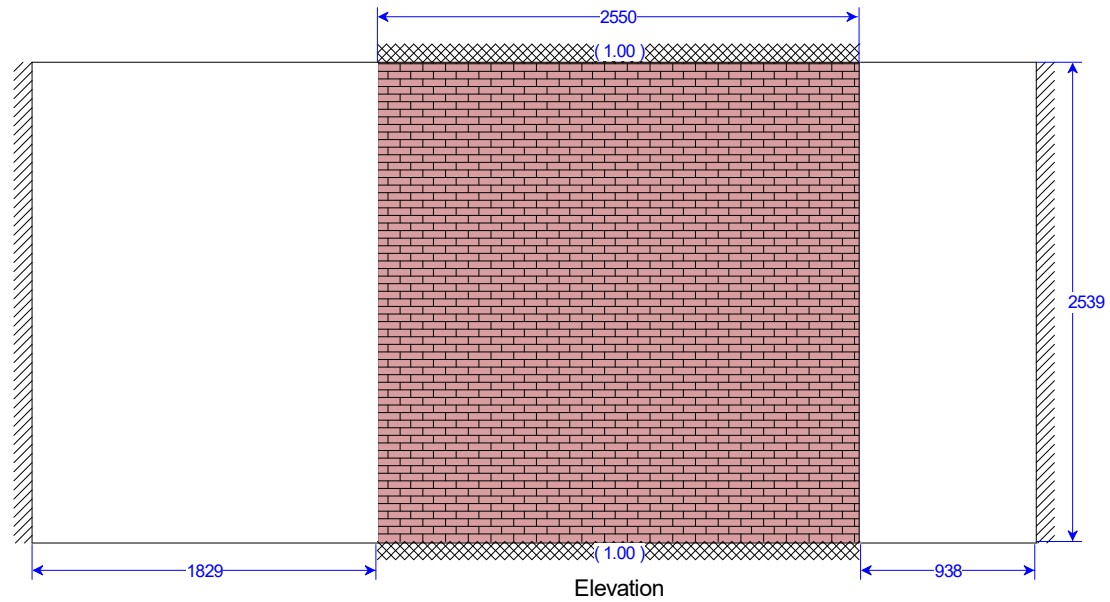
Partial safety factors for material strength

<i>Data item</i>	<i>Near leaf</i>
Partial safety factors	
Reinforcement tension	1.15
Masonry flexural tension	3.00
Masonry compression	3.50
Masonry shear	2.50
Masonry ties	3.50


Calculation options

<i>Data item</i>	<i>Options</i>
Section analysis	
Vertical load capacity check	Yes
Include eccentricity due to slenderness	Yes
Section resistance moment option (Near/Far)	
Top edge	Cracked
Mid height	Cracked
Bottom edge	Cracked
Opening effects	
Opening - edge influence angle	
Left / right edge (deg)	30
Top / bottom edge (deg)	30
Maximum strip width / span ratio	0.25
Maximum strip width / cantilever ratio	0.50
Dimension and deflection limits	
Design code	BS 5628-1 and 2:2005
Maximum slenderness ratio	27
Limiting dimensions check	Yes
Minimum span/deflection ratio	250
Minimum cantilever/deflection ratio	125
Maximum absolute deflection (mm)	20.00

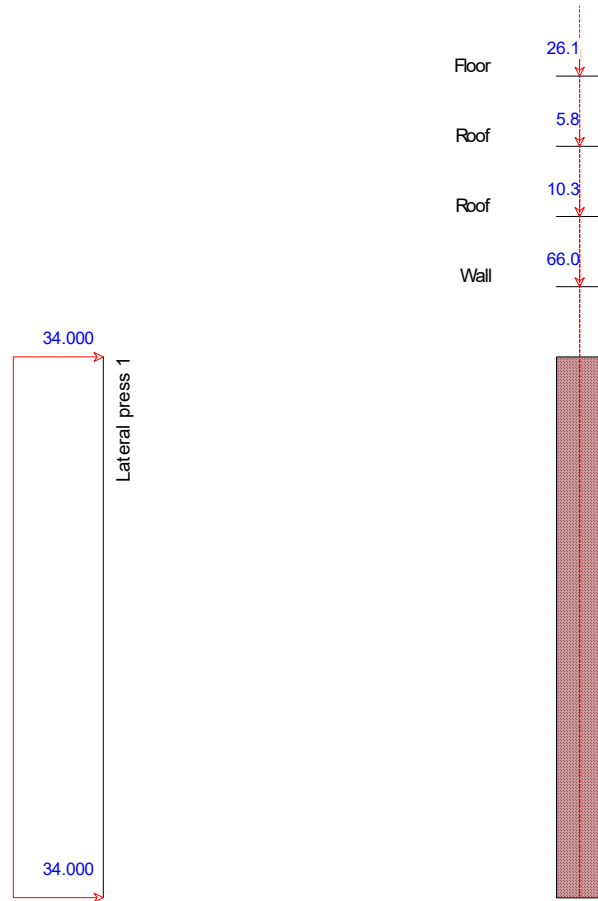
Notes:




Note: Figures in brackets eg: (1.00) shown in elevation indicate user defined proportional fixity/continuity factor applied before allowing for openings.


	Internal Wall - First Floor	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
		Calc No	
		Page No	2

Units
 Vertical load - kNm
 Eccentricity - mm
 Lateral pressure - kN/m²



Load view

	Internal Wall - First Floor	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
		Calc No	
		Page No	3

	Internal Wall - First Floor	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
	Calc No		
	Page No	4	

Masonry Wall Panel Designer MAX V2.24 (Build 237) Copyright © Computer and Design Services Ltd.

<i>Data item</i>	<i>Near</i>
Bed joint reinforcement	No
DPC - top	No
DPC - bottom	No

Note:

1. For details of masonry units, bed joint reinforcement and damp proof course refer to 'Material and design data'
2. For details of wall ties (if specified) refer to 'Concise' or 'Detailed' report.

Masonry characteristic strengths

<i>Description</i>	<i>Near</i>	<i>Units</i>	<i>Description</i>	<i>Near</i>	<i>Units</i>
Design code	BS 5628-1 and 2:2005		Shear		
Compression			Shear without compression	0.15	N/mm ²
Narrow brick wall factor	1.15	-	Shear friction coefficient	0.60	-
Compression on bed joints	5.75	N/mm ²	Limiting shear	1.40	N/mm ²
Compression // bed joints	5.75	N/mm ²	Vertical shear- bonded	0.50	N/mm ²
Flexure			Elastic modulus		
Horizontal span	1.10	N/mm ²	Short term	4.50	kN/mm ²
Vertical span	0.40	N/mm ²	Long term	2.25	kN/mm ²

Characteristic vertical loads

Load category name	Near	
	Load (kN/m)	Ecc. mm
Dead load 1	66.000	0.000
Dead load 2	10.300	0.000
Imp. Load 1	5.800	0.000
Imp. Load 2	26.100	0.000

Characteristic lateral wind pressure

Category name	Pres. top kN/m ²	Pres. Bottom kN/m ²
Lateral press 1	34.000	34.000


Characteristic lateral line load

Category name	Load kN/m	Height from bottom mm

Note: For details of more than two loads please refer detailed report

Summary results (critical load combinations)

<i>Description</i>	<i>Wall</i>	<i>Status</i>	<i>Units</i>	<i>Description</i>	<i>Near</i>	<i>Status</i>	<i>Units</i>
Lateral load capacity	6.986		kN/m ²	Max. slenderness ratio	27		
Design uniform load	47.600		kN/m ²	Actual	8.656		
Utilisation	6.814	Fail		Utilisation	0.321	Pass	
Load combination	1.40D+1.20I+1.40						
Limiting dimension / area							
Allowable	11000		mm				
Actual	2539		mm				
Utilisation	0.231	Pass					

	Internal Wall - Roof	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
		Calc No	
		Page No	1

Masonry Wall Panel Designer MAX V2.24 (Build 237) Copyright © Computer and Design Services Ltd.

MATERIAL AND DESIGN DATA

Material properties

<i>Data item</i>	<i>Near leaf</i>	<i>Units</i>
Masonry unit Properties		
Masonry unit product	User defined	-
Masonry unit type	Clay brick	-
Water absorption	7% - 12%	%
Unit mean compressive strength	20.0	N/mm ²
Unit minimum width as tested	220.0	mm
Unit height as tested	65.0	mm
Unit height as built	(laid normal) 65.0	mm
Density of wall / leaf as built	15.0	kN/m ³
Mortar property		
Mortar selection	Designated	-
Mortar designation	M4 (iii)	-

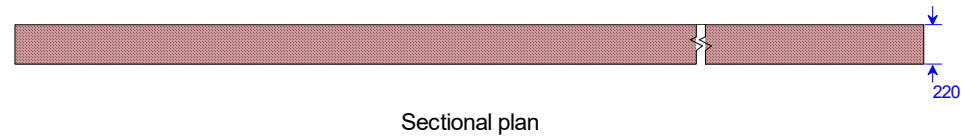
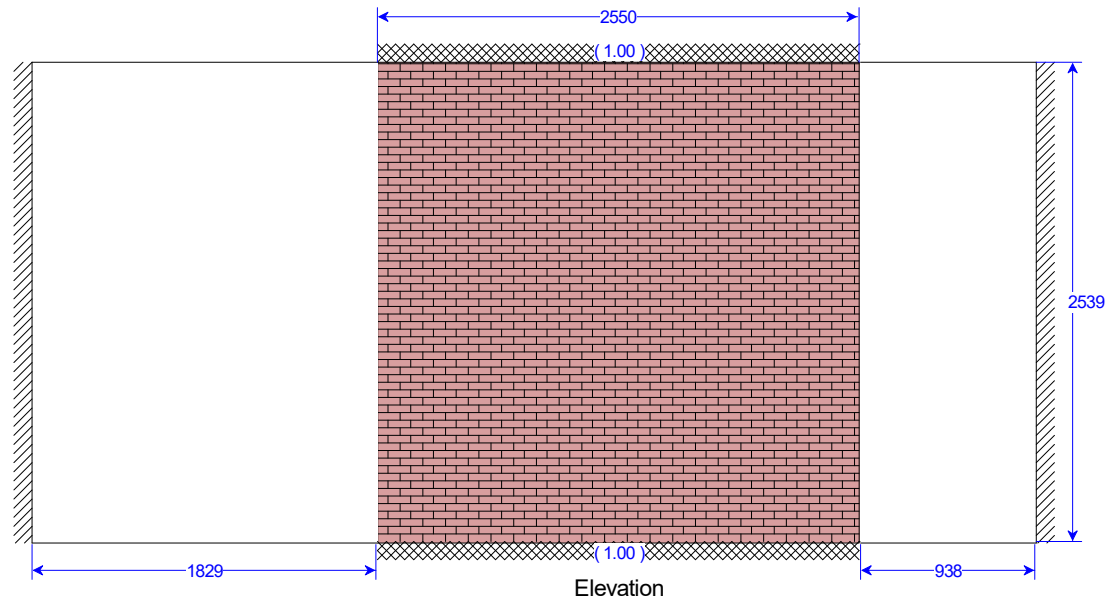
Partial safety factors for material strength

<i>Data item</i>	<i>Near leaf</i>
Partial safety factors	
Reinforcement tension	1.15
Masonry flexural tension	3.00
Masonry compression	3.50
Masonry shear	2.50
Masonry ties	3.50


Calculation options

<i>Data item</i>	<i>Options</i>
Section analysis	
Vertical load capacity check	Yes
Include eccentricity due to slenderness	Yes
Section resistance moment option (Near/Far)	
Top edge	Cracked
Mid height	Cracked
Bottom edge	Cracked
Opening effects	
Opening - edge influence angle	
Left / right edge (deg)	30
Top / bottom edge (deg)	30
Maximum strip width / span ratio	0.25
Maximum strip width / cantilever ratio	0.50
Dimension and deflection limits	
Design code	BS 5628-1 and 2:2005
Maximum slenderness ratio	27
Limiting dimensions check	Yes
Minimum span/deflection ratio	250
Minimum cantilever/deflection ratio	125
Maximum absolute deflection (mm)	20.00

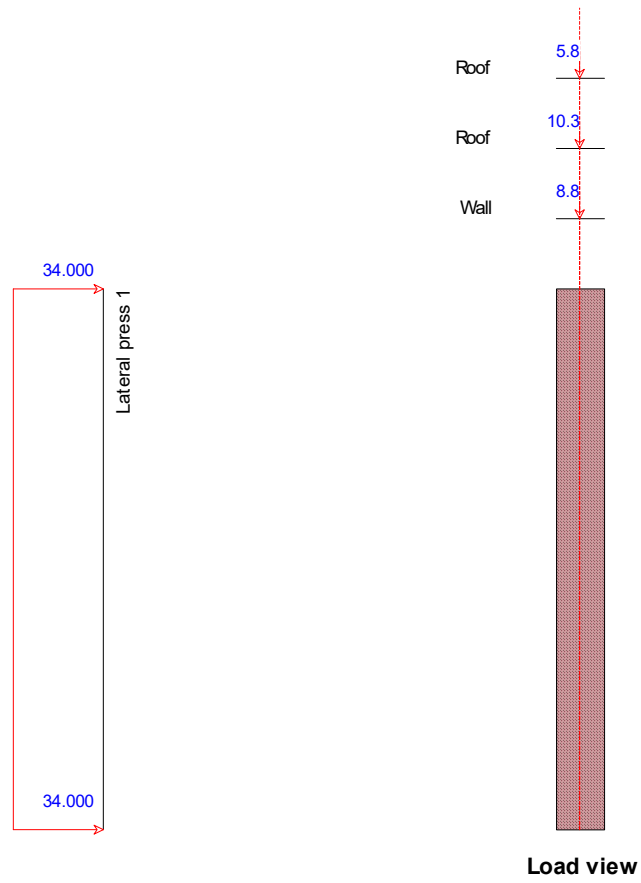
Notes:





Note: Figures in brackets eg: (1.00) shown in elevation indicate user defined proportional fixity/continuity factor applied before allowing for openings.

	Internal Wall - Roof	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
		Calc No	
		Page No	2

Units
Vertical load - kNm
Eccentricity - mm
Lateral pressure - kNm²



	Internal Wall - Roof	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
		Calc No	
		Page No	3

	Internal Wall - Roof	Job No	MA11229
		Job Ref	
		Designed By	
		Checked By	
		Date	24/ 5/2021
		Revision No	
	Calc No		
	Page No	4	

Masonry Wall Panel Designer MAX V2.24 (Build 237) Copyright © Computer and Design Services Ltd.

Data item	Near
Bed joint reinforcement	No
DPC - top	No
DPC - bottom	No

Note:

1. For details of masonry units, bed joint reinforcement and damp proof course refer to 'Material and design data'
2. For details of wall ties (if specified) refer to 'Concise' or 'Detailed' report.

Masonry characteristic strengths

Description	Near	Units	Description	Near	Units
Design code	BS 5628-1 and 2:2005		Shear		
Compression			Shear without compression	0.15	N/mm ²
Narrow brick wall factor	1.15	-	Shear friction coefficient	0.60	-
Compression on bed joints	5.75	N/mm ²	Limiting shear	1.40	N/mm ²
Compression // bed joints	5.75	N/mm ²	Vertical shear- bonded	0.50	N/mm ²
Flexure			Elastic modulus		
Horizontal span	1.10	N/mm ²	Short term	4.50	kN/mm ²
Vertical span	0.40	N/mm ²	Long term	2.25	kN/mm ²

Characteristic vertical loads

Load category name	Near	
	Load (kN/m)	Ecc. mm
Dead load 1	8.800	0.000
Dead load 2	10.300	0.000
Imp. Load 1	5.800	0.000

Characteristic lateral wind pressure

Category name	Pres. top kN/m ²	Pres. Bottom kN/m ²
Lateral press 1	34.000	34.000

Characteristic lateral line load

Category name	Load kN/m	Height from bottom mm

Note: For details of more than two loads please refer detailed report

Summary results (critical load combinations)

Description	Wall	Status	Units	Description	Near	Status	Units
Lateral load capacity	2.109		kN/m ²	Max. slenderness ratio	27		
Design uniform load	47.600		kN/m ²	Actual	8.656		
Utilisation	22.565	Fail		Utilisation	0.321	Pass	
Load combination	0.90D+1.40Lp1						
Limiting dimension / area							
Allowable	11000		mm				
Actual	2539		mm				
Utilisation	0.231	Pass					



MLTS Limited,

Structural Engineers,

55 Mill Road,

Lode,

Cambridge.,

CB25 9EN

Tel.: - 01223 812644

Email: -mlts@bopenworld.com

Date: 28th February 2020

FAO Estates and Facilities Department,

External Planned Maintenance,

Cambridge City Council,

DRAFT ONLY UNCONTROLLED ISSUE V1

130 Cowley Road

Cambridge

CB4 0DL

Preliminary Report on the Apparent Cracking within the External Façade Brickwork, Concrete Façade Panels and Year 2 Urgent Remedial Works of Princess and Hanover Courts, Cambridge, CB2 1JJ and CB21 JH

Introduction

The following report has been prepared at the request of our Client following the identification of apparent cracking within the external walls of the property in particular in the region of the gable end, flank and internal communal areas wall, identified by the contractors namely, Initially Kier and then Fosters Ltd and SJW Ltd while carrying out various planned works on the buildings.

For Year 1 works see separate report for the Year 1 urgent remedial works to the eastern load bearing piers and the corners of the building at the south eastern gable end corner of each building.

This report relates solely and specifically to the nature, causes and consequence of this reported apparent movement and cracking by others within the property and not specifically to any other aspect of the property or its condition.

This report is provided for the sole use of the client and is confidential to the client. No responsibility whatsoever is accepted or extended to any other party other than the client. Consequently, the contents or part thereof of this report are not to be relied upon by any third party whatsoever. The rights of any third party do not apply in any way to this report.

This report is confined to structural matters only and it does not cover the deterioration of the structure through fungal or insect attack, nor does it deal with other defects of a non-structural nature.

We have not inspected any parts of the structure and fabric unexposed or inaccessible and we are therefore unable to report that any such parts of the property are free from defect. Principally, no wall, floor or roof coverings were removed so the opinions expressed in this report are purely based mainly upon visual inspections. No drains were inspected, or manholes lifted to inspect any drains and any such inspection would be carried out by a specialist camera survey and report as instructed separately by our client.

Records: -

If any construction records, historical architectural and or building drawings are found then we will be able to comment further, but so far, no such records and or documents have been presented to us nor any brief to conduct such searches for such documents, specifications and drawings which may well have been lost in the passage of time due to the age of the property?

No asbestos survey was available nor have we been briefed to comment upon such matters as to the presence of asbestos in the property. No drainage and or services surveys were made available to us.

We have not been instructed to check for the presence of High Alumina Cement (See Separate GBG HAC Report), Calcium Chloride or for the incidence of Alkali Aggregate Reaction within any concrete elements of the structure, thus we cannot confirm that any such structural elements are free from defect. We do recommend that such sampling and tests are undertaken on behalf of our client should any suspicion arise in regard to such matters but none are reported at present giving such concerns nor are we additionally briefed to comment upon such matters. No asbestos survey was available nor have we been briefed to comment upon such matters as to the presence of asbestos in the property. The HAC survey has been conducted by GBG for Cambridge City Council and their separate report is available within the information pack.

We have not been furnished with any records, drawings, specifications, and or details of the construction of the property and its foundations.

Information regarding rights of way, easements, agreements, encroachments, disputes, statutory notices, adjacent ownership of the neighbouring properties and the precise location of the boundaries has not been made available to us during our inspections or whilst preparing this report.

The inspections were generally carried out on clear days and in good visibility and recorded with photographs and contemporaneous notes on white boards by the contractor's inspectors.

The Objective of these visual surveys and report is to determine the likely cause of the apparent movement and cracking, prior to commencing any further verifying investigations in order to report on the apparent cracking observed by another contractor's surveyors, prior to commencing further repairs in Year 3 works to be specified by others following on from the records for Year 2.

Contractors Surveys, Lists of Facade Defects and Repair Locations and Record Drawings by MLTS Ltd.

A considerable amount of information in the information pack has been handed over by MLTS Ltd to Millwards and thus Mace at the meeting on 13th February 2020 along with a A3 file of the drawings and list and other useful information including the Dropbox link. All this information is in the Dropbox and on a USB stick containing all the contractor's photographs, site records of the cracks and defects at each location along with the urgent repairs made in Year 2. The contractor's Excel spreadsheet and MLTS Ltd record drawings based upon this information were also included. Also, included is the original SIKA repair specification and the Sika materials details and the Helical bar reinforcement materials. Due to the volume of this information, which is considerable, it has been handed over electronically a memory USB stick (Pink) at the handover meeting.

Year 1 Urgent Works - See Sika Specification Folder and Specs and Documents Folder for Year 2 Documents and Urgent Repairs.

Dropbox > 2017 to 2019 Princes Hanover Parapet Panels Repairs YR 1 and 2 Works CDM >



Documents Folder for Year 1 Documents and Urgent Repairs Report.



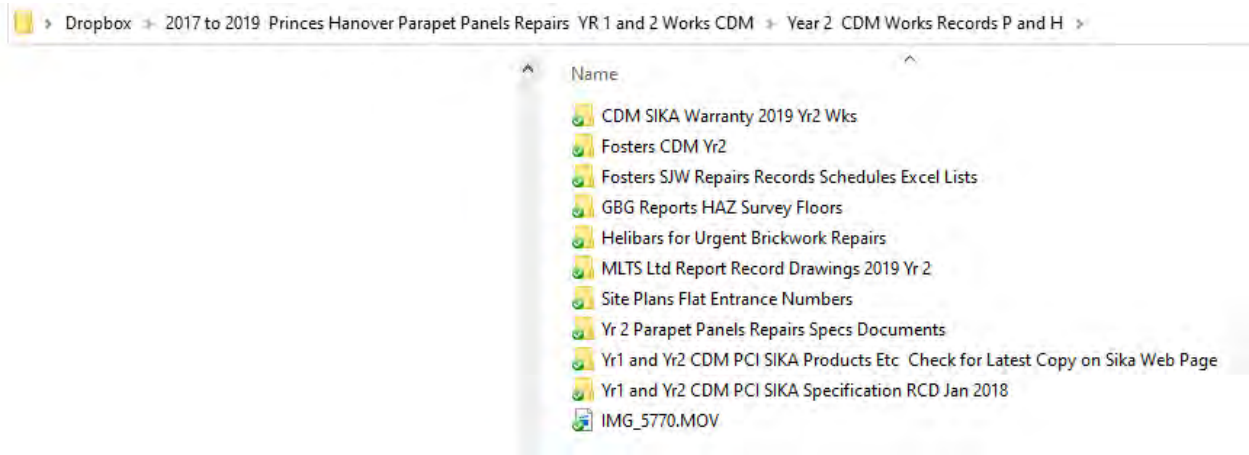
Year 2 MLTS Ltd Record Drawings see attached and MLTS 2019 Year 2 Folder and Fosters Records Folder below and in the Dropbox link shown in blue text.

For Sika Specification See Sika Specification Folder

For Helical Bar / Helifix Primer WB and Helibond Resin See Helibars for Urgent Repairs Folder

All in Folders below on USB Stick and in the Dropbox at

<https://www.dropbox.com/sh/5d97kjsdhsn4ur/AADsGC7RrhhyQgUluZnIQ8REa?dl=0>



Introduction and Scope of Our Brief:-

The Project and Brief: - Our Original brief was initially set up by CCC as the Year 2 Parapet Panel Repairs Project following certain Year 1 urgent repairs to the eastern and gable low level brickwork cracking on Hanover and Princess Court buildings which identified various structural cracking and damage to the Parapet Panels. Due to, discarded and corroding scaffolding fixings left in the external facing brickwork and concrete parapet panels during previous roofing contracts to secure the temporary handrailing. In addition, certain damage due to deterioration of the concrete and reinforcement corrosion within the parapet panels over the life of the building, had also been identified.

Subsequent Further Investigations of the cracking within the facades and spalling and cracking concrete parapet and balcony panels were also commenced within Year 2 due to discoveries made during the Year 2 works once the buildings could be accessed above the second storey level.

A “Tap Test” was carried out and loose materials was taken of the concrete parapet panels which posed a dangerous hazard to people below particularly when entering or leaving the building or merely passing by and the parapet panels were repaired using the Sika system as planned, to make these parapet panels safe.

During these initial Year 2 Concrete Parapet Works further findings on the facades of the buildings were discovered, including extensive brickwork cracking in the facades and the various towers, together with loose and spalling concrete due to concrete deterioration and reinforcement corrosion within the concrete balcony panels.

These discoveries have significantly expanded the survey and urgent brickwork repairs project during 2018 and 2019 due to the contractor’s further findings on site, as they have had the benefit of close access (within arm’s length from the building at high level).

Consequently, the contractors were commissioned further by CCC during the initial Year 2 Works and investigations to make photographic records of each location of a defect / brickwork crack / concrete spalling.

These additional Year 2 works also followed on from the brickwork repairs and stiffening piers at low level in Year 1 located on the eastern side.

All the contractors records have been recorded on site and written up in lists and these results have subsequently been reviewed and drawn up by MLTS Ltd. to illustrate and confirm the interpretation of these results only for internal use in respect of this report on Princess and Hanover Court residential buildings facades relating solely to the concrete and brickwork repairs and for no other purpose whatsoever.

The information contained within the records and record drawings is based upon the survey information from SJW Ltd and Fosters, but principally the daily SJW facade survey records. Any use a second or third party makes of these documents, or any reliance on or decisions to be made based on the documents, are the responsibility of such parties. MLTS Ltd. accepts no responsibility for damages, if any suffered by individuals or firms as a result of decisions made or actions taken based on these drawings and documents.

The copyrights to these drawings and documents are exclusively owned by the original authors i.e. SJW Ltd and Fosters in respect of their survey information and MLTS Ltd in respect of their further work on this survey data including the photographs and documentation supplied by SJW. The record drawings are only schematic and are strictly limited for the purpose of illustrating the general building layout and repair locations and are not to be used for any other purpose whatsoever.

This report and drawings and documents shall not be copied, reproduced, or altered in any way by any means or method, nor shall they be distributed to any individual or companies without prior written authorization from the original authors SJW, Fosters and MLTS Ltd.

Location of the Buildings and their Orientation



Location of the Two Buildings at Princess and Hanover Court View from the South.

Also See MLTS Drawings, Dropbox Folders, Flat Entrance Numbers.

Note the orientation of the buildings particularly Hanover to the east which stands well above the local topography at eight storeys high and is exposed to the dominant westerly winds.



Site Location Plan from Cambridge City Council

General Views of the Buildings: from the South showing the Fetch from the West.



View from the South showing the wind shielding topography from the East but much less shielding in the fetch to the West See above views and below from Google Earth and Bing Maps.



Another View from the South showing the wind shielding topography from the East but much less shielding in the fetch to the West See above views and below from Google Earth and Bing Maps.

Description of the Two Buildings at Princess and Hanover Court.



General View of the Tallest Block Hanover Court Eight Storey High – Eastern Elevation

Note: - The slender Bin Chute Tower located towards the left (south) of this view.

Note: - the Lift Shaft Tower located at the far-right hand end of the building (north) emerging out of the Newton Road Car park building also built in the same brutalist style and in the same brown brickwork circa 1968



Hanover Court Western Elevation: - Note the grey Sika 903 and Sika 610 temporary blinded areas on the concrete balcony panels. See SJW Photographs and lists of the defects and locations and MLTS Ltd Drawings for overall view of these records.

Princess and Hanover Blocks of Flats: - appear to be masonry “cross wall construction” buildings with transverse masonry gable ends and internal party walls providing transverse stability and resisting lateral wind load acting on either of the main Eastern and Western elevations.

The longitudinal external walls and some internal longitudinal walls provide longitudinal stability to resist wind loads acting on the gable ends.

The internal floors appear to be formed from precast prestressed concrete hollow core planks spanning from gable wall to party wall and so on in a sequence of individual spanning floor units from the southern gable wall until the reaching the northern gable end wall.

The brutalist architectural design has resulted in large openings in the main eastern and western facades and smaller openings in the gable walls causing various stress concentrations. These openings and the internal offsets in the eastern flank walls located at ground floor and first floor levels complicate and intensify the stresses within the brickwork walls due to vertical loads and further more during heavy lateral wind load, particularly due to winds from the west causing increased vertical loading within the eastern façade to resist overturning of the whole structure. See Year 1 report for further evidence of caring due to vertical and wind loading.

Nb. The buildings do not appear to have a structural steel frame or a reinforced concrete framework of beams and supporting columns, and the structures are formed from masonry walls and cross walls and external piers instead i.e. cross wall construction.



Western Elevation of Hanover Court (Ditto, but only four storeys instead of eight for Princess Court)

Note: - the white painted concrete Balcony Panels on the eastern elevation of the building.

Investigations

The following investigations were carried out during the Year 2 Works to the two buildings following on from the remedial concrete repairs to the concrete parapet panels are summarised as follows: -

- 1) Tap Tests of the Balcony Concrete Panels and Visual Inspections of the external walls of the property including the main facades, the gable end walls and all the towers and their walkways and a certain amount of limited internal inspections within the external communal areas but excluding the staircases as instructed by CCC, which are to be include in Year 3 tap test investigations and recording each location with a photographs and a white board unique reference.
- 2) Digital Photographs to record the findings some of which are used in this report. Including detailed record photographs of each defect / crack and the urgent (class red) repairs which were undertaken by the contractors and all these records and photographs are in the information pack, CDM files for Year 2 works.
- 3) A desk study of the results of the all the above investigations and photographs together with any archive material sent to us by the client or information from other sources e.g. Google Earth and Bing.

Detailed Investigations and Contractors Works Year 2: -

- a) Contractors investigations and photographic records of the façade defects including cracking and spalling of the brickwork and the balcony panels following on from the parapet panel repairs.
- b) Subsequent repairs of the urgent / emergency items located within the brickwork and concrete parapet following on from Year 1 works and temporary balcony panel repairs and
- c) Classification of the intermediate structural issues of the cracking and spalling (Red / Yellow) as instructed by CCC. NB. Red items have been repaired within Years 1 and 2.
- d) Removal of loose concrete and temporary preparation and passivation with SIKA 903 and priming with SIKA 610 of the Balcony Concrete Panels on both buildings, pending year 3 concrete repairs.
- e) Deferment of the remaining brickwork repairs (Yellow Class) to the east and west facades of the buildings to Year 3
- f) Recording of the internal communal areas cracking with the façade brickwork within the buildings. Nb. this brickwork also helps to resist lateral wind loading.
- g) Testing and sampling of the prestressed external staircase and internal walkway concrete panels for High Alumina Cement and HAC Conversion and Calcium Chloride, see separate GBG report, as recommended by MLTS Ltd.
- h) Taking of various independent photographs and carbonation testing of spalled concrete and loose concrete arisings.
- i) Sampling at limited locations by metal detection on the brickwork panels to ascertain the sample pattern of the brickwork ties within the masonry walls and opening up of a brickwork tie on a tower.
- j) Testing, on a sample balcony panel on Hanover Court located at low level, of removing the old paint on the Existing Concrete Balcony Panels to determine suitability for repainting using Sika anti-carbonation paint 675c
- k) Collation and drawing up of the contractors results into CAD drawings to interpret the results for writing up the record prior to others tendering the remaining works for year 3.

Note: - All Year 3 Investigations and remedial works to be quantified from Fosters and SJW lists and record photographs and specified by Millwards and MACE alone.

Summary of the Findings: -

The following findings were made from the investigations above: -

Example Findings - Starting with a Brief Review of Year 1 Works: Leading into Year 2 Works-



Eastern Side of Hanover Court Typical Entrance Structure Ditto Princess Court: -

Note the entrance crippling the supporting pier above and the concrete lintel over resting upon the staircase structure and brickwork, repaired Year 1.

NB: - The main drains are understood to run along under these staircase structures and the eastern slender bin chute towers adding to the issuers and potential issues with structural movements caused by drains and trees.

Corner of Hanover Court Before Year 1 Emergency / Urgent Repairs likely to be caused by strong wind loading causing lateral (east westerly direction) over tuning movement within the gable end wall.

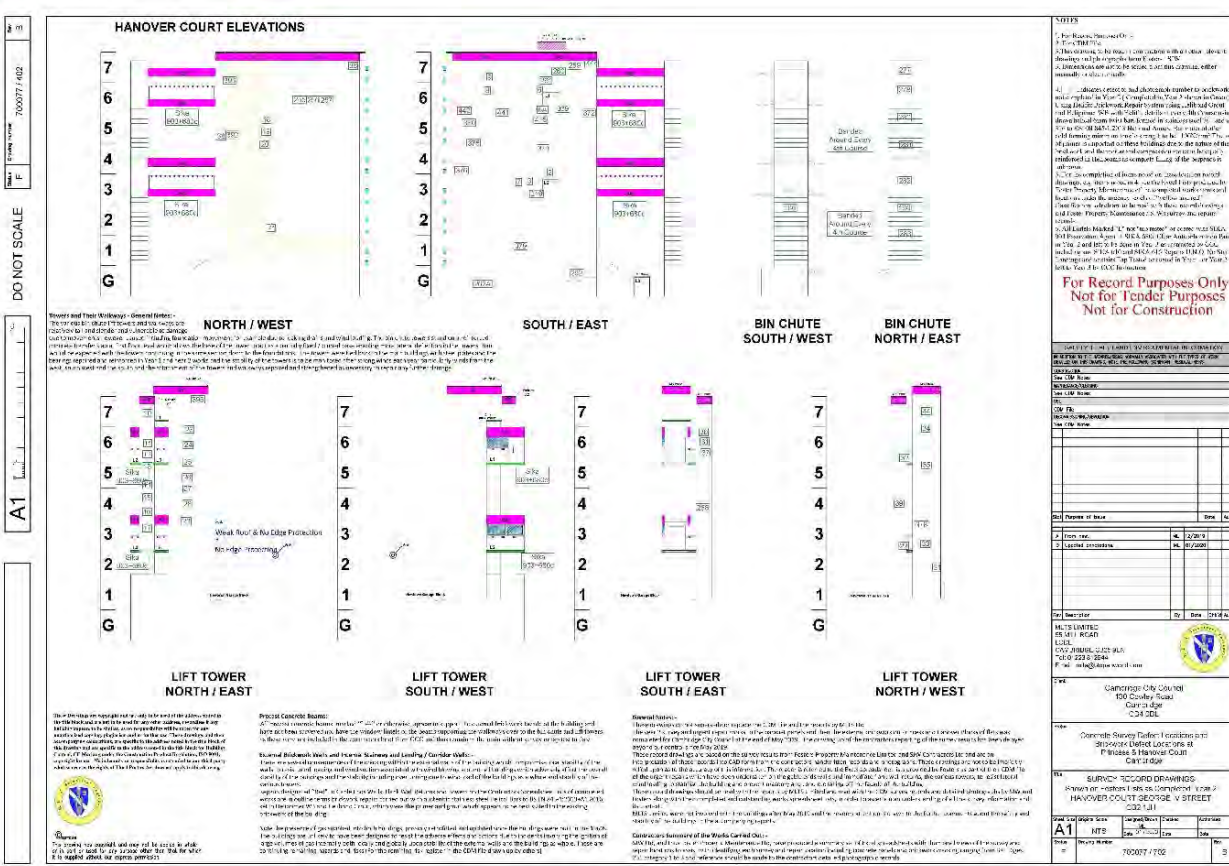
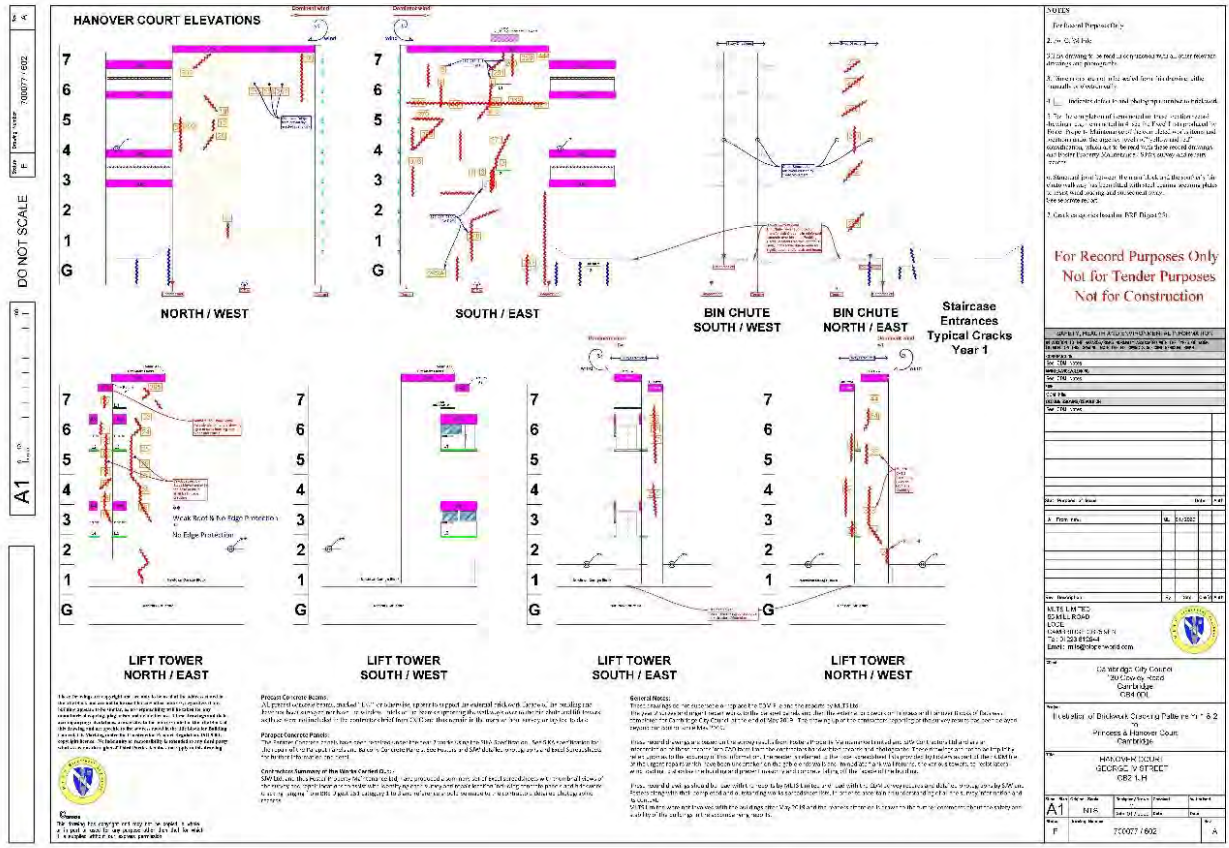


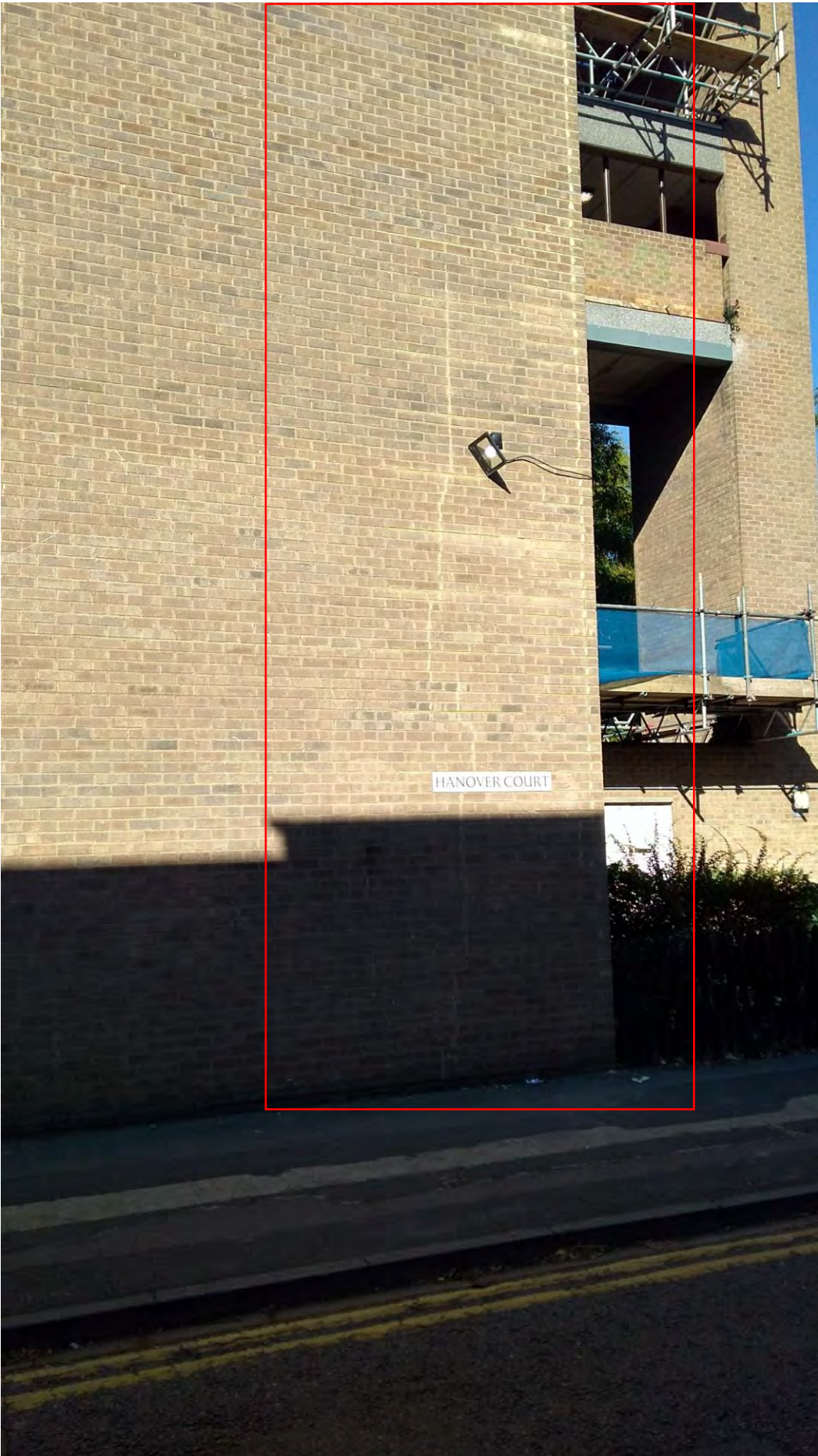
Year 1 and 2 Emergency Repairs due to wind loading acting with dead and live loading



Corner of Hanover Court after Urgent Repairs 2017 / 2019 (Year 1 and 2)

See Crack pattern drawings by MLTS Ltd 600 Series Drawings





Corner of Hanover Court after Repairs 2017 / 2019 Ditto Another View



Eastern Side of Hanover Court Typical Entrance Structure Cracking - Repaired in Year 1 Urgent Works

Note the entrance crippling the supporting pier above and the concrete lintel over resting upon the staircase structure and brickwork

NB: - The main drains are understood to run along under these staircase structures and the eastern slender bin chute towers adding to the issues and potential issues with structural movements caused by drains and trees.



Eastern Side of Hanover Court Typical Entrance Structure Cracking -Repaired in Year 1 Urgent Works: -

Note the entrance crippling the supporting pier above and the concrete lintel over resting upon the staircase structure and brickwork

NB: - The main drains are understood to run along under these staircase structures and the eastern slender bin chute towers adding to the issues and potential issues with structural movements caused by drains and trees. Thus, it is imperative that the drains are maintained and do not leak and compromise the formation supporting the foundations.



Eastern Side of Hanover Court Typical Entrance Structure Cracking -Repaired in Year 1 Urgent Works

Note the entrance crippling the supporting pier above and the concrete lintel over resting upon the staircase structure and brickwork

NB: - The main drains are understood to run along under these staircase structures and the eastern slender bin chute towers adding to the issues and potential issues with structural movements caused by drains and trees. Thus, it is imperative that the drains are maintained and do not leak and compromise the formation supporting the foundations.



Eastern Side of Hanover Court Typical Entrance Structure Cracking: Internal View - Repaired in Year 1 Urgent Works

Note the entrance crippling the supporting pier above and the concrete lintel over resting upon the staircase structure and brickwork

NB: - The main drains are understood to run along under these staircase structures and the eastern slender bin chute towers adding to the issues and potential issues with structural movements caused by drains and trees. Thus, it is imperative that the drains are maintained and do not leak and compromise the formation supporting the foundations.



**Eastern Staircase of Hanover Court Typical Entrance Structure - Cracking Internal Northern Side:
Repaired in Year 1 Urgent Works**



Typical example of the Eastern Flank Wall Cracking due to vertical load overloading by the two heavily concrete lintels on both sides supporting the brickwork façade above probably exacerbated by additional vertical load due wind load on the western side and possibly exacerbated by frost attack.

Note the very slender 225mm wide pier below and the stress concentration at the top of the pier under the lintels with 112mm of bearing at the most for each lintel.



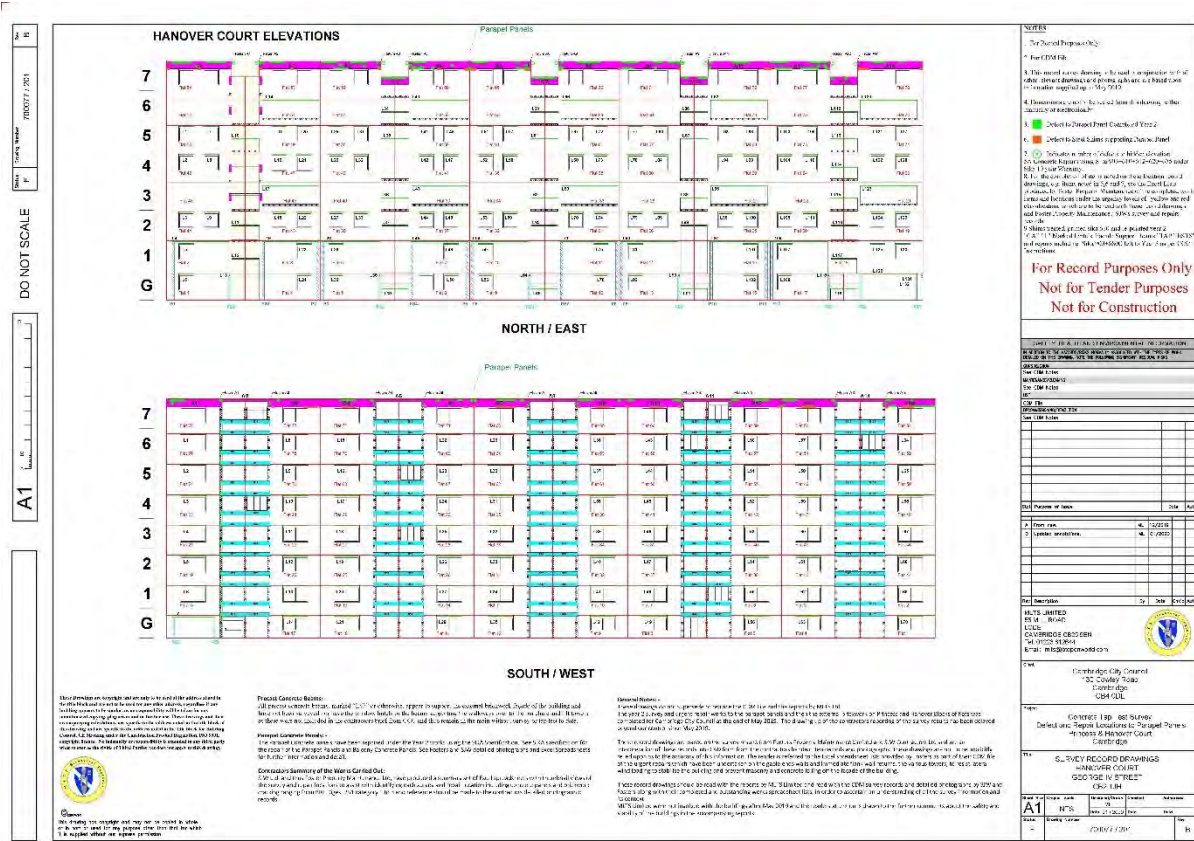
Ditto a closer view. Repaired and Piers stiffened - Repaired in Year 1 Urgent Works

Note: - apparently only 100mm of bearing onto the central pier by both heavily loaded lintels on either side. Note the crushed bricks in the façade located immediately above the pier.



General View of North Eastern Elevation Typical Parapet Panel Tap Test in Year 1 Prior to Year 2 SIKA Repairs SIKA 903 SIKA 610 SIKA 612 and Anti-carbonation Coating SIKA 675

Year 2 Parapet Panel Repairs See MLTS Drawings 200 Series



Findings Continued – Comments on Natural Actions: - Thermal Movements and Wind Loading: -

Thermal Movements within the Buildings Facades, particularly the brickwork: -

During the life of the building it has been exposed to a cold winter followed by particularly hot summers causing severe thermal movements, stress and strains within the facades, particularly the medium to dark brown coloured brickwork, which is vulnerable to absorbing the sun's radiation and heat in summer and radiating and losing the heat again during the winter

Movement Joints:- Although there is an apparent and obvious lack of brickwork movement joints within the brickwork facades, typical of buildings of this age, there are some compensations allowing some partial thermal stress relief due to the number of openings in the eastern façades and the returns, corners and balcony openings within the Western facades, mitigating some of the adverse effects of thermal movements and damage.

Cold weather allows the cold to penetrate into the relatively uninsulated structure and the fabric of the building raising moisture levels within the structure and fabric due to driven rain and condensation due to habitation of the building.

Recent Weather Patterns:- Long periods of sunshine during long summer days for example over several prolonged periods during 2018 / 2019 allow the heat to penetrate deep into the structure and the fabric of the building drying it out followed by rapid cooling of the facades due to rain. Thus, activating extreme thermal and dry to wet moisture movements with the brickwork, the bricks the mortar and the reinforced concrete beams, lintels and panels.

The amount of cracking within the facades has probably accumulated over the life of the building and added to the decades of cracking due to a complete lack of any movement joints.

Consideration of the Installation of Retro-fitted Movement Joints:- within the brickwork is likely to compromise the integrity of the brickwork panels to resist lateral loads particularly suction due to wind and nominal loads providing lateral restraints for the brickwork at floor and internal wall junctions to restrain the brickwork panels onto the main structure of the building. This could give rise to an increased risk of a panel or area of brickwork being sucked off the building.

Equally, minor cracks acting in patterns together can equally compromise the lateral wind loading integrity of the brickwork raising the risk of masonry falling off the surface of the building due to wind loading possibly exacerbated by the tendency for any brickwork to buckle under vertical loading, particularly if the brickwork is out of plumb or out of plane.

Lines of Likely Lateral Restraint of the Facades: - Year 3 Note: -

See MLTS Ltd Drawings where red lines indicate the likely lines of lateral restraints between the building and the external walls which should be verified in Year 3 further investigations to ensure they are indeed of an adequate nature.

Internal inspections, inner leaf cracking and precast concrete floor plank bearings:- Unfortunately, an empty flat or flats has not been available to examine the internal floor to external wall joints both along the building and particularly at the gable ends which may be dry lined with asbestos boarding, which will have to be removed to inspect the inner leaf of the gable end cavity walls to ascertain if they are cracked in a similar manner and pattern to the outer brickwork, forming the gable end walls.

From the examination of the internal communal areas within the buildings this suggests that the floor concrete planks may only have 112mm at the most and maybe less than 90mm of bearing onto the internal walls and beams and the inner leaf of the gable end walls potentially compromising robustness to resist disproportionate collapse. Again, as empty flats have not been made available then no checks could be carried out.

Wind Loading: - Adds to the vertical dead and live loads within the sides of the building, the gable end walls and particularly in the slender tower structures, to resist sideways loading / sway due to wind loading: -

Historically for example the buildings during 2018 and 2019 and probably during the 1980s, have suffered from strong westerly winds acting upon the buildings,

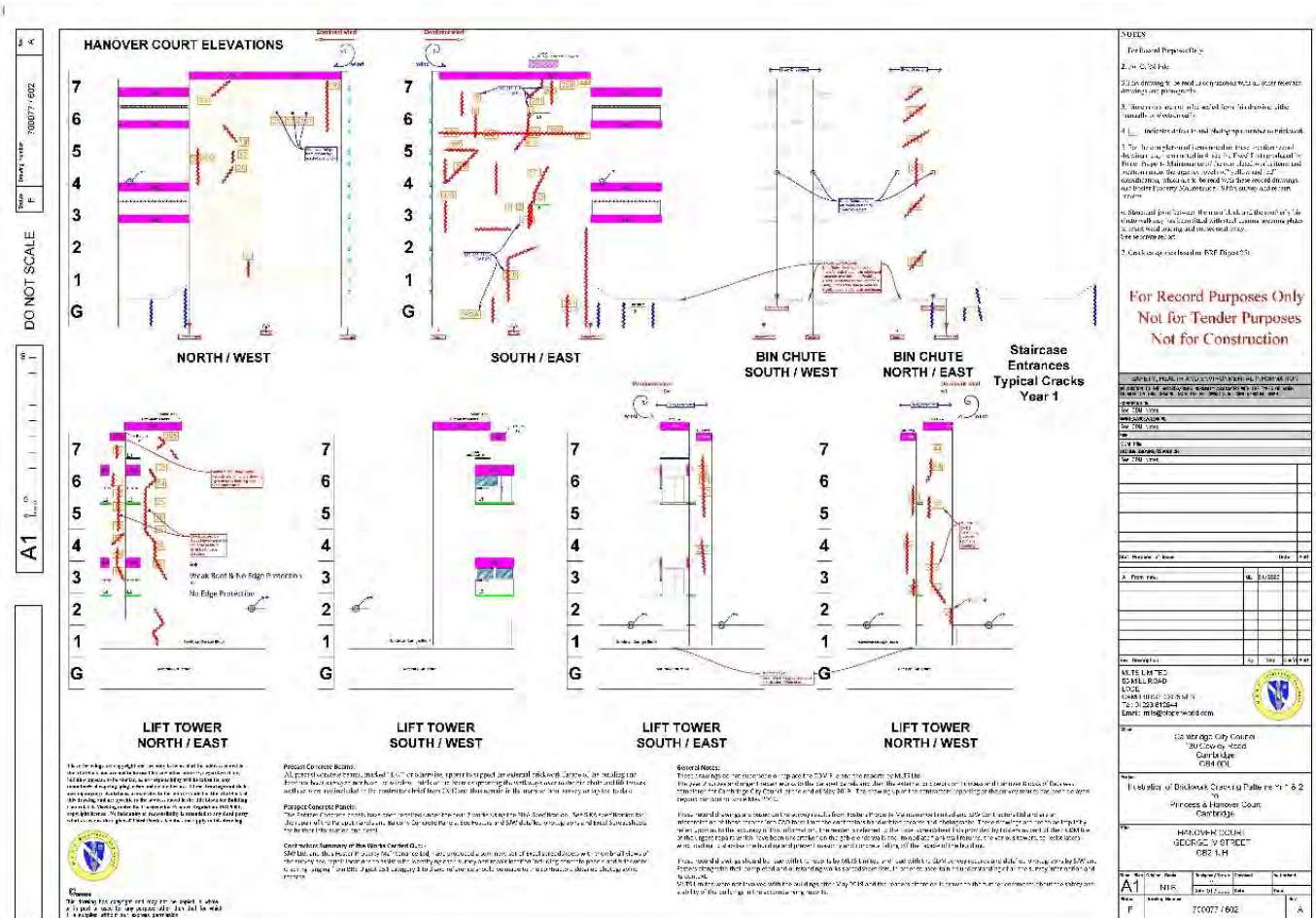
The gable end walls resist lateral loading / sway in order to stabilise the buildings, particularly against the westerly dominant and stronger winds acting on the main long western and eastern facades.

The cracking patterns within the gable end walls suggests damage principally due to wind loading acting on the structure due to the gables resisting lateral sway acting on the main building in order to stabilise the building.

The cracking patterns within the eastern and the western side walls also suggests damage principally due to wind loading acting on the structure due to the internal cross walls resisting lateral sway acting on the main building in order to stabilise the building.

The cracking patterns within the tower structures suggests damage principally due to wind loading acting on these structures due to their tall slender walls resisting lateral sway resisting wind loading.

See MLTS Ltd 600 Series drawings for illustration of the cracking patterns.



Towers: - These tall slender towers appear to act independently due their relatively slender nature, particularly the Bin Chute Towers.

These towers are not rectangular in plan consistently right down their entire height particularly and critically at the bottom of the towers adding to their flexure of the towers in strong winds.

See photograph below taken in a typical bin store of the transfer slab over the bins supporting the bottom of the tower above reducing the tower stiffness at the transfer slab to resist lateral sway and so partially forming in structural terms, a partial pinned base and supporting arrangement at the transfer slab level. This arrangement naturally exacerbates the sway and the movement of the top of the tower structure above.



Note: -Bin Chute Tower supported over the bin store

Note: - the concrete beam supports two sides of the tower above.

The bin store walls to the right support the other two tower walls.

See later findings regarding the tower construction and MLTS Ltd 600 series drawings regarding cracking patterns within the towers.



Hanover Western Side - Note the mobile access platform used to access and repair Hanover Court Building initially the Parapet panel Repairs and then the Balcony panels Tap Testing to remove loose concrete. .

Typical Site Record for each location of any defect resulting in SJW / Fosters Spreadsheet





Balcony Beam Typical Loose Concrete Removal: - Note the rusty square twist reinforcing bars buried within the precast concrete balcony panels.

Also note the crack in the masonry party wall on the western side due to the loading including wind loading compression load due to wind acting on the eastern side of the building.





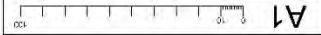
Typical loose Balcony panel corner Removed Easily by Hand.



Hanover Court Tap Tested and Primed Panels with SIKA 903 and SIKA 610 Locally – Typical Example

Scale	700077 / 501
F	
B	

DO NOT SCALE



HANOVER COURT



SOUTH / WEST

- NOTES**
1. For Record Purposes Only.
 2. For CDM File.
 3. The record survey drawing to be read in conjunction with all other relevant drawings and photographs and are based upon information supplied up to 15/05/2019.
 4. Dimensions are not to be scaled from this drawing, either manually or electronically.
 5. Jackbolts (dotted to Concrete Hollow Beam / Panel) are used and Treated with Wash Star 1013 Passivation Paint and a minimum of 2 coats of Passivation in accordance with the Sika Warranty as per Sika Specification.

**For Record Purposes Only
Not for Tender Purposes
Not for Construction**

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
IN ACCORD WITH THE REGULATIONS WHISTLY ASSOCIATED WITH THE USE OF WORK
SUBSTANCE AND MIXTURES (SHAN) AND THE CONTROL OF WORKING
SUBSTANCES (COSHH) REGULATIONS 2002.
See COSH Notes
MATERIALS/WORKING
USE COSH Notes
CDM File
SHEAR/STABILITY/INFORMATION
See COSH Notes

Steel	Purpose of steel	Date	Rev	Auth
A	From rev.	16/12/2019		
B	Update dimensions	16/12/2020		

MLTS LIMITED
55 MILL ROAD
LOOSE BRIDGE CB28 3EN
Tel: 01223 872644
Email: mls@mltsperworld.com



Cambridge City Council
130 Cowley Road
Cambridge
CB4 4AL

Project
Concrete Top Test Survey
Defect Locations to Balcony Beams
Princes & Hanover Court
Cambridge

Title
SURVEY RECORD DRAWINGS
HANOVER COURT
GEORGE IV STREET
CB2 4JH

Drawn	Checked	Issue	Date	Rev	Auth
A1	N/S	Issue/Check	16/12/2019		
B	N/S	Issue/Check	16/12/2020		

700077 / 501

General Notes: An A3 update to replace the CDM file and the report by MLTS Ltd. The year 2 survey repair works to the parapet panels and from the general forward on Princes and Hanover blocks of flats was completed for Cambridge City Council at the end of May 2019. The drawing of the contractors reporting of the survey work has been released beyond our copyright since May 2019.

These record drawings are based on the survey reports from Foster Property Management Limited and SW Cam across the and are a record of the survey work carried out for the purpose of the CDM file and the report by MLTS Ltd. The drawings are not to be used for any other purpose. The drawings are not to be used for any other purpose. The drawings are not to be used for any other purpose.

These record drawings should be read with the reports by MLTS Limited and read with the CDM survey records and details photographs by SW Cam and Foster Property Management Limited. In order to ensure an understanding of the survey information a full set of drawings and photographs should be provided to the contractors and the drawings should be read with the reports by MLTS Limited and read with the CDM survey records and details photographs by SW Cam and Foster Property Management Limited.

Precast Concrete Panels: The precast concrete panels are marked '1' and otherwise appear to support the external brickwork. Inside of the building and have not been inspected nor have the window frames of the beams supporting the walkways over to the lift shafts and lift towers as these were not included in the contractor bid from CCU and thus remain in the main without survey or top tests done.

Balcony Concrete Panels: The Balcony Concrete Panels have been partially covered with Sika 3082+ Ferroguard to facilitate the reinforcing steel and Sika 3082+ Ferroguard to facilitate the reinforcing steel and Sika 3082+ Ferroguard to facilitate the reinforcing steel.

Contractors Summary of the Works Carried Out: The survey and repair work was carried out by the contractors and the drawings should be read with the reports by MLTS Limited and read with the CDM survey records and details photographs by SW Cam and Foster Property Management Limited.

The drawings are copyright of MLTS Limited and are not to be used for any other purpose. The drawings are not to be used for any other purpose. The drawings are not to be used for any other purpose.

The drawings are copyright of MLTS Limited and are not to be used for any other purpose. The drawings are not to be used for any other purpose. The drawings are not to be used for any other purpose.

The drawings are copyright of MLTS Limited and are not to be used for any other purpose. The drawings are not to be used for any other purpose. The drawings are not to be used for any other purpose.



Copyright © MLTS Limited 2019. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, without the prior written permission of MLTS Limited.

Parapet and Precast Concrete Balcony Panels - Carbonation

Note the only concrete retaining any alkalinity to help bars resist corrosion is turned pink by the carbonation test the remaining concrete is carbonated and has lost its natural alkalinity due to exposure to the environment. Note: - the almost complete carbonation of the lower drip detail on the panels containing the corroded reinforcing bars.



Another View



**Typical Removed Section of Balcony Panel Bottom Drip Detail found loose and painted over
Loosened due to steel bar corrosion**

Basic Brickwork Materials common to Princess and Hanover Court and the previous Car park (Newton Road Garages) Emergency Works which are Relevant to the Construction of the Two main Buildings and their Towers.

Issues Discovered during Year 0 - Newton Road Garages Works (located aside Princess and Hanover Courts and the lessons learned for the Princess and Hanover Buildings built in apparently the same brickwork: -



General Views of the unstable access ramp wall



Removal by hand of the loose and frost damaged brickwork – Note the easy separation of the bed joint mortar from the bricks and at the perpend joints. Indicating that the bond between the mortar and the bricks was not especially good possibly as result of the early use of plasticizers to keep the mortar workable for longer periods. Note the clean mortar bed separation with the removed bricks.



Ditto another view: - Removal by hand of the loose and frost damaged brickwork – Note the easy separation of the bed joint mortar from the bricks and at the perpend joints. Indicating that the bond between the mortar and the bricks was not especially good possibly as result of the early use of plasticizers to keep the mortar workable for longer periods.

Note the apparent lack of brickwork ties to tie the brickwork together, causing the separation of the 225mm brickwork, a significant structural defect.

Note the clean mortar bed separation with the removed bricks.



Ditto: -Note the dislodged bed joints two courses below the removal beds suggesting lateral shear failure and separation of the bed joints.

Note the clean mortar bed separation with the removed bricks.

Removed Brickwork again - Another View of the brickwork in the waste skip



Removal by hand of the loose and frost damaged brickwork – Note the easy separation of the bed joint mortar from the bricks and at the perpend joints. Indicating that the bond between the mortar and the bricks was not especially good possibly as result of the early use of plasticizers to keep the mortar workable for longer periods.

Note: - the bricks are almost clean of mortar by the time they are placed in the skip without any intended cleaning up of the mortar off the bricks.

Note: - The clean perpend and beds and the partially filled brick voids, perhaps the only lateral bed joint shear available at any bed due to the increased deadload or weight of the brickwork above.

The bricks appear to be medium strength facing bricks set in type 3 mortar.

Comment for Prospective Year 3 Works: -

Finding: - The incomplete filling of the perpend at the end of each pair of bricks potentially seriously compromises any Helical Beam strengthening design e.g. under windows, as the perpend can close due to the incomplete filling with mortar there for any Helibeam details should be designed with not only tension reinforcement located at the bottom below the neutral axis, but also installed above the neutral axis, if deflection is to be properly controlled and the intended strength in the Helibeam is to be achieved at all.



External View - Before the Year 0 Remedial works



External View - after the Year 0 Remedial works and the reduced and tied back external wall located aside the car access ramp.

Findings Continued - Brickwork and Concrete Parapet Panel Defects Due to Old Abandoned Steel Scaffolding Fixings left in the Facade of the Buildings: -

Old Scaffolding Fixings Damage due to Corrosion Bursting the Brickwork Loosening the Brickwork causing the Hazard of Falling Masonry onto Persons below. Particularly locations near Corners e.g. at 8 Storeys High or 4 Storeys High and as shown under the parapet panels.



Typical Examples of Old Fixings left Rusting and Expanding within the Masonry Façade of the Buildings



Typical example of a badly corroded fixing, presumably used to laterally restrain scaffolding, removed from high up on one of the buildings note the apparent increase in diameter bursting the brickwork. On no account should such ferrous / steel fixings be used on the building again nor any type that causes expansion of the brickwork causing splitting of the bed joints, the perpend and the bricks.



Ditto Another Closer View: - Typical example of a badly corroded fixing, presumably used to laterally restrain scaffolding, removed from high up on one of the buildings note the apparent increase in diameter bursting the brickwork. On no account should such ferrous / steel fixings be used on the building again nor any type that causes expansion of the brickwork causing splitting of the bed joints, the perpend and the bricks.

Scaffolding Products

ST 127 Ringbolt



Ring inside diameter (approx. 52mm) accepts scaffold tube.
Fits HKD anchors (For tensile loads only), HIS resin sockets and MFP-GP16 base plates
Stamped with "1270 Kgs MAX"

ST 127 ringbolt

00058253

Knock-in anchor



Shallow embedment depth anchor for use in "uncracked" mass concrete
It may work in other base materials but must be proved by site test and will probably require the capacity of the ties to be reduced leading to a consequential increase in the number of ties.
Note the minimum edge distances required.

HKV M16 x 65 socket

00384973



Typical example of a type of fixing, presumably used to laterally restrain scaffolding, removed from high up on one of the buildings note the apparent increase in diameter bursting the brickwork.

On no account should such ferrous / steel fixings be used on the building again nor any type that causes expansion of the brickwork causing splitting of the bed joints, the perpends and the bricks.



Similar fixing which is removable but is installed in a predrilled hole and wound in and out with a battery powered impact hammer thus splitting the reinforced concrete and brickwork – **Again a type of fixing to be avoided for use on the buildings which could split the bricks, the bed joints and the perpends or will split the concrete panels.**



Typical example of the brickwork splitting under the weight of the parapet panels and thermal / moisture movements at the corners - located at the corner over a communal stairwell. Note the typical failure through the beds and perpends and the bricks under the weight of the concrete panel above exacerbated over years of cyclic freezing and thawing and thermal stress pushing out the brickwork locally at the corners. Helical Repair required at every fourth course to the brickwork back into the building – Note the height this is occurring at the very top of the buildings. Note the stress under the parapet panel Shims see Blue Arrow



Top of Princess Court Bin Chute Tower corroded old Scaffold Fixing bursting the brickwork at High level

Bin Chute Towers Construction - Brickwork: -

Galvanised Butterfly Ties, securing the Outer Skin of the Facing Brickwork –

No Cavity just a 10mm to 12mm wide vertical open joint between the two layers of Brickwork.

Note: - the hole for the Dry Riser effectively weakening the tower near its base against both vertical and lateral loading.



Brickwork: - Only appears to be an overall with both layers of brickwork to be in the order of 225mm thick.

Note the butterfly ties are not sufficient to transfer shear between the layers of brickwork for composite action to occur they merely tie the brickwork together thus reducing the effective lateral stiffness of Brickwork to two layers acting alone rather than cross bonding the brickwork together to form one solid and much stiffer wall forming the bin chute tower structures.

(Shear applied to the butterfly ties due to lateral sway from Wind, per mm of height = $S.A.Y/I$ considering a rectangular section of the tower viewed on plan) See Earlier comments about the partial pinned base support arrangement of the bottom of the towers over the two bin stores.

Note: - the galvanising on the butterfly ties appears to still be sound possibly due to the density of the mortar and the facing bricks?

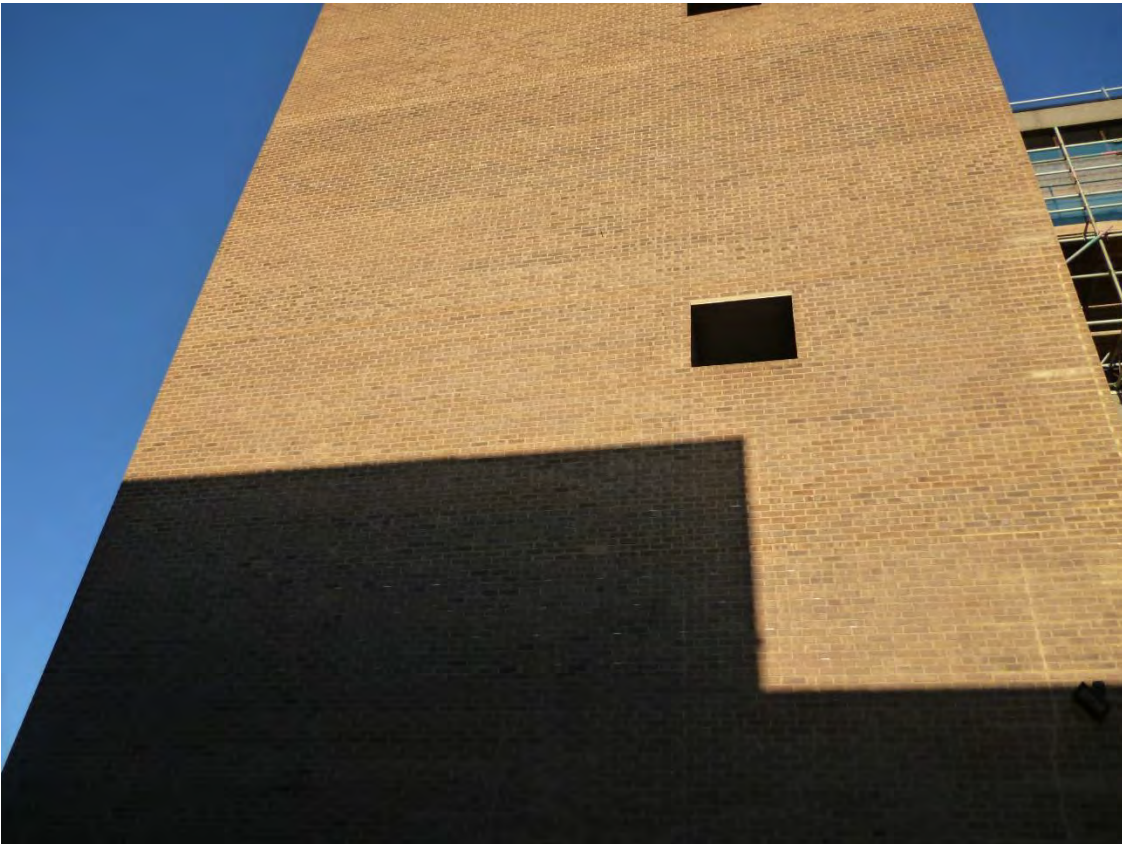
Sample Panels Detecting Brick cavity wall Ties Patterns: -



Princess Court Sample Panel – Tracing Brickwork Ties with metal detectors



Hanover Court Sample Gable End Panel Tracing Brickwork Ties – Note the unusual pattern



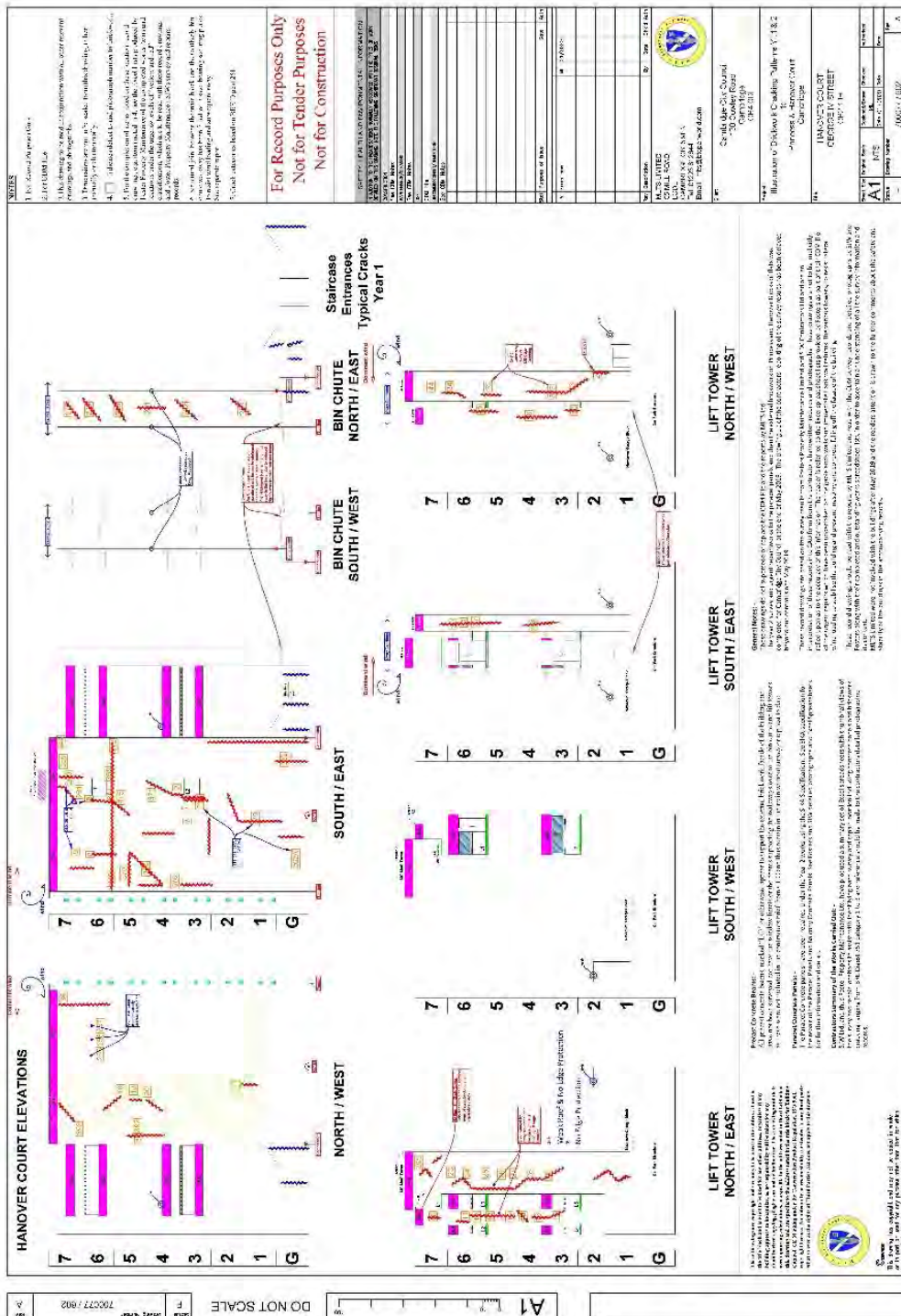
Ditto a view higher up note the short horizontal chalk marks for the tie locations.

SUMMARY DRAWINGS BY MLTS LIMITED: - EXAMPLES

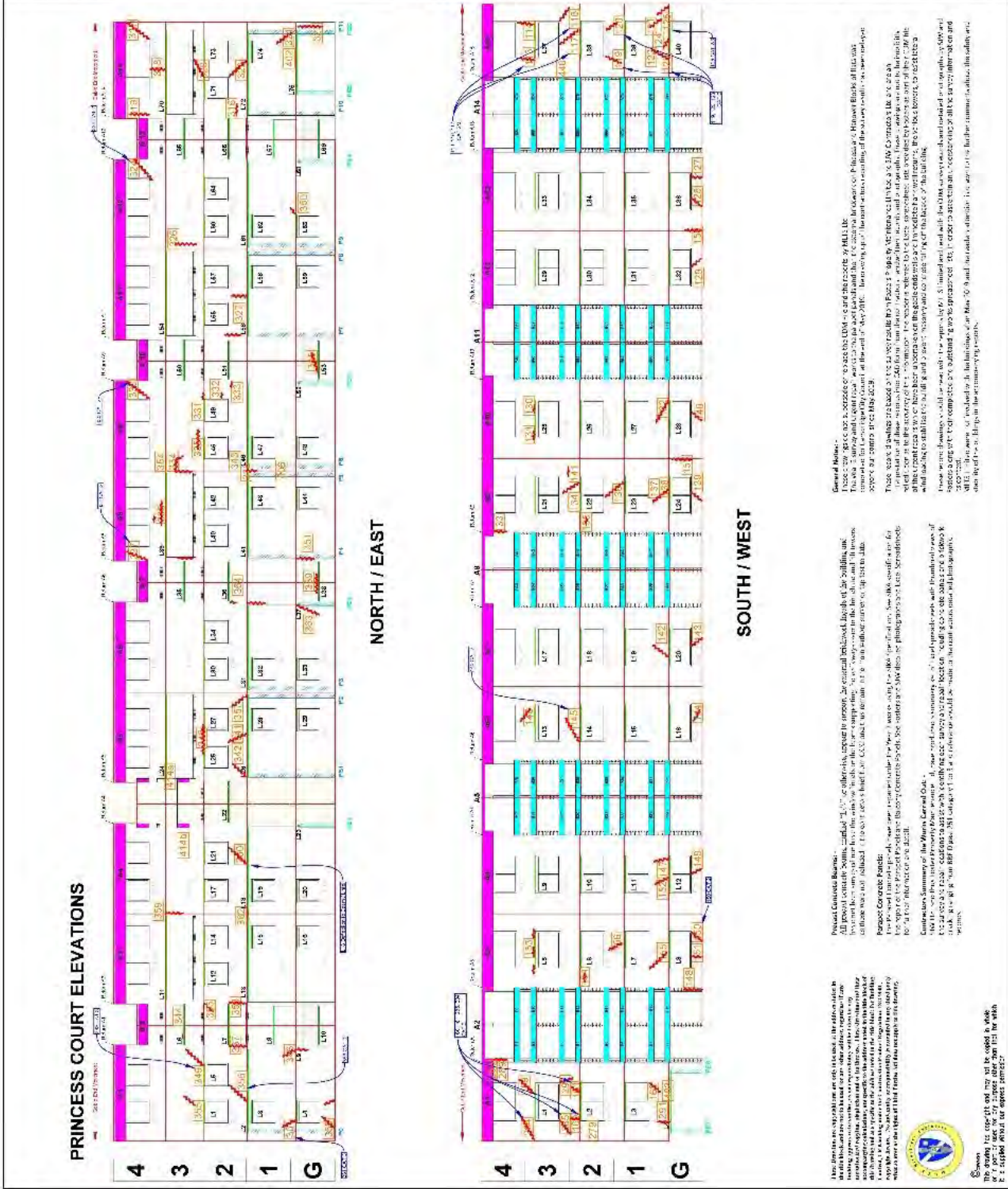
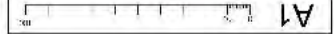
The illustrative drawings prepared from the results of the contractor's surveys suggests that the cracking patterns within the brickwork facades are more associated with wind loading rather than purely thermal moisture movements. Cracking around the bin chute tower walkway bridges bearings onto to the main building's facades has been discovered needing urgent repairs.

See Below Hanover for example and then Princess Court 600 Series Drawings Cracking Patterns

Note: - to read properly See A1 size Prints or A3 size at the minimum of the PDF files of these drawings located in the Dropbox.



DO NOT SCALE



NOTES

- For Record On Purposes Only
- For A1 & A2
- This drawing is to be used in conjunction with all other relevant drawings and details.
- Dimensions are in metres unless otherwise specified.
- Indicates a wall to be constructed.
- Indicates a wall to be demolished.
- Shows existing and proposed levels.
- Shows existing and proposed structural members.
- Shows existing and proposed finishes.
- Shows existing and proposed services.
- Shows existing and proposed landscaping.
- Shows existing and proposed signage.
- Shows existing and proposed furniture.
- Shows existing and proposed lighting.
- Shows existing and proposed parking.
- Shows existing and proposed roads.
- Shows existing and proposed boundaries.
- Shows existing and proposed easements.
- Shows existing and proposed rights of way.
- Shows existing and proposed public utilities.
- Shows existing and proposed private utilities.
- Shows existing and proposed drainage.
- Shows existing and proposed irrigation.
- Shows existing and proposed stormwater.
- Shows existing and proposed wastewater.
- Shows existing and proposed telecommunications.
- Shows existing and proposed power.
- Shows existing and proposed gas.
- Shows existing and proposed water.
- Shows existing and proposed sewer.
- Shows existing and proposed stormwater.
- Shows existing and proposed wastewater.
- Shows existing and proposed telecommunications.
- Shows existing and proposed power.
- Shows existing and proposed gas.
- Shows existing and proposed water.
- Shows existing and proposed sewer.

**FOR RECORD PURPOSES ONLY
NOT FOR CONSTRUCTION**

700076/6/501

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:

Project:
Client:
Location:
Date:

Scale:
Author:
Date:



Cracked Walkway Beam Bearing onto the Hanover Court Building – Note the tracing of the brickwork ties

Bin Chute Tower Walkways (giving access to the bin chutes from the building)



Typical Bearing onto the brickwork in the Building note the forces pulling the walkways support beams in and out! Of the building due to sway caused by wind loading causing the cracking at the bearings.



Ditto another view

Note: - The typical crumbling and cracking brickwork due to the combined vertical and horizontal loadings



With tie back plate to reduce the risk of the walkways and bin chute towers pulling out of and away from the building



Walkways support beams deterioration of the concrete beams and the bottom brickwork bed joints inadequately restraining these brickwork panels from overturning out of the building - prior to remedial works. Note defects to walkway flooring and walkway beam understood to be treated with SIKKA 903 and 680c Anti-carbonation paint.



Walkway side panels restraint posts fitted in Year 1 and Year 2 to prevent occupants pushing the unrestrained side walls with gaps at the ends removing any lateral restraint at the ends form overturning into the communal areas below.



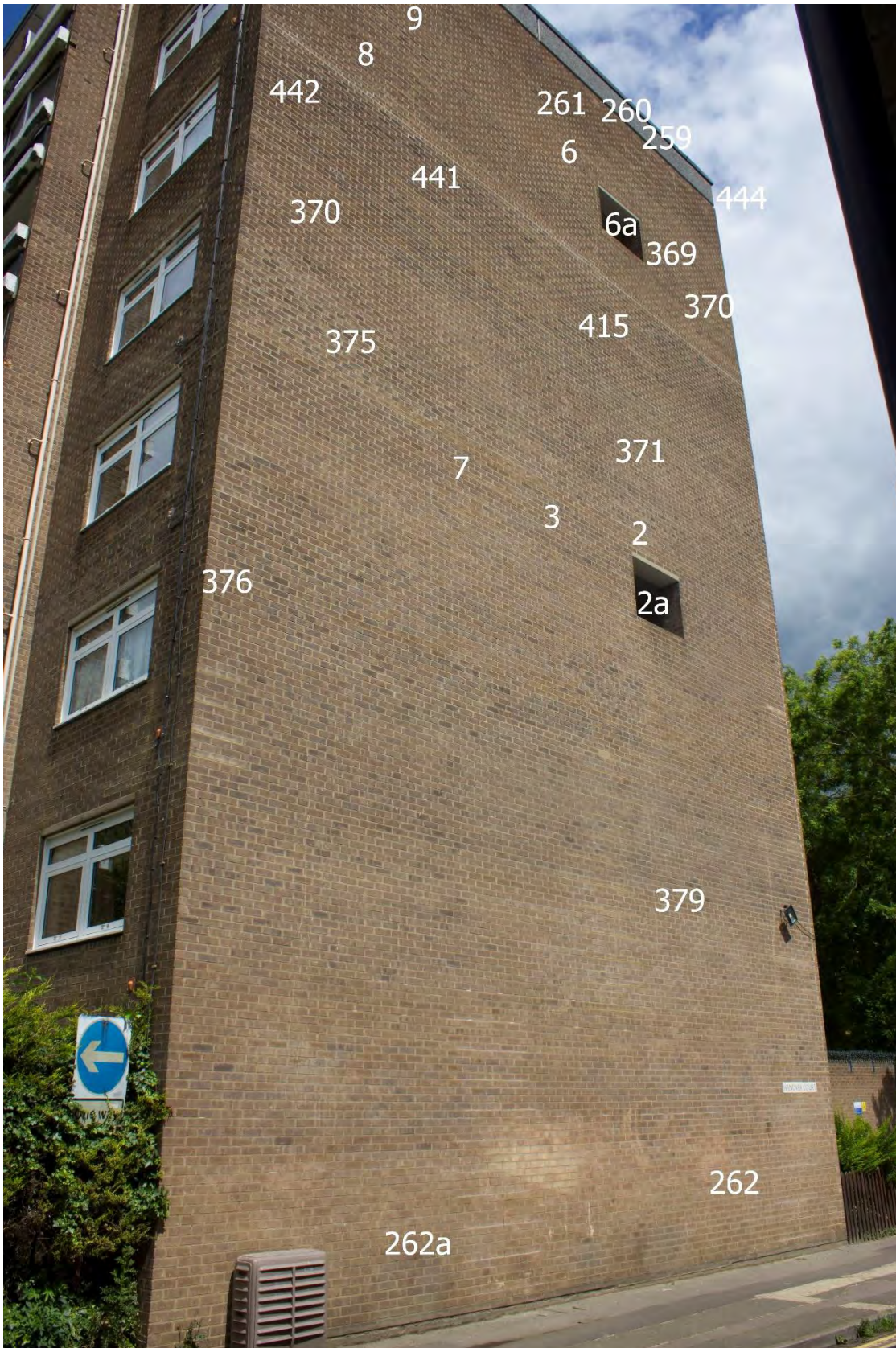
Example Repairs on Princess Tower



Example of - Crack Tracing on Princess Bin Chute Tower prior to Year 2 repairs



Hanover lift shaft tower repairs chased out ready for helical bar reinforcements showing the nature of the cracking presumably caused by the lift cage expanding during hot weather and binding in the gauge of the vertical rails within the tower itself causing bursting forces. Possibly exacerbated by wind loading. Note the lift rails will wear more towards the bottom of the lift than the top as the car always returns to the ground floor no matter what floor the lift serves as required by the user. If the cracking does not abate then consideration should be given to binding the tower all around the tower with reinforcement at for example every fourth bed courses to contain the bursting forces.



Typical Noted Elevation on Hanover court of Repair Locations Recording Defects and Repairs by Photograph Number using a whit wipe board

Discussion and Conclusions: -

All the findings to date regarding Princess and Hanover Courts including the site records, lists, reports, drawings etc from Years 1 and Year 2 and including Year 0 Works on the Newton Road Garages, indicate the following: -

Previously in 2016 and 2017- known as Year 1 Works: - CCCs and their contractors had identified issues on the eastern piers and staircase entrances due to overloading, probably during strong winds acting on the building as a whole. This has exposed issues with the original design of the buildings at ground and first floor levels due to heavily loaded slender piers, inappropriate location of the staircase entrances crippling these load bearing piers and the inset façade at ground level all on the Eastern facades of the buildings. The facade survey and remedial works were intended to continue on from Hanover onto Princess in Year 2 and the last stages were to be completed on Princess within Year 3 works – See drawings and Year 1 Report.

CCC and their contractors had also previously identified issues with loose and damaged areas of concrete within the parapet panels on both buildings during roof level inspection and Year 1 remedial works and this was to be repaired in Year 2.

The remedial works to the concrete parapet panels were the initial works planned for Year 2 works with the surveys of the external brickwork, the balcony beams and towers commencing in Year 2 due to serious concerns regarding the findings made on site during the course of the Year 2 works. The remaining survey and remedial works are now intended to be completed within Year 3.

Summary of the Façade Issues: - Basically, the buildings are suffering from cracking of the concrete elements due to their ongoing deterioration due to heavy atmospheric carbonation particularly the exposed aggregate decorative panels located around the parapet and the balconies. In addition, and to a lesser degree, the concrete lintels and beams supporting the brickwork facades and walkways around the various openings within the buildings. The staircases and landings were excluded from the Year 1 and 2 works and thus we cannot comment, only to say that these staircases are also reinforced concrete elements similar to the Kingsway Flats, which were found with deterioration and steel bar corrosion issues.

The Brickwork forming the facade cladding has various cracking issues due to combined dead, live and wind loadings. The bearings forming the supports to the reinforced concrete walkway support beams, the main lintels in the eastern elevations and the internal floor support beams within the open communal areas within the building, exhibit numerous examples of split and cracked masonry bearings needing urgent attention in order to restore the safety of the building. The apparent minimal 112mm maximum bearing lengths onto the masonry supporting the heavily loaded long span lintels over the large façade openings within the eastern facades are a safety concern.

Gable End Brickwork Cracking within Each Building: -

Previously, prior to Year 2 survey and repairs, the brickwork gable ends of the buildings were acting a set of dislocated masonry plates rather than a complete gable end wall, to resist overturning of the building. This dislocation of the gable end facades consequently significantly reduced the capacity of the gable end walls to resist lateral wind loading applied to the main western and eastern facades of the building, particularly near the ends of the building at the southern end, as there was no shelter from the wind at low level (the bottom three storeys) from for example the car park structure at the northern end of the buildings.

A set of cracked areas of brickwork or plates are also more likely to be sucked out into the public highway / street at the southern end.

Note:- On a positive note, the removal of the communications equipment occurring before the commencement of Year 2 works, which was standing significantly above the level of the roof on Hanover Court has slightly reduced the wind loading applied to this building at the highest level, slightly reducing the overturning forces acting on the eight storey building and thus on the gable ends and the piers on the eastern sides particularly during storm winds coming from the west.

Particular Observations Made During the Course of the Year 2 Works: -

- a) The buildings had cracked further due to the wind loading, over the first half of the Year 2 surveys during the winter storms.
- b) Comparison with the surveys in November 2018 confirmed this.

Consideration should be given in the future if the ongoing annual monitoring of the buildings demonstrates if the gable end cracking continues again i.e. during strong storms from the west, to considering banding the whole width of the gables at each floor level and returning around each corner of the building over to the balconies on the western side, the stairwell corners on the eastern side to strengthen the gables and provide some peripheral ties at each floor level to assist with resistance to disproportionate collapse, as well as future addressing wind loading damage to the facing brickwork.

Rebuilding the gable end walls could be considered as an alternative or prestressing them down from the top down to the foundations with internal stressing bars to improve overturning resistance, but this option may not be practical? This is matter for the Year 3 Engineers to consider and investigate in Year 3 works when further investigations can be arranged when a gable end flat becomes vacant to investigate the inner leaf cracking within the gable end and flank walls and the tying in of the facades to the internal walls and floor structures.

We have also previously recommended that the edges of the floors and the ceilings are investigated to determine the tying in of the masonry facades, the gable end walls and the floor plank bearings into the gables and the cross walls, by initially opening up and exposing the structure within a selected sample flat. This is now deferred to the Year 3 investigations for the year 3 Engineers to ascertain the robustness rating of the building.

Façade Brickwork Masonry Bearings:- supporting the walkway beams, the long lintels or beams over the wide openings in the eastern elevations and the internal beams over the internal communal walkways within the buildings have been noted as cracking and failing under the loading imposed upon them and all these bearings need to be repaired in order to maintain the safety of the building and its current robust rating and integrity when the building which was built in 1968 when standards were not so exacting for disproportionate collapse and robust details. Some of these masonry bearings have been repaired in Year 2 Works but others remain still to be repaired in the Year 3 Works.

See contractors lists, MLTS Ltd drawings, Contractors internal defects drawings in the communal areas and Fosters Spreadsheets and site survey records and photographs.

Balcony Panels – Tap Test Results: - See site records and photographs and MLTS Ltd Drawings

These are the decorative reinforced concrete panels on the western faces of both buildings.

It appears that in the past a previous contractors have just painted over mould lichen, cracks and loose material disguising the defects and deterioration of the reinforced concrete from view, allowing deterioration to continue until 2018, when with close examination with mobile access equipment the concrete panels exhibited large amounts of dangerous loose materials ready to fall off onto persons below and an emergency safety Tap Test of all the Balcony Panels was

commissioned by CCC. A sample Balcony panel was cleaned off during the Year 2 works to ascertain if mechanical means could indeed adequately clean off the poor quality loose and split paintwork off these panels enabling the application of Sika 903 and Sika 675 Anti-carbonation paint.

Bin Chute Towers at Hanover and Princess Courts

Various serious cracking patterns were discovered within the bin chute towers adversely affecting the integrity and stability of the towers which were repaired during Year 2 works

Lift Shaft Towers Particularly Hanover Lift Shaft – One particularly noteworthy initial report arose during the Year 2 survey of a vertical crack / split, was discovered by the rope access team, running down from the top of the Hanover lift Shaft Tower. (29 Courses) possibly due to lift cage crabbing towards the top of the tower aggravated by thermal and moisture movements of the tower and thermal movements of the lift cage etc, requiring further investigation of the lift shaft internal dimensions, lift cage shape, rail wear and gauging and overall settings and clearances at each floor level, thus has also been deferred to Year 3 after these cracks were repaired in Year 2 and left to be monitored.

Note: - The Year 2 Brief only relates to the Parapet (Apron) Concrete Panels and Previously Localised Overloading of the Façade Slender Piers and Entrance Stairwell Walls all below 2nd Floor Level in Year 1 Brief and did not include the staircases and landings.

Consideration of Year 3 Works by Others: - Summaries below based upon Year 2 Findings

Outline List of Considerations of the Future Brief for the Engineers going into Year 3 Works i.e. Messers Millards and MACE

- **Original Building Design** - shortcomings – slender pillars, wind loading, water ingress, heat / thermal effect lack of movement joints in the brickwork and the structure.
- **Local overloading** of the facades e.g. piers and stairwell walls.
- **WIND LOADING additional to Dead and Live Loading.** Brickwork cracking apparently suggesting over stressing beyond 25 % overstress DL+LL+WL allowance in the faced brickwork.
- **Poor Maintenance / Painting** over the years, leading to degradation of the concrete surfaces due to using non-breathable and non-compliant Anti-carbonation coatings. *See Trial panel on Hanover western elevation to mechanically remove the poor quality cracked and peeling paintwork*
- **Ongoing Dangerous Condition of the external and internal concrete façade surfaces** but reduced due to Year 2 works but still ongoing into Year 3 works, danger of falling masonry – see site photos & samples of the balcony panels lintels beams and stairwell stairs and landings.
- **Emergency Repairs / Remedial Works** - to date and future planned emergency and repair works to the facades, including brickwork repairs following on from Year 2 into Year 3.
- **Emergency Remedial and Repair works to the towers and the walkway bridges** mostly complete within Year 2 works
- **Internal cracking surveys within the communal areas** – significant amount complete in Year 2 works ongoing into Year 3 works
- **Internal tap test survey of all the reinforced concrete staircases and landings** – not included at all in Year 2.
- **Prioritised Urgent (Red rated urgent) of the Year 2 to Year 3 repair works** to the concrete elements, the brickwork, the tower structures and gable ends completing the stairwell and pier works already nearly completed, except for Princes Court eastern façade. See Year 1 Report. See Fosters Lists Yellow rated items deferred to Year 3
- **Further investigations** - drainage, foundations floor, walls structure internally.
- **Photographic Recording System of each defect and repair**- used by the contractors on site and drawing up records and Excel lists to be maintained in order to record who has made what repair and when on the facades of the buildings.

- **Calcium Chloride testing** See GBG Report and Year 3 Facade Beams, Lintels and Panels (Balcony Beams Parapet Aprons yet to Test)
- **High Alumina Cement Testing** See Separate GBG Report (Potentially Terminal - HAC Conversion)
- **Butterfly Cavity Wall Tie Locations, Patterns and Spacing** – Partial Sampling carried out in Year 2 Full Survey deferred to Year 3 Works
- **Wall Tie Surveys** - condition corrosion / life more sampling deferred to Year 3 Works
- Window and Openings Lintel and Beam passivation and anti-carbonation coloured, and clear coatings deferred to Year 3 with SIKA 903 and SIKA 680c
- **External Walls – Surveys for plumb / bowing / buckling** remainder deferred to Year 3 Works and to be included in ongoing Monitoring
- **Further Review of Building Life** versus maintenance costs per annum using costs to date and initial estimates CCC surveyors.
- **COSTS** – Balcony Beam / Panel Concrete and brickwork repairs and contractors' warranties
- **Desk study of contractor's surveys and photographs** - plus CCC and MLTS Ltd Photos to be extended into Year 3 Works to ensure full traceability of all repairs on the buildings and to enable which contractor carried out what work on the buildings
- **Further Reporting of findings** - using photographs of site white wipe boards noting each defect and repair location to be continued into Year 3 works.
- **Original Heating and Cooking Appliances Assumed in Original Design as Electric only.**
- **Gas Supply has apparently been retrofitted to the buildings** and consideration should be given to removing gas appliances in favour of electric appliances in accordance with Ronan Point report and other standards since to reduce the risk of disproportionate collapse even in masonry cross wall construction buildings particular Hanover Court, a Class 2b building.
- **GAS Safety** – Continue to Review Annually the stringent Gas Safe Checks and Certification for all flats to be strictly monitored by CCC so no unsafe appliances likely to explode can occur.
- **Preliminary Review / Assessment of Building Life** versus maintenance costs per annum using more accurate data and costs (5 Year, 10 year and beyond life) to be passed back to CCC and Millards and MACE to maintain and undertake.
- **Completed Year 1 and Year 2 Works to be periodically Monitored** – Including Hanover Piers and Stairwell Wall openings located at ground / first floor levels. The repairs are completed and are to be monitored particularly after strong winds - Princess Court only Partly completed in Year 1 and 2 and remainder of these works have been deferred to Year 3 works
- **Bin Chute Walkway** Brickwork pedestrian restraint panels new restraints in brown steel posts completed to stabilise these unsafe masonry panels.
- **Bin Chute Walkway Beams "TIE Back" -" Meccano plates"** majority installed, some still to do but subject to ongoing monitoring after strong winds to retsina the tower against wind sway and to prevent these beams pulling off the short masonry bearings and collapsing.
- **Roof Access Hatches** completed on Princess and Hanover Buildings but Sure Safe roof perimeter handrailing's to replace the old handrails to be installed on princess Court roof to match Hanover Court – Details are in the CDM file.
- **Permit to work system** to be implemented and maintained for all roof access.
- **Roof Perimeter Safety Handrailing - completed on Hanover deferred to Year 3 Princess Court**
- **Staircase Handrailing improvements** remedials and repairs to staircases / walkways and communal areas. To be completed as part of CCC handrailing upgrade schedules, but can be compromised by crumbling, splitting, spalling, stair and landing edge concrete i.e. near the handrail fixings and so mentioned here as part of CCC Year 3 Handrailing and Surveys Schedules.
- **(Monitoring / Visual Inspections of the Facades** - Annual Inspections and 3 yearly inspections and surveys e.g. 3 yearly using access equipment or rope access.
- **Repair and Planned Maintenance Schedules** – to be updated e.g. to exclude the use of masonry paint in favour of anti-carbonation paint SIKA 675 and Sika 680c Clear.
- **Tree Policy - No new planting without Structural Engineers prior approval.** No planting over DRAINS !!! or aside the Building - Removal of self-seeded and tenants / leaseholders' trees as Structural Engineer sees necessary, to be removed.

- **Drains Surveys and Maintenance Policy** - Gathering together and collection of Drains Surveys to date and implementing any and all repairs.
- **Painting Policy** E.g. Concrete elements - Anti-carbonation Paint e.g. SIKA 680c or 675 Only see above. No Masonry Paints to be used.
- **CDM Policy** for the buildings and CDM file continuing to updated.
- **Balcony – Pedestrian Part K of the Building Regulations** - Balcony mesh in fill panels (black) corroded and CCC have been exploring themselves various alternative replacements to these grills e.g. using solid or nominally perforated stainless steel platework.
- **Safety Mesh Grills** and means of escape CCC Exploring in filling openings in the facades and safety issues.
- **Continuation Maintenance of the fire brigade dry risers** and their valve gear for firefighting.
- **This list is not exhaustive and merely lists items which have come up during the course of the works and come to the clients renewed / current attention.**
- **CCC Clients own list** for example of their own scheduled repairs mentioned below for information purposes only as follows:
 - ***CCC Clients Own Summary dated 2018 of the - Remaining Work***
 - *Yellow work to Princess and Hanover, H West elevation, P West and East elevations*
 - *Repair to balcony beams, concrete spalling*
 - *Replacement of metal screens to balconies*
 - *Modification of roof drainage, to include re-routing downpipes, modification to underground drainage*
 - *Re-Setting handrails and adjustments to Hanover Court.*
 - *Adaption of roof cut-out guard rails*
 - *Upgrade handrails at Princess court*
 - *Additional protection around loft access points.*
 - *Glazed enclosure and small roofs to lift end bin chute area*
 - *Modification to bin chute roofs, lift end both blocks*
 - *Alteration of walkway drainage, adjacent Hanover lift, stopping damp problems in adjacent flats*
 - *HHSRS upgrades to all stairs*
 - *HHSRS modification to Coronation Street wall openings*
 - *Repairs/adjustments to Hanover Court lift*

These two buildings have facade structural problems and other problems yet to be investigated and beyond the mere brief of the facade issues: - The buildings built in 1968 are moving towards the end of their design life whatever that was originally. Arguably the buildings had design issues and construction issues compared to modern standards and will need a large financial investment to bring them up to standard or simply to slow the deterioration of the buildings by cycles of annual monitoring and maintenance.

The defects were categorised into yearly works schedule now embodied into the contractors site spreadsheets after the urgent items were completed. See contractors' defects lists and spreadsheets.

No doubt some of the outstanding defects recorded will continue to deteriorate, particularly if not addressed.

The task for Year 3 is to complete all the surveys and repairs and move onto a cyclic and normal annual visual maintenance, inspection management and repair system, supplemented by 3-year high level accessed "Periodic" inspections to examine the facade elevations at each and every level above ground up to the roof.

Therefore, Consider Managing the Buildings in Accordance with Civil Engineering Procedure: -

Example of Civil Engineering Procedure for Repairs Maintenance and Monitoring the Buildings in outline terms of: -

- 1) Visual Surveys, W.A.S. walk around surveys.
- 2) Identify the obvious visually observed issues and defects high definition zoom cameras should be used.
- 3) Initiate obvious simple remedial works e.g. clear blocked gullies drains, gutters and flashings etc. etc etc
- 4) Investigate further any issues by various means with various professional assistance
- 5) Review and re-investigate and or extend the investigations e.g. survey at height.....
- 6) Laboratory and other testing etc e.g. locating reinforcement in concrete and taking samples
- 7) Review, desk study and report.
- 8) Design remedial works
- 9) Schedule
- 10) Cost
- 11) Budget
- 12) Execute and that may involve another cycle of items 1 to 8 etc and so forth, annually, biannually or every 3 to 5 years and so one for the remaining life of the building.

Recommendations: -

These recommendations are here given in principal only and any further investigations and remedial works will be subject to further advice consultation and specification of such remedial works in detail before any works whatsoever are undertaken on site.

Part 1 - Basic General and Typical Relevant Recommendations for such the Buildings for example: -

- 1) *The trees located immediately around the property are managed to prevent tree root damage to the formation supporting the foundations by the City Council Tree Officers in order to monitor, minimise or abate any impact on the stability of the property.*
- 2) *We recommend the excavation of trial holes to ascertain the depth of foundation and any tree root activity in the clay and under the foundations.*
- 3) *Trial holes should be excavated carefully by hand after determining the exact routes of the electricity gas and water services in order to make an assessment of the state of the formation and foundation stability risk, in accordance with NHBC 4.2 guidelines, for example.*
- 4) *The drainage investigations and any repairs should be completed following CCTV camera surveys.*
- 5) *We recommend monitoring the properties every year to ascertain if the mature trees have an adverse effect upon foundation stability.*
- 6) *Maintenance of the rainwater gutters, gullies, drains, should be maintained to ensure that the rainwater does not overtop the gutters and escape down to the formation under the foundations causing foundation movement.*
- 7) *Keeping any trees self-seeded and or otherwise, away from the property as ascertained by the NHBC and BRE guidance regarding trees and buildings chapter 4.2 see <http://www.nhbc.co.uk/builders/productsandservices/techzone/nhbcstandards/technicalguidancedocuments/>*
- 8) *If tree roots from the trees in the public areas or the gardens are ever identified as pervading under or near the footings of the property in the future, then we recommend such the investigations of the foundations and use the LTA Joint Mitigation Protocol to have the tree managed or felled by the owners of the tree / trees.*

Part 2: - Main Recommendations: -

A cost benefit analysis should be undertaken for the buildings bearing in mind their age and year of construction 1968 along with their ability to resist disproportionate collapse, with consideration of the findings of various reports concerning disproportionate collapse of masonry cross wall buildings and latterly the Grenfell Tower Reports, particularly in the case of Hanover Court including the changes to standards, legislation and particularly the management and qualifications of those parties managing Class 2a and Class 2b buildings, now being currently being reviewed along with updates to multiple occupancy building management systems.

The Year 3 Works including the ongoing surveys and for example the concrete repairs to the balcony beams and the remaining brickwork repairs etc as previously discussed, should be undertaken without further delay to repair the integrity of the facades which in the case of the brickwork appear to contribute to the overall stability of the buildings. In particular, Hanover Court due to its eight storey height and being a class 2b building of simple cross wall construction built in the 1968 when building standards particular structure etc were not as exacting and given that gas apparently has been retrospectively installed in the building as maintaining the integrity of the building is paramount to maintain stability particularly during an accidental event.

Consideration should be given to diligently maintaining gas safety standards in both the leaseholder and tenanted flats and the buildings as a whole, as the buildings were built before 1972 /1976 and do not appear to have been strengthened as a result of the Ronan Point Report possibly as the buildings were seen as masonry cross wall construction buildings and so perhaps been overlooked by the industry and government. Eight storey cross wall construction buildings are not particularly common as steel and reinforced concrete framed buildings which were more economic and quicker to build at the time.

Main Buildings Facades: -

Periodic Surveys of the Facades: - The buildings should be monitored every third year (and no later than 4 years) preferably in good sunny spring weather to enable close access with a high level using mobile access platforms. Concrete repairs to be carried out in dry warm not hot conditions in a timely manner. Certainly, above 5 degrees centigrade air and surface temperature and preferably 10 to 15 degrees, but no more as the summer heat can adversely affect the repair materials subject to SIKA recommendations for optimum repair material performance.

Inspections: - In particular the gable end walls and towers should be inspected with care and initial and interim investigations can to a limited degree be conducted with telephoto lens from the ground but this has proved not to be reliable as its only identifies areas where material has already dangerously already fallen off the building.

As drone technology and software stitching 50-megapixel views together forming a seamless detailed view of each face of the building and this software and techniques progresses, then this method becomes a far more economic interim survey method. If more information is sort in this respect, then may we refer the new engineers to GBG Downing Park, Swaffham Bulbeck, Cambridge, CB25 0NW who we understand can undertake such specialist drone façade surveys of the brickwork and concrete items in the facades. See <http://www.gbg.co.uk/>

Consideration ought to be given, as discussed, during year one and two works, to taking the opportunity to study the internal structure of the building for example by entering an empty flat or flats located aside a gable end wall at each end of the each building to examine any dry lining, which may not be in asbestos boarding and to enable test drillings and opening up of the masonry forming the internal leaf of the cavity wall and the party wall. To, determine if the bearings of the internal precast concrete flooring units forming the concrete floors, comply with robust details both into the gable end wall and the

internal party walls. Also, to ascertain if the external gable brickwork cracking is occurring in the masonry inner leaf of the cavity walls.

Masonry Bearings Under Beams and Lintels – Cracking and Failures: - Serious issues remain at the bearings of the facade support beams and internal load bearing beams to be repaired in Year 3 – see previous notes in findings and conclusions and record drawings and lists.

The nature and extent of the bearings of the main façade supporting long span, concrete lintels ought to be verified as they appear to be only 112mm or less certainly it would seem not more. To ascertain if the nature of these bearings are sufficient to form robust details and resist disproportionate collapse, in both buildings due to accidental damage, particularly in Hanover Court.

Lifts and Lift Towers:- A survey of the gauge of the lift shaft rails and running clearances with the lift towers should be undertaken to ensure that the lists do not bind between the rails particularly in hot weather including at the top three floors making a binding noise, as this will impart bursting forces within the lift towers which they are clearly from the cracking are damage not able to sustain. Indeed, this issue is particularly as structural concern as the lift towers are built external to the building in a form which would normally be constrained by being within the building and retained all around the masonry lift shaft at every floor level. If this issue is not addressed, resolved and maintained so it does not occur again then a serious structural failure of the lift and or the lift towers could occur. Given the design, nature and construction of the lift towers then serious consideration ought to be given to banding the towers with Helifix every fourth course proceeding vertically above the car park structure level 3 to render an adequate factor of safety for the lift towers where they are not confined within the floor slabs of the garage building.

Bin Chute Tower Walkways: - On no account should the bin chute tower walkways be enclosed with fitting windows as this will increase the windage on the towers causing them to sway along the building causing further damage of the bearings of the walkways into the building brickwork and the brickwork forming the towers.

Drainage: - The drainage and water systems should be investigated and maintained so as not to cause damage to the foundations and the stability of the buildings.

Overall Stability:- Given that the external facades apparently, assist and contribute to the lateral support of the buildings against wind loading, a major stability requirement, the attachment of the facades to the structure buildings and cavity wall ties and spacings should be additionally surveyed in detail and recorded to ensure that the facades can continue resist wind suction and any accidental loadings for example due to the use of gas within the building. See MLTS Ltd Crack pattern Drawings 600 series.

Maintenance: - The brickwork facades, the lintels and the concrete elements should be maintained.

Durability of Concrete Elements: - Consideration given to improving their durability from for example, coating with SIKA 902 and SIKA 680c clear anti-carbonation paint.

Painting: - ON NO ACCOUNT should any concrete lintel or element be painted with any other paint unless it is a certified tested anti-carbonation paint. Masonry paints should not be used on concrete elements. From experience on Kingsway Flats, masonry paints or poor-quality paints cause condensation behind the impermeable paint membrane. Due to the internal inhabited environment, condensation behind the paint causes reinforcement corrosion and frost damage of the concrete located any poor-quality paint. BEWARE PAINT PRODUCTS claiming to have anti-carbonation and vapour breathable quality! Careful control of the paints used on these buildings is critical to durability.

Brickwork Helical Bar Remedial Repairs should be carried out using a grout primer e.g. Helifix Primer and Helibond grout for example to maximise and improve the bond considering the tendency for the existing mortar to separate along the bed joints.

The Concrete Repairs have been commenced using SIKA products it makes logical sense and for continuity to continue to use the SIKA products and their warranty.

Gables and Towers Banding with Helical Repairs: - **Particularly** the Lift Shaft Towers – serious consideration should be given to “banding” the gable end walls and the towers every fourth course if cracking continues as per two of the Bin Chute Towers as continued monitoring for the life of the buildings determines. See previous comments and discussions.

Lift Shaft Towers Banding: - however without determining the cause of the cracking from the lift equipment for example, banding may not rectify the problems and a new lift shaft tower may have to be considered.

Consideration of Helically Reinforced Beams: - Located under windows e.g. at the northern end of the western facades forming the gable end reruns stabilising the gable end walls.

Previous Notes from Findings: - *the bricks are almost clean of mortar by the time they are placed in the skip without any intended cleaning up of the mortar off the bricks.*

The clean perpends and beds and the partially filled brick voids, perhaps the only lateral bed joint shear available at any bed due to the increased deadload or weight of the brickwork above.

The bricks appear to be medium strength facing bricks set in type 3 mortar.

The incomplete filling of the perpends at the end of each pair of bricks potentially seriously compromises any Helical Beam strengthening design e.g. under windows, as the perpends can close due to the incomplete filling with mortar there for any Helibeam details should be designed with not only tension reinforcement located at the bottom below the neutral axis, but also installed above the neutral axis as compression reinforcement, if deflection of the brickwork and lintel is to be properly controlled and the intended strength in the Helibeam is to be achieved at all.

Consideration of the Removal of the Car Park Structure: - which is restraining the first three floors of the lift shafts particularly Hanover Court lift tower at the northern end. See previous comments but the lift towers appear to be of a construction suitable for location inside a building laterally restrained at every floor level by the internal floors. Removal of the car park structure could cause failure of the external lift shaft towers as they try to stand on their own.

All Year 3 Investigations and Remedial works to be quantified from Fosters and SJW lists and record photographs and specified by Millwards and MACE.

This summary report is intended as an introductory summary and not as any instruction to carry out any work which is a matter for our clients and their contractors under the terms of the 2015 CDM Regulations and thus further design work and details will be required, as separate and additional brief, accordingly to advance to clarify and determine the pre-construction stage under CDM 2015.

Signed

For and on behalf of MLTS Limited,

Martyn Lord, B.Eng. (Hons), C.Eng., M.I.Struct.E.

MLTS Limited,

Chartered Structural Engineers,
55 Mill Road,
Lode,
Cambridge,
CB25 9EN

References – Bibliography: -

The Design of Plain Masonry Building Structures - Institution of Structural Engineers

Appraisal of Existing Structures Institution of Structural Engineers (Third Edition) October 2010

Practical Guide to Structural Robustness and Disproportionate Collapse of Buildings October 2010 -
Institution of Structural Engineers (In Particular Section 4.3 Box 4.1)

Manual for the Systematic risk assessment of high-rise structures against disproportionate collapse-
Institution of Structural Engineers

Safety in Tall Buildings and other buildings of large occupancy - Institution of Structural Engineers

Accidental Damage Robustness and Stability J. Morton BSc PhD CEng MICE MInstM

Brick Development Association.

Masonry Design for Disproportionate Collapse Requirements under Requirement A3 of the Building
Regulations 2005 to 2013 - Brick Development Association.

Hanover and Princess Court GBG Report 4534 Report of the Sampling and Testing Pre-cast Concrete
Floor Planks.

Building Research Establishment - Special Digest SD3 - HAC Concrete in the UK

Designing in Reinforced Brickwork - Brick Development Association

Design of Brick Fin Walls - Brick Development Association

The Design of laterally loaded walls - Brick Development Association

Building Research Establishment – Digest 346 The Assessment of Wind Loads

Building Research Establishment – Digest 390 Wind Around Tall Buildings

Ronan Point Report - Ministry of Housing and Local Government Her Majesty's Stationery Office 1968

Notes for guidance on the interpretation of Appendix I to Ministry of Housing & Local Government
Circular 62/68. Institution of Structural Engineers *RP/68/02.1968*.

Guidance on the design of domestic accommodation in load bearing brickwork and blockwork to avoid
collapse following an internal explosion. Institution of Structural Engineers *RP/68/03.1968*.

J. Morton, S. R. Davies & A. W. Hendry. The stability of loadbearing brickwork structures following
accidental damage to a major bearing wall or pier. Proceedings of 2nd International Brick Masonry
Conference, edited West &
Speed. 1970.

J. O. A. Korff. Accidental loading - Part II, Application. Proceedings of symposium on the structural use of
masonry. The Institution of Structural Engineers. 1974.

Design Guide for strapping and tying of load bearing brickwork in low rise construction. British Ceramic
Research Association SP93: 1 977.

R. J. M. Sutherland. Principles for ensuring stability. Proceedings of symposium on stability of low-rise buildings of hybrid construction. Institution of Structural Engineers. 1978.

W. G. Curtin, G. Shaw, J. K. Beck & W. A. Bray. Design of brick fin walls. Brick Development Association. 1980.