



Defoe House

The City of London Corporation

External Fire Risk Assessment

Prepared by:

Turner & Townsend

One New Change, London EC4M 9AF

Site information

Building Name Defoe House
Building Ref
Division Department of Community & Children's Services.
Estate Barbican Estate
Property Name Defoe House
Property Ref

Name of the person responsible for fire safety (Premises Controller) on site: -

Name of the person: Estates Supervisor Department name: DCCS

Telephone Number: Mobile:

Email address: estateservices@cityoflondon.gov.uk

Name of the person responsible for liaisons on fire safety matter with third party:

Name of the person: - Estates Supervisor Department name DCCS

Telephone Mobile:

Email address: estateservices@cityoflondon.gov.uk

Person responsible for arranging corrective actions (Competent art 13 RRO):-

**Name of person- Assistant Director, Housing and Barbican Department
name DCCS**

Telephone Mobile:

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Event planner for the site when applicable:-

Direct contact details: - Department name

Office Mobile:

Email address:

Assessor details

**Name of the person: - Russell Peacey
Townsend**

Department name: Turner &

Telephone:

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Date of the assessment : 31.06.2022

Date of first draft reviewed : 08/08/2022

Date when finalised : 19/08/2022

Date sent to premises controller: : 19/08/2022

Date of next assessment : 31/06/2023

Report Signed by Assessor

Signature: *Russell Peacey*

Print Name: Russell Peacey

Date: 19/08/2022

Name of Assessors reviewer:

Printed Name: Paul Boughton

Signature of Assessor reviewer

Signature: *Paul Boughton*

Date of Review

Date: 19/08/2022

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Minor amendment history

Details of minor amendment history between detailed full assessment intervals, carried out.
(Attached to rear of the main assessment)

| Date of assessment | Department Assessor name | Brief details | Department Manager responsible for actioning |
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Preamble

This Fire Risk Assessment has been prepared to comply with the requirements of the Articles of the Regulatory Reform (Fire Safety) Order 2005.

The assessment process has been developed to meet the requirements of the City of London (CoL).

This Fire Risk Assessment document reflects the significant hazards associated with the operation of this site and identifies suitable controls to minimise risks to health and safety which need to be actioned by the CoL person responsible for undertaking corrective actions.

Executive Summary

The building has been rated as a moderate risk. This is because the flat entrance doors and side cupboards which form part of the door set to the flats, open directly into the common stairway do not meet current fire safety guidance. Also, the existing flat entrance doors which are considered to be a notional/historic fire doors are not fitted with effective self-closing devices.

Overall risk assessment

The overall risk assessment of the building is a **Moderate Risk**.

Overall comment on the Risk Assessment of health and safety. The health and safety arrangements of site were considered appropriate. The site appears to be well managed.

Significant General Safety Issues – None noted.

Survey Methodology

Site information, Specific Site Survey Information and the responses to the Pre-Survey Questionnaire were obtained by email. The response was obtained from David Blane.

A site visit was carried out by Russell Peacey on the 31.06.2022 to undertake a physical survey of the building.

All means of escape were walked to check their availability.

During the initial visit, flat entrance doors were inspected externally to assess their performance, although this did not amount to a full and detailed inspection of the doors and no performance guarantee can be given.

Further checks of a sample of at least 10% of the flat entrance doors will be conducted as part the Type 3 assessment that will be undertaken of the building.

Compartmentation was assessed as far as it was reasonably practicable without carrying out an intrusive survey.

Note – there was no access to the level 02 substation, level 03 service tunnel or any individual resident store sheds. The service tunnel will be assessed in a separate FRA.

Relevant documentation was inspected to check compliance with recommended testing

Further information was obtained by informal questioning of staff where necessary. This included a Retrospective Fire Strategy for Andrews House (a neighboring block with a very similar design) completed by Arup dated 15th November 2021.

The Regulatory Reform (Fire Safety) Order 2005 does not require the detailed fire safety provisions of an existing building to comply with any particular standard in order to achieve a satisfactory fire risk assessment outcome. Rather, the Order places a duty on the responsible person to take such general fire precautions as will ensure, so far as reasonably practicable, the safety of his employees and relevant persons who are not his employees.

However, it is good practice to adopt a recognized standard or code of practice to act as a benchmark against which fire precautions should be assessed*.

This particular fire risk assessment made use of the following publications when assessing the suitability of general fire precautions:

- Local Government Association, Fire Safety in Purpose Built Blocks of Flats guidance.
- Approved Document B Volume 1 Dwellings 2019 ed. Incorporating 2020 amendments.

- BS 9991:2015, Fire safety in the design, management and use of residential buildings. Code of practice.
- CP3 Chapter IV Part 1 1971

BS 5839 Part 6:2019, Code of Practice for the Design, Installation, Commissioning and Maintenance of Fire Detection and Fire Alarm Systems in Domestic Premises

City of London Housing residential building fire safety policy.

*Particular care should be exercised when using a design guide for new buildings (such as British Standard 9991 or 9999) as a benchmark for the fire safety of an existing building.

Specific Site Survey Information

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| Is there evidence on site that fire deficiencies/ faults are addressed in a timely manner? | Yes – no significant faults identified. |
| Emergency lighting units are charging (diodes normally green or red are illuminated). | <p>No</p> <p>Much of the emergency lighting in the building is provided by “Standby Lighting” (as defined by BS5266 Part 1). e.g. within the stairways. with an alternative power supply provide by a generator. It was not possible to confirm the full locations and adequacy of these installations as part of the fire risk assessment survey.</p> <p>It is understood that CoL are commissioning an emergency lighting survey.</p> <p>See action 1</p> |
| Escape routes not blocked & clearly marked. | Resident storage shed areas |

Some of the storage areas have potentially confusing exit routes, and or an excessive travel distance, of up to 25m in a single direction (under block 29-42).

The way finding / fire exit signage in the tenant storage areas is considered inadequate.

It could not be conformed if the emergency lighting in these areas is adequate.

It is understood that emergency

lighting and exit signage will be improved by CoL to meet the current relevant standards.

See action 2

Wayfinding signage in and emergency lighting in and from the switch gear room appears to be inadequate.

See Action 3

CoL has confirmed that the management strategy for the secondary means of escape is as follows - *All 9 miles of balcony are formally inspected once per year by the House Officer team.*

Obstructions are labelled with an orange sticker and residents are given a week to remedy. Items if

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| | <p><i>still present, are then removed. This inspection also reports any faults found.</i></p> <p><i>Additionally, the window cleaning contractors clean all windows every 6 weeks. They are tasked with fault and obstruction reporting as well.</i></p> <p><i>In the resident bulletin CoL regularly run fire safety messages, these include fault reporting and the importance of obstruction free balconies.</i></p> |
| Fire doors with electrical hold open devices are closed by manual operation at 2200hrs (on final walk round in sleeping accommodation or earlier depending on site specifications). | N/A |
| Are there any restrictions from Building Control, Planning & Heritage that could have an impact of the premises? | <p>Yes - The building is Grade II* listed.</p> <p>It is understood that CoL has commissioned architectural firm to complete a listed building application in relation to planned fire safety works.</p> |
| Are Salvage & Business continuity plans up to date and suitable and sufficient. | Yes |
| Is there any neighboring fire risk that could significantly impact on the future fire safety of the building? | None known. |
| During the inspection did you identified any cladding which was not already provided to you from the client documentation? | <p>No. The building has a concrete façade.</p> <p>Therefore, a PAS9980 Fire Risk Assessment External Wall (FRAEW) is not considered to be required.</p> |
| Are the onsite PEEPs and GEEPs templates adequate? | Under current guidance relating to Purpose Built |

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| | <p>Blocks of Flats with a Stay Put strategy there has been no requirement to complete PEEPs in this type of premises. A recent government consultation published in May 2022 supports this.</p> <p>It is CoL policy that they write to all residents, and where residents identify themselves as persons who may require assistance in an evacuation, they are generally recorded on a Vulnerability List (see below).</p> |
| <p>Where there any occupant/visitors identified who could be incapacitated and unable to evacuate safely and were not covered under by a PEEPs and GEEPs?</p> | <p>There were no vulnerability lists found in the Premises Information Boxes (PIBs). It is understood that CoL policy regarding PIBs, and their contents including Vulnerability Lists is currently under review and CoL are monitoring the ongoing consultations / guidance regarding PEEPs and “Emergency Evacuation Information Sharing”.</p> |
| <p>Are there inductions for staff and contractors?</p> | <p>It is understood that CoL complete inductions for staff and contractors.</p> |
| <p>Is there arrangement in place for the safe evacuations of visitors?</p> | <p>N/A for a purpose-built residential block of flats.</p> |
| <p>Is there a Building Fire Strategy and a Fire Management Plan of the building?</p> | <p>A retrospective Fire Strategy has been completed by Arup for Andrews House, a neighbouring block with a</p> |

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| | <p>very similar design – see Andrews House - Fire Strategy Report dated 15th November 2021 and available from Col.</p> <p>It is understood that the recommendations of the Arup Fire Strategy report (as applicable to Defoe House) are currently under consideration by CoL.</p> |
| <p>During the inspection did you identified any current working practices that could be improved to reduce the fire risk to the property, e.g., removing sources of ignition or reduce the amount of fuel stored?</p> | <p>Housekeeping and storage was considered satisfactory. No unsafe practices noted.</p> |
| <p>Is there evidence of up-to-date electrical PAT testing in place?</p> | <p>No</p> <p>Caretakers Room</p> <p>There was an unsafe extension cable in the Caretakers Room. It appears that two cables have been joined together. This was reported to CoL during the assessment visit.</p> <p>Portable appliances in this room did not appear to have up to date PAT labels.</p> <p>See Action 4</p> |
| <p>Is the fire detection & warning system type adequate for the building use?</p> | <p>The building is a purpose-built block of flats with a stay put strategy so is not required to have a communal fire alarm</p> |

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| | <p>system in the residential areas.</p> <p>Fire alarm systems in the flats are covered by the Type 3 fire risk assessment.</p> |
| <p>Are the fire action notices compliant provide the reader with relevant instruction and position correctly positioned?</p> | <p>The Fire Action Notices do not describe the Stay Put strategy.</p> <p>See action 5</p> |
| <p>Are there adequate sign to maintain the exit routes e.g. keep clear, floor marking etc.?</p> | <p>Some fire doors are not signed e.g. Fire Door Keep Closed, or Fire Door Keep Locked, as applicable. It is understood that this is being address by the estate signage project.</p> <p>Floor level and flat number signs are not displayed in the stairways, as will be required by current legislation – the Fire Safety (England) Regulations 2022.</p> <p>See action 6</p> |
| <p>Are the existing active Fire Protection Measures sufficient for the buildings use</p> | <p>No</p> <p>Current systems include the Emergency Lighting (covered above), the fusible link fire shutters, and AOVs at the heads of the fire-fighting stairs.</p> <p>There is no smoke ventilation at the head of the non-firefighting stairways (other than</p> |

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| | <p>some windows that can be opened from the outside only). It appears that there could originally have been open vents at the heads of the stairways but if so that they have been removed by new window installations at the head of the stairs.</p> <p>It's noted that the Arup fire strategy for Andrews House recommends that Automatic Opening Vents (AOVs) are installed in these stairways, for escape purposes.</p> <p>Based on both historic and current fire safety guidance there is not considered any compensatory feature which would justify the removal of smoke ventilation to the common stair which the primary evacuation route for the flats.</p> <p>See Action 7</p> |
| <p>Is there evidence on site of regularly fire door inspections?</p> | <p>It is understood that periodic checks are made of the escape doors from the balconies.</p> <p>Its also understood that the stairway and stairway lobby doors are periodically inspected and where necessary repairs undertaken.</p> <p>It is understood that there is no specific planned preventative maintenance regime for</p> |

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| | <p>the glazed privacy doors along the linking balconies.</p> <p>See Action 8</p> <p>Flat Entrance Door Inspections</p> <p>It was not confirmed how flat entrance doors are inspected. No records were provided.</p> <p>See Action 9</p> |
| <p>Having checked 10% of fire Door shutters and curtain were any trends identified that could impact the safety of the building (Please list doors and curtain checked)</p> | <p>The flat entrance doors appear to be of the same type. Based on information provided they are considered to be notional fire doors, with no effective self-closing device fitted. Therefore, the flat entrance doors do not comply with either historic or current fire safety standards and guidance.</p> <p>The side cupboards which form part of the door set and contain storage and electrical meters may also not provide adequate fire resistance as the cupboard doors between the flat and the common stairway can potentially be left open.</p> <p>It is understood that a programme is in place to replace all the flat entrance doors including</p> |

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| | <p>the side cupboard doors with certified FD60S door sets fitted with external overhead self-closing devices.</p> <p>See Action 10</p> <p>Fire-fighting stairs –</p> <p>The fire doors / partitions protecting the firefighting stairs do not comply with current standards (which require 120 minute partitions with FD60S doors). The existing doors are considered to be at best notional (30 minute) fire doors only and are fitted with Georgian wired glass side panels. Several of these door sets have excessive gaps between the meeting edges.</p> <p>It is understood these doors will be replaced as part of the fire door replacement project.</p> <p>See Action 11</p> |
| <p>Is there evidence of regularly local checks and annual testing by competent?</p> | <p>A PPM schedule was provided, to demonstrate that fire safety systems are subject to a suitable maintenance regime</p> |
| <p>Has the site identified emergency responders' routes and fire hydrants and documented these?</p> | <p>Hydrants and Rising Mains are identified on site plans located in the PIB.</p> |

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| Are there any known neighbouring activities that could jeopardy a prompt arrival of the emergency responders? | None. |
| Is there evidence of anti-social behaviour at the site? | None. |
| Are there any seasonal activities undertaken by the site or naturally occurring events which could affect the fire risk profile of the site e.g., bush fires etc? | None. |
| Are there any renewable energy source at the site that cannot be readily isolated at source in the event of a fire? | None. |
| Are back up generation tested to ensure they provided adequate supplies to fire safety devices? | Information provided indicates that the backup generator is under an appropriate maintenance regime. |
| Is the premises controller aware of the Col guidance on Hot Works? | Understood that contractors are responsible for completing a hot works permit. |
| Are they evacuation procedures for all time the building is in used e.g., out of hours procedures for weekend? | N/A – as a Stay Put strategy. |
| Upon review of on-site documentations, how long did it take the building to evacuate? | N/A – Stay Put strategy. |
| Are security and arrangements adequate to deter deliberate fire attempt (e.g. terrorist and arson) in an event? | Yes – the building has secure entrances. External areas are kept free of storage. |
| Is large lithium-ion battery charged on site? | The car park has electric vehicle charging points. These are outside the scope of this FRA. |
| When was thermographic inspection last undertaken at site? | None completed. |
| Has the property had any unintentional fires over the last two years if so, please provide details? | None known. |
| Were they any significant gaps identified in the compartments (please list details)? | Yes |

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| | <p>Lift Landing lights</p> <p>There are light fittings above the lifts. These lights are fitted with metal hoods that separate them from the risers.</p> <p>It was noted that several of these hoods had been displaced, effectively leaving an open hole between the risers and stairwell.</p> <p>See Action 13</p> |
| <p>How are contractors fire risk controlled locally?</p> | <p>Understood that contractors are responsible for completing a hot works permit.</p> |
| <p>Is there up to date maintenance records for all fire systems on site?</p> | <p>To review the planned preventative maintenance (PPM) records, a desktop audit was completed with help from the Barbican Estates Property Services Team Manager.</p> <p>This involved checking the full records for a sample of buildings, and also random checks of several individual record types.</p> <p>The PPM audit maintenance checked records for the following fire safety systems (as relevant to this building): Fire Alarm, Dry Rising Mains, Fire Extinguishers, Back-up Generators, Lightning Protection, Sprinklers,</p> |

Wet Risers, Wet Riser Pumps, Emergency Lighting, Fixed Electrical System, Portable Appliances, Smoke Ventilation, Gas, Firefighting Lifts, Fusible Link Fire Shutters, electric vehicle charging.

The PPM audit found Barbican Estates were able to demonstrate suitable maintenance regimes for the majority of systems, but also identified the following concerns:

- Fire alarm function tests are currently planned at 2-week intervals but sometimes the tests are not being completed due to resourcing issues. It is understood that this is under review and that COL will require a weekly testing regime.
- No 6-month Visual Inspection regime for Rising Mains
- Several months delay in obtaining certificates for Annual Dry Riser Test, Lightning Protection, and sprinkler systems.
- It is understood that approximately 50% of the Barbicans fixed

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| | <p>electrical systems (Distribution Boards etc) are considered “unsatisfactory”, and / or have not been electrically inspected for at least 5 years. It is understood that non-compliant systems are being rectified on an ongoing basis but that no formal remedial works programme is in place.</p> <p>No PPM regime for most smoke control systems, i.e. Openable Vents (OVs) and Permanently Open Vents (POV) / smoke shafts. This is also covered by a separate action.</p> <p>See Action 12.</p> |
| <p>Is the fire logbook in accordance with col guidance policy</p> | <p>No logbook seen.</p> |
| <p>Additional question for Housing</p> <p>Is there evidence that when a new tenancy is commenced the operation of the smoke alarm is tested?</p> <p>The evidence should show:</p> <ul style="list-style-type: none"> • Date and time of test • Location of detector/s • Outcome of test <p>Name of person undertaking the test</p> | <p>Not at present but should be included in the void checks.</p> <p>Will be completed as part of a Type 3 assessment.</p> |

Description of site

Defoe House was completed in 1973. It is a terrace block running east to west within the Barbican Estate. The building is of "Brutalist" architecture and is Grade II* listed. The building has concrete construction (floors, stairways and walls), and an arched roof.

Defoe house is one building comprising of twelve independently accessed cores each with its own entrance at the podium level. Each core contains a single common stairway and lift with flats opening directly into the stair. On upper levels, flats have linking balconies which run the whole length of the building and open via doors into the firefighting cores/stairs.

The building contains a total of 178 flats with 2 flats per floor. The residential accommodation sits above commercial units and a car park.

Several cores have garden flats (below podium level) which can be reached by the lifts, or by external stairs descending from the podium.

The roof tops provide access to the lift motor rooms, and ventilation plant rooms.

Below podium level, the three firefighting stairways descend to the carpark level (01), which is the level which firefighters would access the building.

In cores 1-12 there are also resident storage areas at level 01 (within which there is a pump room), a substation at level 02 (no access), and finally access to the service tunnel at level 03. There is a Switch Gear room at level 03.

Core 29-42 also provides access to resident storage areas at level 01.

At core 163-178, the external stairs at podium level lead down to a Caretakers rest room / store.

Means of Escape:

The principal means of escape from the flats is via the single internal stairway that descend to the podium or level 02.

Flats on the upper floors also have secondary means of escape via linking balconies that provide access back into the firefighting stairways.

Use of Site

The building is a purpose-built general needs residential block of flats

Passive Fire Precautions

Flats entrance doors

Note - Flat entrance doors were not checked in the open position as part of the type 1 FRA..

The flat entrance doors appear to be of a consistent type. They do not comply with current standards. They are considered to be “Notional” fire doors (as defined by Fire Safety in Purpose Built Blocks of Flats). It is understood that the flat entrance doors are fitted with spring-loaded centre hinges but that these are no longer effective self-closing devices.

Flat entrance doors have Georgian wired glass side panels.

It is understood that City Of London will be replacing all the flat entrance doors, including side panels and side cupboard doors with certified FD60S door sets.

Construction of flats

The walls between the internally accessed flats and protected means of escape are a concrete/masonry wall with fixed Georgian wired glass windows which can only be expected to provide 30 minutes fire resistance. This is below the normal 60 minutes required between flats and an internal stairway. It is believed that at the time of construction this would have been justified under CP3 Chapter IV as the flats have secondary means of escape via the external linking balconies.

Protection of stairways.

With the exception of the firefighting stairs, the flats exit directly into the common escape stairway. This does not meet current fire safety guidance as the building is more than 3 storeys above ground level. To reduce the risk of fire affecting the common stairway CoL are proposing to replace the existing notional fire doors with FD60S self-closing fire door sets.

The fire doors / partitions protecting the firefighting stairs do not comply with current standards (which require 120 minute partitions with FD60S doors). These doors are at best notional fire doors and are only and are fitted with Georgian wired glass side panels. Several of these door sets have excessive gaps between the meeting edges.

In the accommodation stairs checks identified that the riser cupboard doors are notional asbestos backed doors that often do not adequately close. In addition, there are gaps between the risers and light fittings above the lifts that could allow smoke into the stairways.

It is understood that City Of London will be replacing all the communal fire doors, including riser doors, with certified fire door sets.

Communal Ventilation/Shunt Ducts

It is understood from information on other Barbican estate blocks that the communal ventilation ductwork connecting the bathrooms and kitchen of the flats is a shunt duct system. However, this could not be confirmed as part of this Type 1 assessment.

Smoke Ventilation:

The firefighting stairs have Automatic Opening Vents (AOVs) at the head of the stairs. Manual override controls are provided at the fire fighters entrances in the Defoe/Shakespeare Tower car park.

The other stairways are not ventilated other than by openable windows, however these windows cannot be opened internally so would provide little benefit in firefighting conditions. It appears there may have originally been Permanently Open Vents at the head of the stair but if so, they have been removed when windows at the head of the stairs were replaced.

There are ventilated lobbies between the car park and stairwells. The ventilation is a mixture of smoke shafts or being open to air.

In some areas the smoke shafts appear to be provide less the expected levels, of ventilation and it could also not be confirmed if the system(s) have been periodically cleaned / maintained.

Sprinklers

The resident store areas are protected by a sprinkler system (linked to the car park system).

Facilities for fire fighters

Firefighting Access

Firefighting access is at street level via the Barbican road tunnel (Beech Street), and the Defoe/Shakespeare Tower car park.

The building has one fireman's lift which appears to be installed in accordance with the original fire design standards at the time of construction (CP3).

Site Information / Premises Information Box (PIB)

There is a PIB containing emergency contact numbers, site and building layout plans, outside the fire fighters entrance.

Dry Rising Mains

Each firefighting stair is fitted with a Dry Rising Main with outlets on the stairway landings and on the roof. The inlets are accessed at street level within the car park.

Manually Openable Vents (OVs).

The firefighting stairs have Manually Opening Vents (OVs) at the head of the stairs. Manual firefighter controls are provided at the fire service entrance levels in the Defoe/Shakespeare Tower car park.

Fire Brigade Liaison

It is understood that LFB regularly undertake familiarization visits of the Barbican Estate.

Fire safety signage

In some areas, particularly below podium level in the stairways, fire safety escape signage is considered to be inadequate.

This had previously been identified and a “Barbican Fire Sign Strategy” was completed by BB7 in October 2021. This detailed strategy highlights the deficiencies and provides recommendations for new signage.

Active Fire System

Fire Alarms

In accordance with fire safety guidance, as the building is a purpose-built block of flats designed to support a stay put evacuation strategy, a communal fire alarm system is not provided in the residential areas.

Note - Manual call points at level 02 are part of the Bunyan Court car park system.

Fire Shutters

There are automatic fire shutters activated by fusible links protecting the stairwell from the carpark.

Sprinkler System

A sprinkler system is fitted in the resident storage areas, and appears to be linked to the Defoe/Shakespeare car park system.

Emergency Lighting (EML)

Emergency lighting is provided in most areas via “standby lighting” with a backup supply powered by a generator. Self-contained emergency lighting is also provided in some areas.

The adequacy of the emergency lighting could not be confirmed.

Fire Ignition Sources

Within the common parts the most significant ignition sources are the electrics/cabling located within the service risers. Providing the fixed wiring in the risers is appropriately maintained and the risers are kept sterile this is considered a tolerable risk.

Fire Training

It is understood that the Estates Manager and staff in the estates team are required to complete CoL’s mandatory fire safety training which includes the use of fire extinguishers.

Make an assessment of the fire risk

Likelihood of fire occurring at the property

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| | Medium | |
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Likelihood of fire spreading through the building

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| | Medium | |
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Likelihood of loss of life due to fire

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| | Medium | |
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Formulate and document an action plan

If it is considered that the fire risk and existing fire precautions are such that no improvements are necessary, this should be recorded within the fire risk assessment. The action plan should address both physical fire precautions, managerial issues and should normally prioritise measures so that the appropriate effort and urgency is clear. The measures within the action plan should both practically implement and maintain, taking into account the nature of the building and its occupants. With the best solution to bring about improvement with a possible pragmatic solution.

CoL Specific Hazard identification and Action plan template

| Ref No. Location: | Observations | Recommended further action | Risk Rating Low Medium High | Priority Level (please refer to table 1) | Action by Whom & When (Person task with action by premise controller) | Date Completed |
|------------------------------|---|---|--|--|---|-----------------------|
| 1. | <p>Much of the emergency lighting in the building is provided by “Standby Lighting” (as defined by BS5266 Part 1). e.g. within the stairways, with an alternative power supply provide by a generator. It was not possible to confirm the full locations and adequacy of these installations as part of the fire risk assessment survey.</p> <p>It is understood that CoL are commissioning an emergency lighting survey.</p> | <p>It is advised that a site wide survey should be undertaken of the emergency lighting systems in the building (and along external means of escape) by a competent person, to assess their adequacy with a “gap analysis” between the as installed standards and those required by BS5266 Part 1 2016.</p> <p>Any installations or enhancements or replacements required should be in accordance with BS5266 Part 1.</p> | Medium | D | | |
| 2. | <p>Resident Store Areas.</p> <p>Some of the storage areas have potentially confusing exit routes, and or an excessive travel distance, up to 25m in a single direction (under block 29-42).</p> | <p>The issues in the resident storage area can be mitigated by:</p> <p>1 - CoL signage project. Ensure wayfinding signage clearly and unambiguously defines the means of escape and exits from the</p> | Medium | D | | |

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| | <p>The way finding / fire exit signage in the tenant storage areas is considered inadequate.</p> <p>It could not be conformed if the emergency lighting in these areas is adequate.</p> <p>It is understood that emergency lighting and exit signage will be improved by CoL to meet the current relevant standards.</p> | <p>tenant storage areas, in compliance with BS5499.</p> <p>2 - CoL emergency lighting project. Ensure EML meets BS5266 part 1.</p> <p>3 – As part of a retrospective fire strategy for the building consider if any additional measures are necessary to reduce the risk of the increased travel distance in this area of the building.</p> | | | | |
| 3. | Wayfinding signage in and emergency lighting in and from the switch gear room appears to be inadequate. | Ensure that the Switch gear room is considered as part of the signage and emergency lighting surveys / upgrades. | Low | D | | |
| 4. | <p>Caretakers Room</p> <p>There was an unsafe extension cable in the Caretakers Room. It appears that two cables have been joined together. This was reported to CoL during the assessment visit.</p> | <p>Dispose of the unsafe extension cable.</p> <p>Ensure all portable appliances are PAT tested in compliance with CoL policy.</p> | Medium | C | | |

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| | Portable appliances in this room did not appear to have up to date PAT labels. | | | | | |
| 5. | The Fire Action Notices do not describe the Stay Put strategy. | The Fire Action Notices (FANS) should be replaced with signs that describe the Stay Put Strategy. FANS should at least be displayed at all the entrances to the building. It is understood this will be completed as part of the CoL signage project. | Low | D | | |
| 6. | Floor level and flat number signs are not displayed in the stairways, as will be required by current legislation – the Fire Safety (England) Regulations 2022. | As part of the signage project, it is advised that floor level number and flat number signage is brought in line with current standards i.e. Approved Document B 2019 ed. incorporating 2020 amendments – “Wayfinding signage for the fire service”. The requirement is: To assist the fire service to identify each floor in a block of flats with a top storey more than 11m above ground level, floor identification signs and flat indicator signs should be provided. | Low | D | | |

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| | | <p>The floor identification signs should meet all of the following conditions.</p> <p>a. The signs should be located on every landing of a protected stairway and every protected corridor/lobby (or open access balcony) into which a firefighting lift opens.</p> <p>b. The text should be in sans serif typeface with a letter height of at least 50mm. The height of the numeral that designates the floor number should be at least 75mm.</p> <p>c. The signs should be visible from the top step of a firefighting stair and, where possible, from inside a firefighting lift when the lift car doors open.</p> <p>d. The signs should be mounted between 1.7m and 2m above floor level and, as far as practicable, all the signs should be mounted at the same height.</p> <p>e. The text should be on a contrasting background, easily legible and readable in low level lighting conditions or when illuminated with a torch.</p> | | | | |
| 7. | There is no smoke ventilation at the head of the non-firefighting stairways (other than some windows that can be | Due to the height of the building, and because the flats open directly into the stairs, it is advised that | Medium | E | | |

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| | <p>opened from the outside only). It appears that there could originally have been open vents at the heads of the stairways but if so that they may have been removed by new window installations.</p> <p>It's noted that the Arup fire strategy for Andrew's House which is of a similar design, recommends that Automatic Opening Vents (AOVs) are installed in these stairways, for escape purposes.</p> | AOVs are installed to provide 1m2 of smoke ventilation at the heads of the non-firefighting stairs. | | | | |
| 8. | <p>It is understood that there is no specific planned preventative maintenance regime for the glazed privacy doors/screens along the linking balconies.</p> <p>Weather conditions can affect the door and fixings, and therefore the ease of operation of escape device.</p> | It is advised that a planned preventative maintenance regime is put in place to ensure that the glazed privacy doors/screens remain openable at all times i.e., fixings / bolts remain in a good and easily openable condition. It is recommended the doors be inspected at least annually. | Low | D | | |
| 9. | It was confirmed that there is no current flat entrance door inspection regime. The Fire Safety Act 2022 has confirmed that Flat Entrance Doors fall within the scope of the Regulatory Reform (Fire Safety) Order 2005. | <p>Ensure that a long-term programme is in place for the completion of:</p> <ul style="list-style-type: none"> • quarterly communal fire door inspections, and • annual flat entrance door inspections (where leaseholder cooperation will need to be sought) <p>in accordance with the Fire Safety (England) Regulations 2022,</p> | Low | D | | |

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| | | <p>which come into effect January 2023 and any associated guidance.</p> <p>Inspections should ensure that the doors remain in good condition and an effective self-closer is in place.</p> | | | | |
| 10. | <p>The flat entrance doors appear to be of the same type. Based on information provided they are considered to be notional fire doors, with no effective self-closing device fitted. Therefore, the flat entrance doors to not comply with historic or current fire safety standards or guidance.</p> <p>The side cupboards which form part of the door set and contain storage and electrical meters may also not provide adequate fire resistance as the cupboard doors between the flat and the common stairway can potentially be left open.</p> <p>It is understood that a programme is in place to replace all the flat entrance doors including the side cupboard doors with certified FD60S door sets fitted with external overhead self-closing devices.</p> | <p>Flat entrance doors are to be renewed as part of CoL's door replacement programme which is replacing the doors with FD60S fire door sets.</p> <p>As an interim measure, CoL should at least ensure that all existing notional flat entrance doors self-close by installing overhead self-closers the flat entrance doors.</p> | Medium | E | | |

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| 11. | <p>Fire-fighting stairs –</p> <p>The fire doors / partitions protecting the fire fighting stairs do not comply with current standards (which require 120 minute partitions with FD60S doors). These doors are considered to be notional fire doors only and are fitted with Georgian wired glass side panels. Several of these door sets have excessive gaps between the meeting edges.</p> <p>It is understood these doors will be replaced as part of the fire door replacement project.</p> | <p>CoL communal fire door replacement project.</p> <p>It is advised that FD60S doors are fitted with at least REI 60 rated side panels to the partitions that separate the firefighting stairs from the lift/accommodation lobbies.</p> | Medium | E | | |
| 12. | <p>The PPM audit found Barbican Estates were able to demonstrate suitable maintenance regimes for the majority of systems, but also identified the following concerns:</p> <ul style="list-style-type: none"> • No 6-month Visual Inspection regime for Rising Mains • Several months delay in obtaining certificates for Annual Dry Riser Test, Lightning Protection, and sprinkler systems. • It is understood that approximately 50% of the | <p>Barbican Estates should review their planned preventative maintenance arrangements to ensure suitable cleaning, inspection, test and maintenance (as relevant) regimes are in place for the following:</p> <ul style="list-style-type: none"> • Six-monthly visual inspection of Rising Mains (per BS9990) • It is advised that a PPM regime is developed for Smoke control systems i.e. Openable Vents (OVs) and | Medium | C | | |

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| | <p>Barbicans fixed electrical systems (Distribution Boards etc) are considered “unsatisfactory”, and / or have not been electrically inspected for at least 5 years. It is understood that non-compliant systems are being rectified on an ongoing basis but that no formal remedial works programme is in place.</p> <ul style="list-style-type: none"> No PPM regime for most smoke control systems, i.e. Openable Vents (OVs) and Permanently Open Vents (POV) / smoke shafts. This is also covered by a separate action. | <p>Permanently Open Vents (POV) / smoke shafts</p> <ul style="list-style-type: none"> It is advised that a programme of remedial works is developed for fixed electrical systems that are considered to be unsatisfactory It is advised that Barbican Estates liaise with their suppliers to ensure PPM certificates are provided in a timely manner, in order to demonstrate compliance to relevant stakeholders | | | | |
| 13. | <p>Lift Landing lights</p> <p>There are light fittings above the lifts. These lights are fitted with metal hoods that separate them from the risers.</p> <p>It was noted that several of these hoods had been displaced, effectively leaving an open hole between the risers and stairwell.</p> | <p>All of the lift landing lights should be checked to ensure that the metal covers are in place with no gaps. Where gaps are identified they should be sealed to ensure that there is at least 30 minutes imperforate compartmentation between the riser and lift lobby.</p> | Medium | D | | |

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| 14. | <p>The Fire Safety (England) Regulations 2022 place additional requirements on CoL as a Responsible Person under the Regulatory Reform (Fire Safety) Order 2005.</p> | <p>CoL should ensure that they have suitable arrangements in place to discharge their responsibilities under the Fire Safety (England) Regulations 2022.</p> <p>The regulations will come into force on 23 January 2023 following the publication of supporting guidance which is due later in 2022.</p> <p>In summary –</p> <p>For high-rise residential buildings (a multi-occupied residential building at least 18 metres in height or 7 or more storeys), responsible persons must:</p> <ul style="list-style-type: none"> • share electronically with their local fire and rescue service (FRS) information about the building’s external wall system and provide the FRS with electronic copies of floor plans and building plans for the building • keep hard copies of the building’s floor plans, in addition to a single page | Medium | D | | |

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| | | <p>orientation plan of the building, and the name and UK contact details of the responsible person in a secure information box which is accessible by firefighters</p> <ul style="list-style-type: none"> • install wayfinding signage in all high-rise buildings which is visible in low light conditions • establish a minimum of monthly checks on lifts which are for the use of firefighters in high-rise residential buildings and on essential pieces of firefighting equipment • inform the FRS if a lift used by firefighters or one of the pieces of firefighting equipment is out of order for longer than 24 hours <p>For multi-occupied residential buildings over 11 metres in height, responsible persons must:</p> <ul style="list-style-type: none"> • undertake quarterly checks on all communal fire doors and annual checks on flat entrance doors | | | | |
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| | | <p>In all multi-occupied residential buildings, responsible persons must:</p> <ul style="list-style-type: none"> provide residents with relevant fire safety instructions and information about the importance of fire doors <p>The Fire Safety Act (FSA) clarifies the scope of the Fire Safety Order to make clear it applies to the structure, external walls (including cladding and balconies) and individual flat entrance doors between domestic premises and the common parts.</p> | | | | |
| 15. | <p>The firefighting access door is fitted with a lock. No keys are provided in the Premises Information Box (PIB).</p> <p>Although there is a 24/4 car park attendant located nearby who should have the keys, it is advised the keys are retained in the PIB as a fallback measure.</p> | <p>It is advised that keys for the access door(s) are provided in the new secure premises information box to facilitate fire fighter's access.</p> <p>For clarity, the PIB should be labelled with the building name.</p> | Low | D | | |

Action time frame in accordance with CoL service level agreements

Table One

| <i>Priorities for remedial action listed below;</i> | <i>Recommend priority code & time frame</i> |
|---|---|
| Priority Action AA Immediate action taken whilst on site | (P1) 2 hour attendance |
| Priority Action A Immediate action required | (P2) 24 Hours |
| Priority Action B Action required in the short term | (P3) 4 Days |
| Priority Action C Action required in the short term | (P4) 28 Days |
| Priority Action D Remedial action required in the long term | 3 Months |
| Priority Action E Action to be consider when refurbishing | Project Planning Stage |
| Priority Action H/S Health & Safety Information | (P2) Action 24 hrs. |
| P3A over weekend when attendance will wait until Monday for attendance not warranting a 24hr P2 | |

Additional Comments to the assessment:

Fire Risk Assessment reviews (CoL use only)

This Fire Risk Assessment should be reviewed annually and whenever there is a material change in the use of the premises or part of the premises (including numbers of occupants) or when significant structural or layout changes to the premises are proposed or carried out. The table below is provided for the 'Responsible Person' at the premises to maintain a record of reviews and provides space for simple comments. If the review indicates significant change then a new complete Fire Risk Assessment by our professional assessment providers should be carried out and fully documented.

| Date | Reason for review | Results / Comments | Name, Position & Signature |
|-------------|--------------------------|---------------------------|---------------------------------------|
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Appendix One

Pre-Survey Questionnaire

Information Required Pre-Site Visit (21 days)

Not provided.

Annex A – Actions outstanding from previous fire risk assessment

| <p><i>Ref Number:</i></p> <p><i>Location:</i></p> | <p><i>Previous/Outstanding Action</i></p> | <p><i>Turner & Townsend Comments</i></p> |
|---|---|---|
| <p>2.4</p> | <p>Evidence was not available to confirm the fixed wiring installation is subject to an appropriate programme of periodic testing. Ensure a robust programme of 5 year fixed wiring testing is Implemented.</p> | <p>See Action 12 in this FRA</p> |
| <p>13.1</p> | <p>Due to the survey being undertaken during daylight hours it was not possible to determine If an adequate provision of emergency lighting exists throughout the premises. A survey should be undertaken by a competent person; with any identified issues being rectified to ensure the system complies with BS 5266.</p> | <p>It was not possible to confirm the adequacy of the emergency lighting, particularly any standby lighting.</p> <p>See Action 1 in this FRA</p> |
| <p>15.1&15.2</p> | <ul style="list-style-type: none"> • The flat entrance door is consistent with those throughout the block. It does not comply with current standards. • It appears to be of substantial construction, without substantial rebates, smoke strips or intumescent seals, hinges x3 do not appear to be of fire resisting standard. The centre hinge appears to be of spring-loaded design, to assist with door closing; however It was noted that this arrangement did not result In the door self-closing effectively. Due to the opportunity for means of escape in 2 directions; this situation is considered acceptable. Consideration should be given to upgrading/replacing doors on the means of escape routes; to current standards as part of any future refurbishment program. Consideration should be given to implementing a robust program of testing and servicing for spring loaded hinges; | <p>This is still the same. City of London has confirmed that all flat entrance doors will be replaced.</p> <p>See Action 10 in this FRA</p> |

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| | to ensure final exit doors close effectively. | |
| 17.2 | It was noted that numerous doors to electrical intakes, service risers, plant rooms, stores and similar; within escape routes are not provided with 'fire door keep locked shut' signs. • Lobby doors are not provided with 'fire door keep shut signs'. • 'Do not use lift in case of fire' signs are not displayed adjacent to lift enclosures. Ensure appropriate signs are displayed. | <p>This is still the case.</p> <p>In some areas, particularly in the stairway below podium level, fire safety escape signage is considered to be inadequate.</p> <p>This had previously been identified and a “Barbican Fire Sign Strategy” was completed by BB7 in October 2021. This detailed strategy highlights the deficiencies and provides recommendations for new signage.</p> |
| 17.5 | Fire action notices are inconsistently displayed In communal areas and the guidance Is ambiguous in respect of a 'stay put' evacuation strategy. Consideration should be given to replacing this signage with more definitive instructions. | <p>Fire action notices are still considered to be inadequate.</p> <p>See action 5 in this FRA.</p> |
| 19.4 | It was noted that portable fire Priority extinguishers are provided within the communal areas. Typically fire extinguishers are not provided within this type of property as residents are unlikely to have been appropriately trained. Consideration should be given to their removal. | Fire extinguishers had been removed from the communal areas. |
| 20.2 | As part of the fire risk assessment process a documentation audit was undertaken In respect of the specific premises. The brief was to randomly sample 6 categories from a detailed list. In this Instance the only records available at the Estate Office were as follows; • Whilst it is evident that Allied Protection are maintaining fire alarm systems: contractors are not updating | See action 12 in this FRA |

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| | <p>documented records. • Records were not available to evidence the recently implemented program of fire door inspections. • Fire stopping registers are not in place; this has specific relevance in respect of PDA's & EDA's. • Portable firefighting equipment is out of test date; this situation is expected to be resolved in response to relevant guidance provided elsewhere in this report. • Records of fire brigade operation attendances are not maintained. • Various Col FS guidance notes. Priority C 12 It is recommended that robust arrangements be implemented to ensure the requirements of Col Guidance Note on Fire Log Books on Col premises are achieved.</p> | |
| 20.6 | <p>The emergency services box contained; 1) Estate block plan map. 2) Useful telephone numbers list. 3) Block plan. Consideration should be given to Liaising with London Fire Brigade to rationalise/standardise the information contained within boxes.</p> | <p>The contents of the PIB boxes are under review by COL.</p> |
| 22.4 | <p>It was noted that portable fire extinguishers within communal areas and plant rooms (provided for use by competent persons) have not been subject to servicing within the past 12 months. Subject to comments in 19.4, ensure all such equipment is robustly maintained</p> | <p>City of London were completing a Fire Extinguisher survey, and ongoing servicing programme at the time of this assessment.</p> |

Annex B - Unintentional fires during the last two years

None known.

Annex C – maintenance records of fire systems

| Fire Safety Documentation | | |
|---|--------------------------|---|
| Documentation | Available to view | Evidence viewed |
| Fire Safety Strategy Report | No | No Fire Strategy available. |
| Updated Fire Safety Strategy Report and/or Fire Safety Strategy Technical note (reflecting any changes, refurbishments) | No | See above |
| Fire Compartmentation Drawings | No | None provided. |
| Fire Risk Assessment report | Yes | The previous FRA was undertaken by Frankham RMS in January 2018. |
| Building (floor plan) drawings | Yes | Available in the PIB boxes. |
| BS 9999:2017 – Fire safety in the design, management and use of buildings. Code of practice | N/A | BS 9999 is not applicable to residential blocks of flats. |
| BS 9997:2019 Fire Risk Management system. | N/A | |
| Third-Party Statutory Examination/Testing Certification | | |
| Equipment | Available to view | Contractor / Issue date(s) / Frequency |
| Automatic Fire detection and alarm | N/A | No communal fire alarm installed. |
| Emergency and exit lighting | Yes | Annual duration testing. Back up Generator. Periodic testing in accordance with BS5266 Part 1 |
| Fire extinguishers and fire blankets | Yes | The fire extinguishers should be maintained annually. Ongoing renewal and maintenance plan demonstrated. |

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| Sprinklers | N/A | The sprinklers at sub-podium levels are part of the car park system so are covered by the FRA for the Defoe/Shakespeare car park. |
| Fire dampers | N/A | No fire dampers identified |
| Gas suppressant systems | N/A | No gas suppression systems in the CoL controlled areas of the building – Any CO2 systems are under 3 rd party control. |
| Lightning protection system (LP) | Yes | Annual Lightning Protection Test and Inspection. |
| Gas heating/boiler plant safety checks | N/A | No communal gas system. |
| Gas cooking appliances | N/A | No gas cooking facilities within the common areas. |
| Fixed mains electrical installation | No | 5-Year Fixed Electrical Inspection. See action 10 |
| Portable appliance testing | No | PAT testing in accordance with CoL policy and HSE guidance. See action 4 in this FRA |
| Fire rated shutters | N/A | Fire shutters are considered to be in the car park so covered by a separate FRA. |
| Evacuation aids | N/A | There are no evacuation aids. |
| Firefighter's Lifts | N/A | No fire fighters lifts. The building has one fireman's lift which appears to be installed in accordance with the original fire design standards at the time of construction (CP3). |
| AOC control system | N/A | |
| Fire Hydrant testing (within the curtilage of the premises) | N/A | The hydrants are located on the public highway |
| Wet risers | N/A | No Wet Riser |
| Dry risers | No | 6- Monthly Visual Inspection and Annual Pressure Test. No 6M Visual Inspection Record– See Action 10 |

| In-House Documentation | | |
|---|--------------------------|--|
| Equipment | Available to view | Who by / Date(s) / Frequency |
| Fire alarm call point activations | No | No fire alarm |
| Internal fire rated doors | No | Per Fire Safety (England) Regulations 2022 - Quarterly Inspection of communal fire doors and Annual Inspection of flat entrance doors. |
| Fire exit doors | No | 3-Monthly check of fire exit doors, especially on external doors not used for other purpose. |
| Emergency lighting | Yes | 3- Monthly emergency lighting 1 hour duration test. |
| Fire extinguishers | Yes | Fire extinguishers Routine check (location, pressure gauge and tags) |
| Fire sprinklers pump set weekly checks | N/A | The sprinklers at sub-podium levels are part of the car park system so are covered by the FRA for the Defoe/Shakespeare car park. |
| Fire dampers | N/A | No dampers identified with the building |
| Fire evacuation drills | N/A | Not applicable in a residential block of flats |
| Evacuation aids | N/A | Not applicable in a residential block of flats |
| Fire Safety Training Records | | |
| Equipment | Available to view | Evidence |
| Duty Holder – Fire (Scotland) Act 2005 duties and responsibilities | N/A | |
| Competent Person – Fire (Scotland) Act 2005 duties and responsibilities | N/A | |

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| Fire Incident Controller | N/A | |
| Fire Warden / Marshal | N/A | |
| Use of fire extinguishers/blankets (Article 21-Training of the Regulatory Reform Fire (Scotland) Act 2005 2005)) | Yes | It is understood that this is covered as part of CoL periodic fire safety training which all employees must complete. |
| Employee fire safety | Yes | No records were seen on site as these are held centrally. However, it is understood that periodic fire safety training is undertaken. |
| New employee – fire safety induction | Yes | It is understood that that all employees must complete online fire training as part of the induction process. |
| Fire sprinkler operational checks | N/A | The sprinklers at sub-podium levels are part of the car park system so are covered by the FRA for the Defoe/Shakespeare car park. |
| Evacuation Aids | N/A | |