FIRE SAFETY RISK ASSESSMENT
EUSTON TOWER

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ac fire safety
protection through prevention

Quality Management

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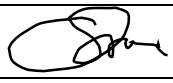
Prepared by:	**Chris Stone**			

Author: Christopher Stone **Date: 13th December 2015**

Signed: 

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Signed: 

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Report Information

Fire Safety Report for:

Client [redacted]

Prepared by:

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1. Executive Summary

Fire safety in tall buildings present unique challenges to ensure compliance. Euston Tower was built in the late 1960s and has changed slightly since the original design.

There was no original design information for Euston Tower but plans from the 1990s in fire certificates were found and other information has helped to understand the building design of that period. Buildings built in London at this time were built with simultaneous evacuation as the main evacuation procedure. There have been significant enhancements in the building since it was originally built mainly in the form of a new L1 fire alarm system and 2 evacuation lifts.

This fire risk assessment has aimed to not only identify hazards and risks but also to provide solutions with a risk based approach for occupancy figures and recommendations on the set up of the fire alarm to reduce the impact on the building users whilst still taking into consideration the building design. This report takes into consideration the size and scale of the building to ensure the risk of the building is at a tolerable level and also takes into account the original design of the building and enhancements already in place.

The current maximum occupancy in the building is: **3873 persons**

The maximum recommended occupancy numbers for the building:

- No more than **165 people per floor** (office) excluding first floor.
- Maximum capacity in the building of **5300 persons**. This includes 300 persons on first floor.

Overall the level of fire safety in the building is good with good management procedures, an L1 fire alarm system and good compartmentation.

The main points from the action plan are:

- Long term solution for basement LV room;
- Improvements required to cleaners work patterns to prevent means of escape becoming blocked due to rubbish;
- Their needs to be 5/6 nominated fire marshals per floor and they need trained to ensure evacuation procedure is followed adequately.

2. Introduction

2.1 Purpose of Report

This risk assessment looks at all common areas and HMRC areas. The individual tenants are responsible for their own fire risk assessment and under article 22 of the Regulatory reform (Fire Safety) Order 2005 it is advisable to share risk assessments with other responsible persons to ensure all hazards have been identified and risks considered. The basement car park is managed by Regents Place and falls outside the scope of this risk assessment but any areas that would have a direct impact on Euston Tower that have been identified will form part of this document.

2.2 Layout of Report

This risk assessment follows the framework of PAS 79 which sets out the methodology for undertaking risk assessments. Although not a British Standard, it has been developed and published by the British Standards Institution, BSI. It was prepared with the support and encouragement of the Institution of Fire Engineers and the Northern Ireland Fire Safety Panel – we led the drafting of the guidance on fire risk assessment contained within the document.

PAS 79 is specifically aimed at ensuring that all necessary information relating to the fire risk assessment and its findings is recorded. The need to carry out a fire risk assessment and to document the significant findings from that assessment is fundamental to current fire law.

2.3 Building Information

Euston Tower consists of a basement, ground floor and 35 upper floors. There is an area on the penthouse level which could not be accessed. The building is primarily used as office space with tenanted shops on the ground floor. Management responsibility for these shops rests with the landlord Regents Place although the fire alarm is linked to Euston Tower fire alarm.

Plant rooms are located on the 12th floor, part of the 34th and all of the 35th floor levels. Other ancillary accommodation is provided in the basement area, which consists of the oil tank room, lift motor room, wet riser pump room, electrical intake, LV switch room, BT frame room & storage areas.

The basement car park area extends a significant distance horizontally and this is the owned by British Land but managed by Regents Place.

The building is served by 10 lifts in the central core, 5 high rise (Floors 20-34) & 5 low rise (Ground floor – 19). There are Evac/Fire fighting lifts in the East and West lobbies which serve the whole building.

There are four protected staircases utilised for escape purposes, these are the North, East, South and West, which all ultimately discharge directly into external areas outside the confines of the building. Each staircase is equipped with natural smoke vents at the head of the stairs, can be opened by the fireman's switch located in main reception if necessary to provide additional staircase ventilation in a fire situation.

The designated primary fire assembly point is located at Munster Square, off Laxton Place with alternative assembly points provided if required.

As stated earlier each stairwell is equipped with natural smoke vents, these being positioned at the head of each staircase enclosures. Additional, natural, manually-operated vents are provided within both the East & West fireman's lift lobbies. Furthermore, there is potential for additional venting of the staircases due to the fact that openable windows are provided at each floor level within each of the staircases.

Some areas on 36rd floor were inaccessible.

GENERAL INFORMATION

THE PREMISES

Number of floors:	38	
Approximate floor area:	1,150	m^2 per floor
	46,400	m^2 gross
	2,500	m^2 on ground floor *[enter units as appropriate]*

Brief details of building

Euston Tower is a high-rise building with a height of approximately 124 meters. The building is constructed with a steel frame and curtain walls. The building was built in the late 1960s and is made up of 4 wings which each have their own stairwell. The Ground Floor has an additional two stairs for escape.

Use of premises

The building is used as office space by different tenants:

Floors 1-19 HMRC

Floors 20 onwards have the following tenants

- Tom Tom
- T Systems Ltd
- ACAS
- Atkins
- Faithful & Gould
- Office Space in Town

Floors 12 & 35 are plant rooms only. 34th Floor combines office and plant space.

THE OCCUPANTS

Approximate maximum number:	5300 (see below)
Approximate number of employees at any one time:	2729 - 3373
Maximum number of members of public at any one time:	500 - 700
Associated times/hours of occupation:	Normal hours 0700-1900 Security 24/7

During the risk assessment the following numbers were provided to show the current occupancies per floor:

Floor	Numbers provided	Floor	Numbers provided
G	16	**19**	106
1	(300) Visitors	**20**	140
2	165	**21**	165
3	113	**22**	165
4	87	**23**	165
5	65	**24**	107
6	50	**25**	151
7	70	**26**	155
8	52	**27**	159
9	100	**28**	78
10	81	**29**	30

11	56	**30**	110
12	Plant	**31**	120
13	105	**32**	100
14	98	**33**	100
15	96	**34**	50
16	101	**35**	5
17	116	**Visitors (average)**	500
18	112	**Total**	3873

Yellow represents the floors where no occupancy figures were received. I have therefore presumed the maximum occupancy per floor. HMRC have approx. 300 visitors a day so this is presumed to be mainly on first floor. Floor 1 has zero occupancy as it's presumed that most HMRC visitors will go to this floor.

Some floors were undergoing refurbishments which means that the numbers of persons per floor were lower than normal.

Maximum occupancy for building

In order to provide a maximum operating figure for Euston Tower the following has been considered:

As the building was built in the 1960s it would have been designed for simultaneous evacuation. Tall buildings built today and over the last 20 years would have been built with phased evacuation in the design and would have been provided with the sprinkler protection throughout and compartmentation to achieve this aim. Without these in Euston Tower it is strongly recommended to simultaneously evacuate the building. The building is set up with staged simultaneous evacuation to reduce impact of false alarms.

Measurements for doors, stairs and final exits were taken using the methods of measurements in Appendix C from Approved document B (snapshot below).

Width

4. The width of:

a. a **door (or doorway)** is the clear width when the door is open (see Diagram C1);

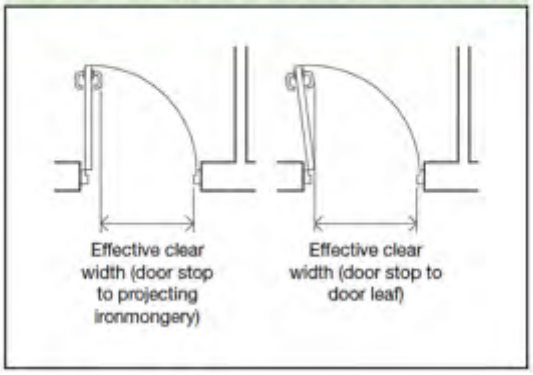
b. an **escape route** is the width at 1500mm above floor level when defined by walls or, elsewhere, the minimum width of passage available between any fixed obstructions;

c. a **stair** is the clear width between the walls or balustrades.

Note 1: In the case of escape routes and stairs, handrails and strings which do not intrude more than 100mm into these widths may be ignored (see Diagram C1).

Note 2: The rails used for guiding a stair-lift may be ignored when considering the width of a stair. However, it is important that the chair or carriage is able to be parked in a position that does not cause an obstruction to either the stair or landing.

Diagram C1 **Measurement of door width**



Stairwell	Door Width (mm)	Stair Width (mm)	Final Exit (mm)
South (Gold)	710	1130	1320
North (Black)	740	960	1320
East (Silver)	1020	1130	1320
West (Red)	1000	1120	1320

There is the potential to slightly increase the door width sizes by reconfiguring doors or doorstops but this would only slightly increase widths.

Maximum numbers of persons for simultaneous evacuation of a building

The following numbers are based on simultaneous evacuation (Table 7) of Approved document B using linear extrapolation:

Maximum number of persons served by a stair of 1100mm – 1540 persons

1540 persons x 3 stairwells = 4620 persons

Maximum number of persons served by a stair of 960mm (Stairs should be no smaller than 1000mm); so this calculation will be based on width of 1000mm = 1470

Therefore, maximum number of persons using 4 stairwells would be – **6090**

This number represents the maximum number of persons that can use the stairs in an emergency but additional factors need to be considered in determining a safe occupancy number:

- There are low ceilings in the stairwell (less than 2 meters in some areas), which will slow the safe egress time.
- Floor space factors. The table below shows the maximum number of persons based on floor space factors

Maximum Number of Persons based on Floor Space factors

Floor	Use	Available Floor space (m2)	Floor Space Factor (m2)	Maximum number of persons per floor
B	Plant/Storage			10
G	Offices/Circulation space	990	6	165
1	Office/Meeting rooms	1200	6 (office) & 1 (Meeting rooms)	300
2	Office	990	6	165
3	Office	990	6	165
4	Office	990	6	165
5	Office	990	6	165
6	Office	990	6	165
7	Office	990	6	165
8	Office	990	6	165
9	Office	990	6	165
10	Office	990	6	165
11	Office	990	6	165
12	Plant only			5
13	Office	990	6	165
14	Office	990	6	165
15	Office	990	6	165
16	Office	990	6	165
17	Office	990	6	165
18	Office	990	6	165

19	Office	990	6	165
20	Office	990	6	165
21	Office	990	6	165
22	Office	990	6	165
23	Office	990	6	165
24	Office	990	6	165
25	Office	990	6	165
26	Office	990	6	165
27	Office	990	6	165
28	Office	990	6	165
29	Office	990	6	165
30	Office	990	6	165
31	Office	990	6	165
32	Office	990	6	165
33	Office	990	6	165
34 (Office)	Office	500	6	83
34 (Plant)	Plant only			5
35	Plant/Engineers office			10
Total				**5693**

- Based on floor space factors alone the building could have 5693 persons occupying the building.
- Door widths including the discounting of the largest door would provide 230 persons but this is in excess of 165 persons allowed for floor space factors.
- Consideration is given to the size and use of the 1st floor and 2 additional escape routes from this area. The first floor has small offices and meeting rooms and a conference area and café/kitchen area. The conference area and restaurant would have a floor space factor of 1m2 per person therefore it would be reasonable to expect there to be in excess of 165 people on this floor. The conference room holds 100 persons, the restaurant if at full capacity could hold approximately 100 people and allowing for additional meeting rooms and offices a capacity of 300 would be reasonable for this floor given use and additional 2 escape stairs. If the two stand-alone stairs for the first floor were used as primary escape routes then this would ease the numbers of persons in main stairwells.

Therefore based on the figures on the methodology above I would recommend the following occupancy figures for the building:

- No more than **165 people per floor** (office) excluding first floor.
- Maximum capacity in the building of **5300 persons**. This includes 300 persons on First floor.

OCCUPANTS ESPECIALLY AT RISK FROM FIRE

Sleeping occupants: None

Disabled occupants: All occupiers provide building management with PEEPs of staff that require evacuation by lift. At present there was 120 PEEPs in place. A recent drill was carried out and all person were evacuated within 35 minutes. Regular monitoring of PEEPs will allow building management to plan and prepare for mobility impaired evacuation. It is the responsibility of the occupier to inform the building manager and this would affect the evacuation plan. These should be reviewed every 3 months.

Occupants in remote areas and lone workers: Lone worker procedure in place but no procedure verified. Lone workers will have radios.

Young persons: None

Others:

n/a

FIRE LOSS EXPERIENCE

No recent fire loss.

Fire Risk Assessments provided from other occupants

- Regents Place Estate, Fire Con, 09/06/2014
- Faithful & Gould covering floors 24 to 31, 30/10/2014
- Tom Tom, February 2012
- T Systems, 17/09/09

I would recommend that this risk assessment be shared with other occupants.

2.4 Legislation

The Regulatory Reform (Fire Safety) Order 2005

A review of fire safety law in the UK was undertaken using the mechanism of regulatory reform, introduced under the Regulatory Reform Act 2001. This provided a new flexible statutory system with the capability to reform existing primary and subsidiary law through regulatory reform orders.

The outcome was the Regulatory Reform (Fire Safety) Order 2005: Statutory Instrument 2005 No 1541. The Fire Safety Order was passed by Parliament on 7 June 2005 and came into force in England and Wales on 1 October 2006. Similar provisions in Northern Ireland and Scotland have extended this form of regime to all parts of the UK.

When introduced, it was stated that the Fire Safety Order would maintain the protection afforded to users of premises by existing legislation, and reduce difficulties by:

- So far as possible creating one simple fire safety regime applying to all workplaces and other non-domestic premises;
- Introducing a regime that is risk assessment-based with responsibility for the fire safety of the occupants of premises and people who might be affected;
- Ensuring that compliance for fire safety rests with a defined responsible person;
- Avoiding separate formal validation mechanisms for higher-risk premises (fire authorities are to base their inspection programs on their assessment of which premises they consider present the highest risk);
- Adding a duty to maintain those fire precautions required under the building regulations and other similar legislation, which are for the use and protection of the fire service; and
- Providing fire authorities with powers of entry for fire investigation and to obtain samples for testing.

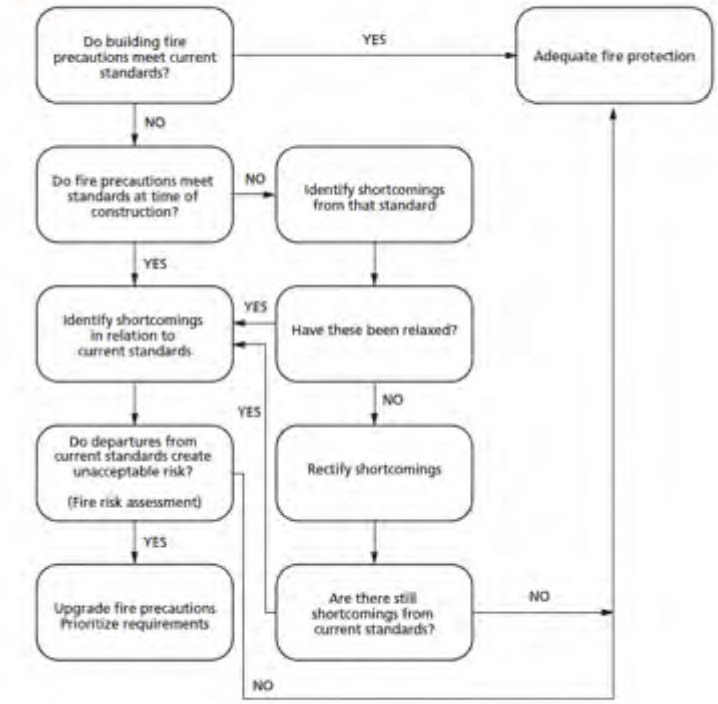
3. Methodology

The fire risk assessment is a bespoke risk assessment looking at the life risk within Euston Tower as well as making recommendations for property protection. The risk assessment is a qualitative risk assessment that uses the sections of PAS 79 but expands on this to create a bespoke holistic fire safety report.

The diagram below is a snapshot taken from PAS 79:2012 and shows the decision tree which should be followed when assessing buildings that do not comply with current standards and will be used to make decisions on risk and subsequent actions.

PAS 79:2012

Figure 2 – Decision Tree for action plan when existing premises do not comply with current standards



PAS 79: Fire risk assessment; Guidance and recommended methodology was prepared with support and encouragement by the Institute of Fire Engineers and the following organizations were consulted in the development of PAS 79:

- Association of Building Engineers (ABE)
- British Approvals for Fire Equipment (BAFE)
- British Broadcasting Corporation (BBC)

- Chief Fire Officers' Association (CFOA)
- Fire Industry Association (FIA)
- Fire Protection Association (FPA)
- Institution of Fire Engineers (IFE)
- Institute of Fire Prevention Officers (IFPO)
- Institute of Fire Safety Managers (IFSM)
- Northern Ireland Fire Safety Panel
- Odeon Cinemas Limited.

As stated within PAS 79, "there is no single perfect method of risk assessment", however for the purposes of this risk assessment PAS 79 provides a basic foundation for the risk assessment to be based on. Where necessary in the document areas of non compliances are justified using an the authors knowledge and experience.

4. Fire Risk Assessment

REGULATORY REFORM (FIRE SAFETY) ORDER 2005
FIRE RISK ASSESSMENT

Responsible person (e.g. employer) or person having control of the premises:	[redacted]
Address of premises:	Euston Tower, 286 Euston Road, London
Assessor:	Christopher Stone BA (Hons), MPA, MIFSM, MIFPO
Date of fire risk assessment:	09/12/2015
Date of previous fire risk assessment:	21/01/2015
Suggested date for review: [1]	December 2016

The purpose of this report is to provide an assessment of the risk to life from fire in these premises, and, where appropriate, to make recommendations to ensure compliance with fire safety legislation..

[Date]	09/12/2015

[1] The original fire risk assessment should be reviewed again by a competent person by the date indicated above or at such earlier time as there is reason to suspect that it is no longer valid or if there has been a significant change in the matters to which it relates, or if a fire occurs.

Responsible Person

The extract below is taken from Article 3 of The Regulatory Reform (Fire Safety) Order 2005 (RRFSO):

Meaning of "responsible person"

3. In this Order "responsible person" means—

(a) in relation to a workplace, the employer, if the workplace is to any extent under his control;

(b) in relation to any premises not falling within paragraph (a)—

(i) 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

(ii) 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.

Euston Tower has a number of Responsible Persons, these being:

[redacted]d;

- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]

There are also a number of 'quasi' responsible persons or duty holders who have responsibility under The Regulatory Reform (Fire Safety) Order 2005 (RRFSO). These are:

- Engineering Team
- Cleaners
- Security
- Catering

In buildings where there is shared responsibility it is essential that cooperation and coordination is carried out between all Responsible Persons and where necessary duty holders to ensure compliance with legislation. Article 22 of the RRFSO states the following:

Co-operation and co-ordination

22.—(1) Where two or more responsible persons share, or have duties in respect of, premises (whether on a temporary or a permanent basis) each such person must—

(a) co-operate with the other responsible person concerned so far as is necessary to enable them to comply with the requirements and prohibitions imposed on them by or under this Order;

(b) (taking into account the nature of his activities) take all reasonable steps to co-ordinate the measures he takes to comply with the requirements and prohibitions imposed on him by or under this Order with the measures the other responsible persons are taking to comply with the requirements and prohibitions imposed on them by or under this Order; and

(c) take all reasonable steps to inform the other responsible persons concerned of the risks to relevant persons arising out of or in connection with the conduct by him of his undertaking.

(2) Where two or more responsible persons share premises (whether on a temporary or a permanent basis) where an explosive atmosphere may occur, the responsible person who has overall responsibility for the premises must co-ordinate the implementation of all the measures required by this Part to be taken to protect relevant persons from any risk from the explosive atmosphere.

4.1 Electrical Sources of Ignition

Reasonable measures taken to prevent fires of electrical origin?	**Yes** ☒	No
More specifically:		
Fixed installation periodically inspected and tested?	☒ **Yes**	No
Portable appliance testing (where appropriate) carried out?	☒ **Yes**	No
Suitable policy regarding the use of personal electrical appliances?	☒ **Yes**	No
Suitable limitation of trailing leads and adapters?	**Yes** ☒	No

Comments and Hazards Observed

The 5-year fixed wiring test carried out on 14th July 2015 by Phs compliance and showed a few remedials were outstanding. These are on track record and in progress.

In the basement electrical room there has previously been some water ingress but an interim measure is in place to contain and divert any potential water into this area. A long term solution is proposed for Feb/March on the LV which will allow the action to be closed down.

There are interim measures in place – contains and diverts so if fine.

There was daisy chaining of extension leads in the engineering office. The leads and adaptors in engineering office should be reviewed and electrical appliances either removed or additional sockets installed.

PAT testing is carried out on a periodic basis. There were some items in the building management office which haven't been PAT tested since 2009 - 2013 and these should be checked to confirm they are safe to use.

Due to the time of year this assessment has been undertaken there are Christmas decorations including Christmas lights on display. On a sample the lights haven't been PAT tested. Ensure Christmas lights are PAT tested and sockets are not overloaded. The following recommendations are made:

- Check Christmas lights conform to the British Standard
- Decorations can burn easily. Make sure they are kept away from lights and heaters
- Switch off Christmas lights at the end of the day
- Don't overload sockets.

4.2 Smoking

Reasonable measures taken to prevent fires as a result of smoking?	☒ **Yes**		No
More specifically:			
Smoking prohibited on the premises?	☒ **Yes**		No
Smoking prohibited in appropriate areas?	☒ **N/A**	Yes	No
Suitable arrangements for those who wish to smoke?	☒ **Yes**		No
This policy appeared to be observed at time of inspection?	☒ **Yes**		No

Comments and Hazards Observed

The building operates a no smoking policy throughout and this appeared observed during the fire risk assessment.

4.3 Arson

Does basic security against arson by outsiders appear reasonable?[2]	☒ **Yes**		**No**
Is there an absence of unnecessary fire load in close proximity to the premises or available for ignition by outsiders?	☒ Yes		**No**

Comments and Hazards Observed

There is security on site 24/7 and there was no fire loading around the building.

[2] Reasonable only in the context of this fire risk assessment. If specific advice on security (including security against arson) is required, the advice of a security specialist should be obtained.

4.4 Portable Heaters and Heating Installations

Is the use of portable heaters avoided as far as practicable?			Yes	☒	**No**
If portable heaters are used:					
Is the use of the more hazardous type (e.g. radiant bar fires or lpg appliances) avoided?	N/A	☒	**Yes**		No
Are suitable measures taken to minimize the hazard of ignition of combustible materials?	**N/A**		**Yes**	☒	**No**
Are fixed heating installations subject to regular maintenance?	**N/A**		**Yes**	☒	**? No**

Comments and Hazards Observed

Addler and Allan test the oil tanks and Salisbury Engineers test the boilers. I was informed that there were no outstanding remedial actions.

I was informed that the boiler would shut off on 2nd knock of the fire alarm and automatic shut off switches are provided.

The floor in the basement around the fuel rooms has become coated with diesel which has soaked into the concrete over a substantial period of time. It is hard to predict the effect that this could have in a fire situation but it would be expected that over time vapor would be created from the heating up of floor. As there is an L1 fire alarm system and if the foam inlet is confirmed as operational then it is likely that the fire service will attend in the early stages and flood the fuel storage areas with foam eliminating this risk. It is important to ensure that the bund in fuel storage areas is fully intact and further leaks don't occur.

There is an oil tank in the 35th floor plant room. This appeared well maintained with no build up of vapour within the room.

The fuel store areas had suitable signage and spill kits nearby. There were granules on the floor moping up leaks from the tank. An override was fitted on the outside of the room.

There were a number of portable heaters in the building. Consideration should be given to replacing these with oil or water based systems to reduce the risk.

There were electric heaters in the rear offices on floor 35. I would recommend that these be removed if feasible and replaced with a water or oil based system.

Confirm that electric heaters in the building have been cleaned and serviced.

There are fixed electric heaters in the foyer area with no combustibles nearby. Confirmation is required that these are cleaned and maintained.

4.5 Cooking

Are reasonable measures taken to prevent fires as a result of cooking?	N/A	☒	Yes	**No**

More specifically:

Filters changed and ductwork cleaned regularly?	N/A	☒	Yes	**No**
Suitable extinguishing appliances available?	N/A	☒	**Yes**	No

Comments and Hazards Observed

The main kitchen in the building is located on the 1st floor. There is no fire separation between the kitchen and seating area but the restaurant area as a whole is separate from the rest of the building as a single compartment.

There is an office which is an inner room off the kitchen but this is generally left open and used infrequently. In addition there is detection in the access room which make this an acceptable risk.

The first floor is covered by a sprinkler system, which covers the kitchen area.

There is a wet chemical and Co2 extinguisher and a fire blanket provided which have been serviced within the last year.

The vents are cleaned weekly and a deep clean is done annually.

The kitchen is run on electricity only with no gas.

There is a small kitchen/tea point on all floors of the HMRC areas. These are low risk and contain microwaves, toasters and kettles.

4.6 Lightning

Do the premises have a lightning protection system?	N/A	☒	**Yes**	No

Comments and Hazards Observed

The building is provided with a lightning protection system, which is serviced periodically. I was informed the remedials had been completed which were identified on the last servicing report.

4.7 Housekeeping

Is the standard of housekeeping adequate?		Yes	☒	**No**
More specifically:				
Combustible materials appear to be separated from ignition sources?		Yes	☒	**No**
Avoidance of unnecessary accumulation of combustible materials or waste?		Yes	☒	**No**
Appropriate storage of hazardous materials?	N/A	Yes	☒	**No**
Avoidance of inappropriate storage of combustible materials?		Yes	☒	**No**

Comments and Hazards Observed

The housekeeping in the basement records store should be improved to reduce the chance of a small fire developing into a large fire.

There is a significant amount of storage in the 12th floor plant rooms. Other plant rooms are kept sterile. It is recommended that all combustible materials in the 12th floor plant room should be removed and plant rooms kept clear of combustibles.

The combustibles/paper next to the microwave and toaster in the engineering office kitchen should be removed and the area around kept clear.

There were combustibles in the fire pump room which should be removed.

4.8 Hazards Introduced by Outside Contractors and Building Works

Are fire safety conditions imposed on outside contractors?	N/A	☒	**Yes**	No
Is there satisfactory control over works carried out on the premises by outside contractors (including "hot work" permits)?	N/A	☒	**Yes**	No
If there are in-house maintenance personnel, are suitable precautions taken during "hot work", including use of "hot work" permits?	N/A	☒	**Yes**	No

Comments and Hazards Observed

All contractors are subject to a strictly enforced contractors procedure. No access can be gained in the building without going through security and then signing in with building management. Noland also have a separate permit to work system including hot works.

As part of the hot work permit security are responsible for doing a fire watch to ensure there are no residual embers or signs of fire.

Contractors will have a radio as lone workers and all have passes.

4.9 Dangerous Substances

Are the general fire precautions adequate to address the hazards associated with dangerous substances used or stored within the premises?	☒ N/A	**Yes**	No
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	Yes	**No**

Comments and Hazards Observed

There are no dangerous substances in the building. A COSHH assessment should be carried out to cover relevant substances.

4.10 Other Significant Fire Hazards That Warrant Consideration Including Process Hazards That Impact On General Fire Precautions

Comments and Hazards Observed

None. Any dangerous substances in tenanted areas should be covered by their risk assessment.

Summary of Hazards

None

4.11 Means of Escape from Fire

It is considered that the premises are provided with reasonable means of escape in case of fire		☒	Yes		**No**
More specifically:					
Adequate design of escape routes?		☒	Yes		**No**
Adequate provision of exits?		☒	**Yes**		No
Exits easily and immediately openable where necessary?			Yes	☒	**No**
Fire exits open in direction of escape where necessary?		☒	Yes		**No**
Avoidance of sliding or revolving doors as fire exits where necessary?	N/A	☒	**Yes**		No
Satisfactory means for securing exits?		☒	Yes		**No**
Reasonable distances of travel:	N/A	☒	Yes		**No**
Where there is a single direction of travel?	N/A	☒	Yes		**No**
Where there are alternative means of escape?	N/A	☒	Yes		**No**
Suitable protection of escape routes?	N/A	☒	Yes		**No**
Escape routes unobstructed?		☒	Yes		**No**
It is considered that the premises are provided with reasonable arrangements for means of escape for disabled people.	N/A	☒	**Yes**		No

Comments and Hazards Observed

There are 4 means of escape on all floors which lead into 4 separate stairwells. Each stairwell is lobbied and designed to provide at least 120-minute fire resistance between stairwell and floor. The 1st floor has an additional 2 escape stairs.

The West & East goods lifts have been converted into Evac/firefighting lifts. In the event of a building evacuation one goods lift will be used for evacuation and one would be kept

available for firefighter use. These lifts are contained within their own protected lobbies and the lobbies act of refuge areas for persons required to use the evac lift.

The lift lobby space is small and would accommodate 3 persons maximum per lobby. If there were more than 3 wheelchair uses per floor then it would be difficult to accommodate these additional persons. Therefore in order to ensure the safety of disabled persons regular and accurate records of Personal Emergency Evacuation Plans (PEEPS) should be carried out. The records in the building managers office identified 120 persons who require the use of a lift. PEEPs should be reviewed on a 3 monthly basis to help building management plan and prepare for evacuations.

The height of the ceiling in the stairs is in some areas less than 2 metres. This could lead to a delay in evacuation times but are clearly marked with a foam covering on the edges of walls. The occupancy numbers at start of this risk assessment made some reduction in occupancy numbers as a result of ceiling height.

There is some carpet in lift lobbies. Confirm that this has been treated with fire resistant treatment to achieve the required class protection. This should include the adhesive used. Whilst some carpet on some floors doesn't present a high risk it is advised to remove and have sterile lobbies and stairwells. Tenants should address the risk of carpeted areas in their risk assessment but it is important that this considers not only the material but also the adhesive used.

There are large draughts and pressure build-ups throughout the building which could have an impact on smoke spread. The recent improvements to fire doors and compartmentation will help better protect the means of escape.

The loading bay is occupied by a member of security. The loading bay is openable via a key which security have on them and there are 2 escape routes from the lobby area to the loafing bay which is deemed an acceptable risk.

Green override switches are provide on escape routes which are fitted with electro-magnetic hold devices.

The fire shutters that were in place on the first floor have been removed as they are not required. Fire shutters in basement are retained and serviced periodically.

The exit door to floor 19-west stairwell was stuck during this assessment. This has been logged and alternative escape routes were available within travel distance limits.

On the first floor there is a dead end corridor from room 1.22 of approximately 20 meters which is deemed satisfactory due to the area being covered by an L1 fire alarm, sprinklers and high ceiling.

Building Works and the impact on the means of escape.

The building was built in the late 1960s and opened in 1970. At this time most offices would not have been open plan. The current floor configuration for higher floors is open plan office space. Floors 1-19 doesn't appear to have changed much since the building was first designed although no plans were seen of the building on its first inception. Floors 20 + are generally open plan with no lift lobby protection. Therefore a fire on any of these floors could potentially spread into the lift shaft and travel through the building. With the draughts and pressures the smoke would then by spread into the open plan offices above with little to no smoke protection. The oldest plans I could see were from fire certificate drawings in 1996 and these had most of these higher floors with some form of lift lobby protection although some floors were open plan. With the building operating on two staged simultaneous evacuation as long as the numbers of disabled persons per floor is low then most people can reach safe areas within travel distance limits quite quickly. However if possible confirmation should be sought that the changes to these floors went through building control. Although the risk to life is low an argument could be made that the building has been altered and compartmentation worsened as the lifts provide no smoke protection and little fire protection that the risk to firefighters is increased. This includes the recent addition of a stair between the 33rd and 34th floor. Confirmation is required that building control has been notified and confirm compartmentation has not been made worse.

Accurate floor plans are essential for the fire service and should be retained at security with all building risk information.

Confirm the process in place for alterations in the building involves contacting a local building inspector or AI to comply with building regulations to reduce the chance of compartmentation becoming worsened in future.

I was informed that the doors from outside the podium will open on fire alarm activation therefore the window cleaners could escape once they have descended. A management procedure should be considered to contact window cleaners via radios to confirm doors have opened.

The fire doors in the basement are constantly wedged by cardboard and are not closed after being opened. The half leave at the side of the door and a half are always open and would not be adequate in a fire situation. A self closer should be put onto the half leave door and consider fitting hold open devices to allow the doors to be open but that are linked to the fire alarm so would close on activation of the fire alarm.

Some of this assessment was conducted after 17:00 when the cleaners start their shift. The cleaners put all the bags of rubbish into the lift lobbies and these block the means of escape for any persons working past 17:00 and make the refuge point unavailable which has a significant impact on the buildings fire strategy. No rubbish should be stored on means of escape and a new procedure discussed and implemented to prevent a reoccurrence.

4.12 Measure to Limit Fire Spread and Development

It is considered that there is:

Compartmentation of a reasonable standard[3]		☒	Yes	**No**
Reasonable limitation of linings that might promote fire spread [2,4]		☒	**Yes**	No
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	☒	Yes	**No**

Comments and Hazards Observed

The building has recently undergone a large compartmentation project which has improved the compartmentation throughout. A full survey has been carried out and breaches infilled with suitable fire stopping in line with the fire strategy requirements.

There are some areas which still require some improvements including the removal of foam and replacement with a suitable intumescing material. There are also some door which require intumescent strips and cold smoke seals added or replaced. These are to be completed as part of the project which should be finished before the end of December.

Good compartmentation is essential for a building of Euston Towers size and complexity and combined with an L1 voice fire alarm improves the safety to persons in the building. Regular checks of compartmentation should be carried out to ensure all compartmentation on completion of this project is maintained. A permit to work which involves any work on fire walls should be checked afterwards to make the fire stopping has been replaced to the same standard.

<u>Lifts, lift lobbies and compartmentation in building</u>

The lifts on the HMRC floors 1-19 (except 12th floor) are all provided with lift lobbies made up of fire doors which provide protection against the travel of smoke and fire through the central lifts.

[3] Based on visual inspection of readily accessible areas, with a degree of sampling where appropriate.

[4] A full investigation of the design of HVAC systems is outside the scope of this fire risk assessment.

There are no lift lobbies on most floors above floor 19. The lifts don't provide any smoke protection and a fire on any floor without the lobbies will potentially enter the lift shaft and spread throughout the building. Lift lobbies are recommended to stop the spread of fire and smoke but within the scope of this risk assessment is seen as a property protection feature as long as all other actions are completed. There is the potential that Local Authority fire safety officers could insist on their reinstatement to provide compartmentation between floors.

There are green override buttons to allow entry into the main offices if a fire alarm activated as people enter the lift lobby.

Fire Shutters

There are fire shutters provided to the basement doors. These were part of the original building design under Section 20 of the London Act and are being maintained to ensure compliance. A door with a large vent was recently replaced to restrict the movement of smoke through the basement and into the building.

A sprinkler system is installed in the lower floors which will provide some protection to reduce the spread of fire but this is only on the basement to 2nd floor.

Fire doors

Regular fire door checks should be carried out to ensure doors are closing fully and should have:

- Three hinges;
- Intumescent trips and cold smoke seals;
- Self closers;
- Pyro glazing (where applicable)
- No gaps should be excess of 4mm around the sides and 10mm at the base of the door;

The fire strategy shows which doors should be fire doors and each door should be fitted with a fire door keep shut sign.

There are a number of self closers in the building which need replaced as they are not able to fully close the fire doors. Regular maintenance checks will identify these doors and the self closers should be repaired or replaced.

The building is partially fitted with sprinklers to the basement, ground and first floor. Whilst it is recommended that sprinklers be provided throughout the cost is potentially prohibitive therefore it is essential that good compartmentation is maintained.

4.13 Emergency Escape Lighting

Reasonable standard of emergency escape lighting system provided?[5]	N/A	☒	Yes	**No**

Comments and Hazards Observed

The emergency lighting appeared of a reasonable standard and coverage through the premises.

[5] Based on visual inspection, but no test of illuminance levels or verification of full compliance with relevant British Standards carried out.

4.14 Fire Safety Signs and Notices

Reasonable standard of fire safety signs and notices? N/A Yes ☒ **No**

Comments and Hazards Observed

Overall the escape signage throughout the building was to a good standard however the following were noted and need actioned:

The signage on the 34th floor with no running man signage should either by replaced or supplemented with a running man. Some signage is also peeling away from the wall and needs replaced.

Additional escape directional signage should be provided throughout the plant room areas.

Running man escape signage required alongside existing signage in basement.

Signage in basement is peeling off the walls and needs replaced or reapplied.

Additional signage required on West Stairwell GF

Signage was peeling of the walls and should be refixed.

Do not use lift in event of fire signage should be provided to central core lifts.

4.15 Means of Giving Warning In Case of Fire

Reasonable manually operated electrical fire alarm system provided?[6]	N/A	☒	Yes	**No**
Automatic fire detection provided?	**Yes** (throughout premises)	☒	Yes (part of premises only)	No
Extent of automatic fire detection generally appropriate for the occupancy and fire risk?	N/A	☒	Yes	**No**
Remote transmission of alarm signals?	N/A	☒	Yes	**No**

Comments and Hazards Observed

The current fire alarm system is an L1 voice fire alarm system which was installed in 2012. Provision of an L1 fire alarm system is a significant enhancement to what would have been originally installed when the building was first built.

There is a VESDA system on the ground floor covering the room off the foyer.

There are a number of rooms in the plant rooms which are inner rooms. As the building has an L1 fire alarm system there is detection within the access rooms. There us a washroom on 34th floor and confirmation should be gained of the fire audibility if someone were to be using the shower or consider additional beacons for early warning.

Machinery in Boiler room had a sound level of 87dB. Confirm that fire alarm can be heard or beacons seen from this area.

The risers which contain only cables don't have any detection within them. However on the 14th floor there is a DB board so detection should be provided. No access was available so confirmation is required that a detector has been installed.

The detection in some risers is not mounted correctly. Wall mounted detectors should be sited such that the top of the detection element is between 150mm and 300mm below the ceiling, and the bottom of the detection element is above the level of the door opening. As the compartmentation in the risers was good and the doors are fitted with intumescent strip

[6] Based on visual inspection, but no audibility tests or verification of full compliance with relevant British Standard carried out.

and cold smoke seals this should not result in a delay to the fire alarm and is considered acceptable.

The detection in the basement is not at the highest point which could lead to a delay in detection of a fire.

There was a detector head covered in the fire pump room. The building management were aware of this issue and an action was in place to rectify issue. There was another detector nearby.

I was not able to confirm if there was void detection above ceilings. The ground floor ceiling void in places appeared above 800mm so confirmation should be sought that there is void detection.

The Fire Alarm panel was showing 3 faults. These should be investigated and repaired as soon as practicable. It is important that anytime a detector is at fault or becomes disabled the building management is informed so that can carry out a risk assessment to see if interim measures are required.

The redundant microphones in the GF stairwells and redundant systems in security should be removed.

4.16 Manual Fire Extinguishing Appliances

Reasonable provision of portable fire extinguishers?		N/A	☒	**Yes**		No
Hose reels provided?	☒	N/A		**Yes**		No
Are all fire extinguishing appliances readily accessible?		N/A		Yes	☒	**No**

Comments and Hazards Observed

There was good coverage of extinguishers throughout the building with CO2 and water extinguishers. The plant rooms mainly have a CO2 and powder extinguishers.

Some extinguishers in plant rooms were missing from their bracket. The extinguishers should be kept on brackets and reported if they are missing to be replaced.

Water extinguishers in plant rooms should be removed and replaced by Powder extinguishers.

Combination of Powder/Foam & CO2 extinguishers in basement.

Remove all extinguishers from electrical intake room except for CO2 extinguishers.

The foam extinguisher in the loading bay had not been serviced since 09/13. This should be serviced in line with other extinguisher extinguishers on an annual basis.

There was foam, water and co2 extinguishers next to S.E plant which is excessive but worth retaining for additional coverage for that floor.

Remove the water extinguisher next to the chiller room.

The extinguisher and bracket were missing from the wall outside R13.4 and should be found and reinstalled.

4.17 Relevant Automatic Fire Extinguishing Systems

Type of System

Boiler Room Suppression

Sprinkler System

Wet Riser

Comments and Hazards Observed

Boiler Room Suppression

There is a suppression system fitted in the boiler room which operates by a fusible link. There is an automatic activation switch for the suppression and there is also a handle which can be operated from the office area on floor 34. There is a shut off switch for the boiler room.

Sprinkler System

The sprinkler system covers parts of the basement, ground and first floor in the building but there is not 100% coverage. There is an external sprinkler tank room which is part of the Regents Place.

I wasn't able to find the hazard type for the sprinkler system but offices would normally be OH3. All the bulbs appeared red which would operate around 68C (155F).

Wet Riser

The straps to the wet risers are not suitably fixed as most can easily be removed. A review of all straps should be carried out and they should be secured to prevent people maliciously opening the risers. Signage should also be reviewed and a wet riser sign provided at all points.

4.18 Other Relevant Fixed Systems and Equipment

Type of System

Foam Inlet

Smoke vents

Suitable provision of fire-fighters switch(es) for high voltage luminous tube signs, etc. ☒ **N/A** Yes No

Comments and Hazards Observed

N/A

Summary of Hazards

Foam Inlet

There is a foam inlet on the ground floor which appears to cover the fuel storage areas in the basement. Confirmation should be sought that this is still fully functional, details on coverage with plans showing inlet/outlets and also arrangements made to ensure that regular serving is carried out and the fire service are aware of this facility and the location of fuel in basement.

Smoke Vents

There are smoke vents at the top of each stairwell for fire service use via the fireman's switch in reception.

There are hand operated smoke vents throughout the building which need maintained. These include smoke vents on each floor in both the east and west goods lobbies. There are a number of remedial actions outstanding for these but are in the process.

There are firefighter windows to remove smoke on all the upper floors and in plant rooms which should be opened and maintained on a regular basis and a record kept of the servicing.

There are smoke vents in basement. Some are open grill therefore smoke would naturally vent out of these and there are other breakable vents for the fire service including glass and solid slabs which can be broken to allow the escape of smoke. Some of these vents are within the Euston Tower demise itself including the glass basement vents above the BT Frame Room.

The snapshot is taken from the fire risk assessment carried out by Broadgate Estates on behalf of British Land to how they have deemed the smoke ventilation in the basement adequate.

FireCon™ Fire Risk Assessment

Topic Area	The Prevention of the Spread of Fire and Smoke.				
Item	**Smoke control/management systems.**				
No.	**Risk Level** / **Result**	**Responsibility**	**Control Description**	**Comments**	**Person in Danger**	**Image Ref**
	2 / A	Owner/Manager	Smoke ventilation systems are in place to control and manage the spread of smoke within the building.	Documented evidence provided during the documentation review confirmed that the Smoke ventilation and dual fan systems installed at the premises are subject to servicing as part of the Planned Preventative Maintenance regime, which is managed by Cofely.	Employees, Tenants, Contractors, Visitors, Public	
	2 / A	Owner/Manager	The covered car park has adequate mechanical ventilation	The basement car parking areas for example, have a mechanical extract system installed as appropriate. This is maintained by Cofely as part of the PPM programme.	Employees, Tenants, Contractors, Visitors, Public	
	2 / A	Owner/Manager	The covered car park has adequate natural ventilation	The car park has also been provided with natural ventilation which appeared to be suitable and sufficient.	Employees, Tenants, Contractors, Visitors, Public	

The smoke vent switches on the first floor to the smoke vents, which were sealed in collaboration with the fire service, should be blanked off to remove any confusion. The fire strategy confirms that they are not required.

4.19 Procedures and Arrangements

Fire Safety is managed by[7]:

Suzanne Floyd – Building (Facilities) Manager for Salisbury
HMRC – Pam Witter has just taken over with fire safety as part of her remit. The Incident Control Officer (ICO) in a fire situation would take control (HMRC only).
Tenant Floors – To be confirmed.
Security will take control of the evacuation in the event of a fire alarm.

Competent person(s) appointed to assist in undertaking the preventive and protective measures (i.e. relevant general fire precautions)? N/A ☒ Yes **No**

Comments

The tenant evacuation manual expects a minimum of 5/6 fire marshals per floor and a minimum of 1 fire leader per floor. It is recommended that a list be obtained from each floor to identify the numbers of fire marshals/leaders and training received and training arranged. As Euston Tower has protracted evacuation times owing to height and numbers of people it is essential that there is good management of the building evacuation with a key element being fire warden training. Training should include the use of extinguishers, as there is a requirement for some designated persons to receive extinguisher training.

There are some areas which are not occupied by permanent members of staff (1st & 2nd floor) and a procedure for checking these floors in an emergency should be discussed and agreed to ensure that all persons are accounted for.

Is there a suitable record of the fire safety arrangements? N/A ☒ Yes **No**

Comments

There is fire safety information contained within the following documents on site:

- Clients Handbook
- Contractor information Pack

[7] This is not intended to represent a legal interpretation of responsibility, but merely reflects the managerial arrangement in place at the time of this risk assessment.

- Tenant evacuation manual
- Fire Emergency Plan
- Crisis Management plan
- Fire Strategy (completed 2015)

These should be reviewed on a regular basis.

A fire strategy is in place for the building detailing the passive and active fire safety systems in the building and provides a holistic approach to a tall building which was built in the 1960s.

I recommend that an overarching fire policy should be in place for the company. I was informed that this is in the process of being produced.

The information below is taken from PAS 7 (Fire Risk Management System) and provides a guide on what is required:

Top management shall establish a fire safety policy that:

a) is appropriate to the purpose of the organization;

b) provides a framework for setting fire safety objectives;

c) includes a commitment to satisfy applicable requirements; and

d) includes a commitment to continual improvement of the Fire Risk Management System.

The fire safety policy shall:

a) be available as documented information;

b) be communicated and understood throughout the organization;

c) be available to interested parties, as appropriate.

The organization shall review the fire safety policy at planned intervals.

A person authorized by top management shall sign and authorize the fire safety policy.

Appropriate fire procedures in place? N/A ☒ Yes **No**

More specifically:

Are procedures in the event of fire appropriate and properly documented?	N/A	☒	Yes	**No**
Are there suitable arrangements for summoning the fire and rescue service?	N/A	☒	Yes	**No**
Remote transmission of alarm signals?	N/A	☒	Yes	**No**
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?	N/A	☒	Yes	**No**
Are there suitable arrangements for ensuring that the premises have been evacuated?	N/A	☒	Yes	**No**
Is there a suitable fire assembly point(s)?	N/A	☒	**Yes**	No
Are there adequate procedures for evacuation of any disabled people who are likely to be present?	**N/A**	☒	Yes	No

Comments

The building evacuation procedures are detailed within the tenant's evacuation manual and in the emergency response plan.

The building operates a two-staged simultaneous evacuation procedure (as shown in figure below), which reduces the impact of false alarms whilst ensuring that the building is evacuated on a double knock.

12.3 Total evacuation

12.3.1 Simultaneous evacuation

NOTE Recommendations for widths of escape stairs for simultaneous evacuation are given in 18.4.2.

Simultaneous evacuation is a common approach adopted in premises where it would be unreasonable to expect the occupants to remain in an affected area for a prolonged time when there is a fire. This takes into account not only the physical effects of the fire, but the psychological response of occupants confronted by an outbreak of fire.

There are two categories of simultaneous evacuation.

a) *Single-staged evacuation*
In a single-staged evacuation, the activation of a call point or detector gives an instantaneous warning from all fire alarm sounders for an immediate evacuation.

b) *Two-staged evacuation*
In a two-staged evacuation, there is an investigation period (or grace period) before the fire alarm sounders are activated. A typical sequence of events for two-staged evacuation is as follows.

1) Initially a coded staff alert is given.
2) There is then an investigation period (or grace period).
3) The evacuation signal is broadcast:
   - if a fire is confirmed; or
   - if an agreed investigation period lapses without the alarm being cancelled; or
   - if a second detector is activated, "break glass" operated or sprinkler flow switch operated during the investigation period.

This is detailed in full including the buildings cause and effect in the tenant evacuation manual. There is a 10-minute delay in the event of a single knock. The use of two-staged simultaneous evacuation and a 10-minute investigation period is identified as being appropriate for the risk in the building and the building compartmentation and fire alarm. The building has an L1 fire alarm system and 90-120 minutes fire resistance to lobbies and stairs and therefore this evacuation procedure is identified as adequate from a risk assessment perspective taking into account the following:

- Occupancy Numbers in building
- Age of building
- Design of building
- Fire Alarm system (Voice Alarm)

As previously stated the building when designed was probably designed on simultaneous evacuation. Buildings designed today and over the last 20 years would be designed as phased evacuation to reduce disruption to occupants for false alarms and also allows for larger numbers of people with smaller stairwells. Buildings that adopt phased evacuation are fitted with sprinkler systems, good compartmentation and smoke control throughout the

building. As the building only has sprinkler control in parts of the basement, ground and first floor then I would recommend that phased evacuation is not used.

As the building has a voice alarm installed this provides an additional benefit in an evacuation. The effectiveness of the AFD will be greatly enhanced as the alarm signal is given through a voice alarm system. A research project undertaken by the Building Research Establishment (BRE) proved the effectiveness of this measure in comparison to the traditional bell alarm. This looked at the percentage of people who instantly responded to different types of alarm signals. The results are shown below:

Type of Alarm Signal	Percentage of Immediate Response
Alarm Bells	13%
Text Messages	45-55%
Voice Alarms	70%

The fire alarm on second knock will notify London Fire & Rescue Service. A fire station is located approximately 800 metres away and response times historically have been quite quick.

On arrival the fire service would proceed to the security control. Security control has recently undergone improvements in compartmentation to ensure its full functionality in a fire situation for a minimum of 90 minutes. Fire boarding and cavity barriers are in place to provide a protected compartment. The fire panel and fire service information is provided within the security control.

Fire Marshals sweep the floor to ensure they have been evacuated and report to the fire leader who will inform security who will manage the evacuation. Although some training has been provided all persons as identified as fire marshals (5/6 per floor) should receive annual training.

A review of all fire service information should be required and risk information compiled using the template provided in this reports appendix and the information contained in the fire strategy.

The primary assembly point is situated at Munster Square. There is an out of hours (19:00-07:00) assembly point at the east point of the building and if required alternative assembly

points at Cumberland Market and Regents Park. A mobility impaired assembly point is located in the Plaza.

All mobility impaired persons receive a Personal Emergency Evacuation Plan (PEEP) and these should be sent to the building management team to help them plan and prepare for evacuations. These should be carried out on a quarterly basis and there are currently approximately 120 PEEPs for the building.

Evacuation Times

The building through carrying out full evacuations during fire drills takes between 30 minutes and 60 minutes to fully evacuate (Required Safe Escape Time). There is 120 minutes fire resistance provided to the stairwell so the times for full evacuation are well within the limits of building design (Available Safe Escape Time). Therefore based on ASET/RSET (Diagram below) evacuation times are well within the margin of safety.

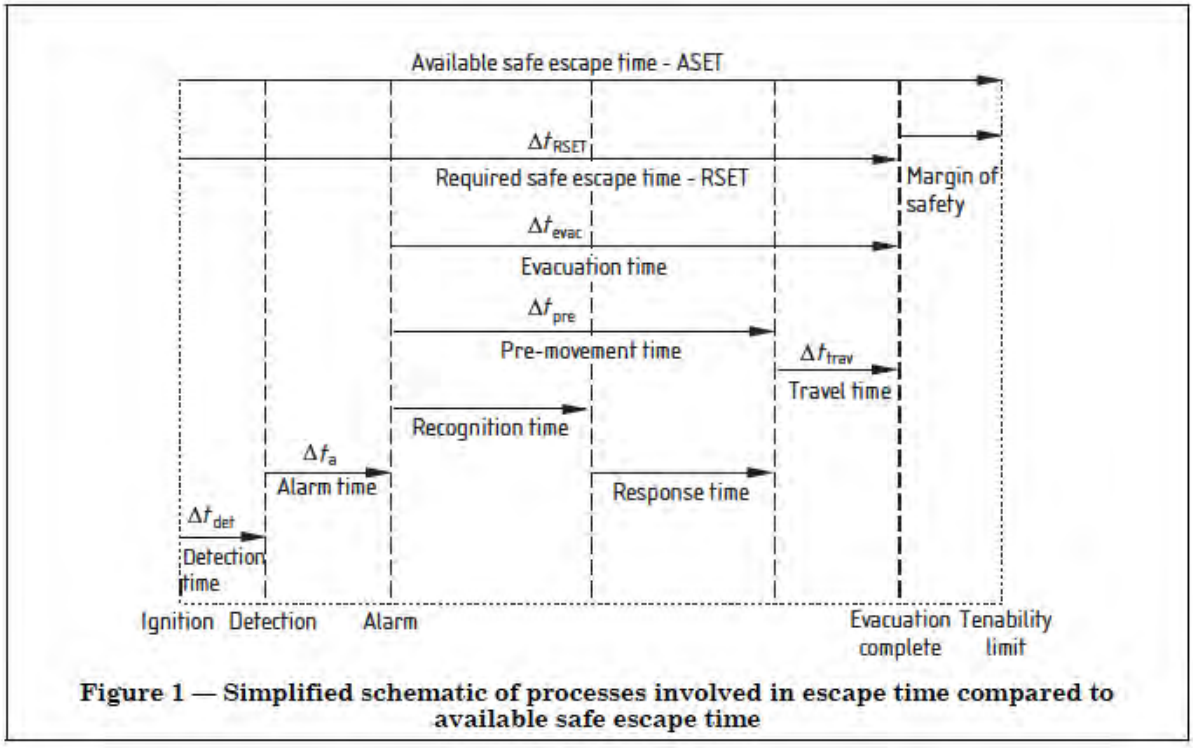


Figure 1 — Simplified schematic of processes involved in escape time compared to available safe escape time

Evacuation of disabled persons

The evacuation lifts are lobbied so perform the function of a disabled refuge in the event of a full evacuation. The lobby is relatively small and will accommodate approximately 3 persons in wheelchairs. Communication is therefore essential to ensure those on fire floor

are evacuated first as other floors where there is no fire can spill into main office near lobby if there are more than 3 persons who require escape via Evac lift.

Persons nominated and trained to use fire extinguishing appliances?	N/A	Yes	☒ **No**

Comments

Nominated persons from all floors should receive some fire safety training including the use of extinguishers. I would recommend training fire marshals in the use of fire extinguishers and training should be carried out annually. Training persons in the use of fire extinguishers will potentially reduce the impact of a fire by preventing a small fire developing into a large fire.

Persons nominated and trained to assist with evacuation, including evacuation of disabled people?	N/A	Yes	☒ **No**

Comments

Each floor should have nominated fire marshals to assist in the evacuation procedure including the movement of disabled persons to a refuge (evac lift lobby).

Appropriate liaison with fire and rescue service (e.g. by fire and rescue service crews visiting for familiarization visits)?	N/A	Yes	☒ **No**

Comments

There are some fire alarm drawings and some information provided at security for the fire service however this needs to be reviewed. There are also plans in east and west stairwells which need updated. A review of all documentation and additional information should be provided to ensure that the fire service have all relevant information to keep them safe and reduce the chance of any delay in firefighting. Information that should be made available at security should include the following:

- Accurate plans of each floor;

- Wet riser keys;
- Information on hazards in the building including location of fuel stores, cylinders etc;
- Accurate plans showing fire fighting features including location of foam inlet and smoke vents;
- Information on location of isolation switches for water, electricity, fuel etc;
- Location of some vents and sprinkler controls;
- Information and keys for sprinkler areas;
- Keys for access to risers, lifts etc.

Some of the above information can be obtained from the buildings fire strategy.

Need to update London Fire Brigade plans in Ground Floor stairwells

Routine in-house inspections of fire precautions (e.g. in the course of health and safety inspections)? N/A ☒ **Yes** No

Comments

There are annual audits which are carried out which includes checking:

- Fire alarm
- Emergency lighting
- Lightning Protection
- Extinguishers
- Fixed Electrical & PAT.

There are routine inspections twice a year and a monthly cleaning audit of 2 floors.

4.20 Training and Drills

Are all staff given adequate fire safety instruction and training on induction? N/A Yes ☒ **No**

Comments

Induction training is provided to all staff. All staff on all floors should be familiar with the tenant evacuation manual and receive building familarisation.

Are all staff given adequate periodic "refresher training" at suitable intervals?	N/A	Yes	☒	**No**

Comments

Regular refresher training should be provided to all persons. All relevant persons including Salisbury FM, Security and HMRC should receive training on a periodic basis. I recommend that basic training should be provided every 3 years and those persons with designated duties in evacuation procedure should receive annual training. Some fire marshals have received training but further training is required.

Does all staff training provide information, instruction or training on the following:

Fire risks in the premises?	N/A	☒	Yes	**No**
The fire safety measures on the premises?	N/A	☒	Yes	**No**
Action in the event of fire?	N/A	☒	Yes	**No**
Action on hearing the fire alarm signal?	N/A	☒	Yes	**No**
Method of operation of manual call points?	N/A	☒	Yes	**No**
Location and use of fire extinguishers?	N/A	☒	Yes	**No**
Means for summoning the fire and rescue service?	N/A	☒	Yes	**No**
Identity of persons nominated to assist with evacuation?	N/A	☒	Yes	**No**
Identity of persons nominated to use fire extinguishing appliances?	N/A	☒	Yes	**No**

Comments

As above.

Are staff with special responsibilities (e.g. fire wardens) given additional training? **N/A** ☒ Yes No

Comments

The tenant evacuation manual expects a minimum of 5/6 fire marshals per floor and a minimum of 1 fire leader per floor. It is recommended that a list be obtained from each floor to identify the numbers of fire marshals/leaders and training received and training arranged. As Euston Tower has protracted evacuation times owing to height and numbers of people it is essential that there is good management of the building evacuation with a key element being fire warden training. Training should include the use of extinguishers, as there is a requirement for some designated persons to receive extinguisher training.

Security staff receive training on evacuation procedures as they are key to the evacuation process. I was informed that training was provided last week.

Are fire drills carried out at appropriate intervals? **N/A** ☒ Yes No

Comments

Building management organize 2 drills a year. The last drill was carried out on 20/10/15 and a full evacuation lasted 35 minutes. It is important that a debrief is carried out as part of the drill and recorded. These records were seen to confirm this is happening.

All false alarms are recorded and debriefed.

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 ☒ **Yes** No
- Is it ensured that the employees are provided with adequate instructions and information? N/A ☒ **Yes** No

Comments

There is a good induction procedure for contractors.

4.21 Testing and Maintenance

Adequate maintenance of premises? N/A Yes ☒ **No**

Comments

There are some fire safety systems which are not getting tested as detailed below.

Weekly testing and periodic servicing of fire detection and alarm system? N/A ☒ Yes **No**

Comments

The fire alarm is being tested at 14:00 on a Wednesday to ensure all persons are familiar with the voice alarm, can check the audibility and ensure door release on fire alarm activation. A longer test is carried out on a Saturday at 14:00 for Engineering to test a number of floors and record the test outcomes. The result is recorded on a log sheet and there is a good history that also identifies issued which have subsequently been rectified.

The VESDA system was last serviced by FCF on 20/05/15. Confirm that any remedials from this test were rectified.

I was informed that the fire alarm has received periodic testing. Some records indicate this was carried out in August but the paperwork was unclear that the building had been fully checked. Confirm that a 100% check has been carried out within the last 6 months and that if there are variations on the report then these have subsequently been rechecked so that there are no gaps in the servicing.

Monthly and annual testing routines for emergency escape lighting? N/A ☒ Yes **No**

Comments

The emergency lighting was last inspected on 13/02/15 by EPT and I was informed all remedials were completed. Emergency lighting receives testing monthly, 6 monthly and 12 monthly and these are recorded as PPMs.

Annual maintenance of fire extinguishing appliances? N/A ☒ Yes **No**

Comments

Overall the maintenance of fire extinguishers is good with the servicing of extinguishers last carried out by Tyco 19/06/15. I would recommend local monthly checks are carried out to ensure extinguishers are in the correct position and not damaged. This could be included as part of the fire warden checks.

Periodic inspection of external escape staircases and gangways? ☒ **N/A** Yes No

Comments

There are no external gangways or staircases.

Six-monthly inspection and annual testing of rising mains? **N/A** ☒ Yes No

Comments

The Wet Riser has been tested and inspected including the fire pump. The fire pump was tested on 26/08/15. Confirm there are no outstanding remedial actions outstanding. UK Dry risers carried out maintenance of the wet risers 11/08/15.

Weekly testing and periodic inspection of sprinkler installations? N/A ☒ Yes **No**

Comments

The weekly sprinkler tests are carried out by on site engineers on a Saturday at 14:00 with the fire alarm test. The last sprinkler system maintenance was carried out by FCF plc on 21/10/15. Confirmation is required that all remedial works from recent maintenance checks have been actioned.

Routine checks of final exit doors and/or security fastenings? N/A ☒ Yes **No**

Comments

Security carry out regular checks of final exits and escape routes and security fastenings are checked at the same time as weekly fire alarm test by fire wardens and any defects should be reported.

Annual inspection and test of lightning protection system? N/A ☒ **Yes** No

Comments

The lightning protection was inspection by Penrich on 27/11/14 and there were 2 remedial actions. Confirmation is required these actions have been completed.

Are suitable systems in place for reporting and subsequent restoration of safety measures that have fallen below standard? N/A ☒ Yes **No**

Comments

[redacted]

Other relevant inspections or tests: N/A Yes ☒ **No**

Comments

The Pyrene foam tank suppression in boiler room on 34th floor does not appear to have been tested since 27/05/12 when it was tested by Fire Check Contracts Ltd. Tyco have been asked to look into the maintenance and confirmation is required that this has been completed and a PPM created to provide on going maintenance of the system.

Confirmation is required as to the current condition of the foam inlet and this should be inspected on a regular basis. The foam inlet is accessible from the ground floor (External good lift) and appears to cover the basement fuel areas. Tyco have been asked to look into the maintenance and confirmation is required that this has been completed and a PPM created to provide on going maintenance of the system.

There are approx. 700 fire dampers in the building. A recent report identified remedial action on approx. 60 dampers. These actions should be completed and confirmation required that a PPM is in place for annual serving of all fire dampers.

The vents at the top of each stairwell have recently been serviced by Colt and the service sheet identified these as being satisfactory. The service sheet had no date on so confirmation of the exact date for this assessment couldn't be provided. The testing had been confirmed by more than one source.

The manual smoke vents in the lift lobbies should be subject to periodic testing. There are some outstanding remedials which need to be completed and confirmation is required that a PPM is in place for periodic serving of manual smoke vents.

There are a number of doors which are not closing fully. Confirmation is required that a PPM is in place for periodic inspections of fire doors in the building.

Salisbury Engineers last serviced the gas on 16/03/15.

Fire shutters in the basement have been recently inspected but no records were seen. This was confirmed by engineering supervisor. Confirmation is required that a PPM is in place for the servicing of fire shutters in the basement.

I was informed that the back up generator that serves the lifts had been serviced but no records were seen to verify.

4.22 Records

Appropriate records of:

Fire drills?	N/A	Yes ☒	No
Fire training?	N/A	Yes ☒	**No**
Fire alarm tests?	N/A	Yes ☒	**No**
Emergency escape lighting tests?	N/A	**Yes** ☒	No
Maintenance and testing of other fire protection systems?	N/A	Yes ☒	**No**

Comments

There are 2 drills a year carried out and records are kept in the fire manuals in the building management office.

Some fire marshal training has been provided to HMRC, Atkins and Tom Tom and certificates were provided and are there verified.

The weekly fire alarm log sheet is kept in the fire files in building management office.

Track record is used for PPM and keep track of maintenance and records. The section above details further information required with regards to fire protection maintenance.

5. Risk Level Estimator

FIRE RISK ASSESSMENT

The following simple fire risk level estimator is based on a commonly used health and safety risk level estimator.

Likelihood of fire	Potential consequences of fire		
	Slight harm	**Moderate harm**	**Extreme harm**
Low	Trivial risk	Tolerable risk	Moderate risk
Medium	Tolerable risk	Moderate risk	Substantial risk
High	Moderate risk	Substantial risk	Intolerable risk

Taking into account the fire prevention measures observed at the time of this risk assessment, it is considered that the hazard from fire (likelihood of fire) at these premises is:

[ ] Low [X] Medium [ ] High

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

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

Medium 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).

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

Taking into account the nature of the premises and the occupants, as well as the fire protection and procedural arrangements observed at the time of this fire risk assessment, it is considered that the consequences for life safety in the event of fire would be:

[ ] Slight harm [X] Moderate harm [ ] Extreme harm

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

Slight harm 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 harm 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 harm Significant potential for serious injury or death of one or more occupants.

Accordingly, it is considered that the risk to life from fire at these premises is:

☐	Trivial	☐	Tolerable	☒	Moderate	☐	Substantial	☐	Intolerable

Comments:

The reason for a **Moderate** risk to life. This is based on good management in the building with the provision of an L1 fire alarm system and good compartmentation. The risk is still classed as moderate and there are still a number of actions but for a building of this age and height this is quite normal and constant review of fire safety precautions will ensure the risk level remains at a moderate level.

A suitable risk-based control plan should involve effort and urgency that is proportional to risk. The following risk-based control plan is based on one that has been advocated for general health and safety risks:

Risk level	Action and timescale
Trivial	No action is required and no detailed records need be kept.
Tolerable	No major additional fire precautions required. However, there might be a need for reasonably practicable improvements that involve minor or limited cost.
Moderate	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	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	Premises (or relevant area) should not be occupied until the risk is reduced.

(Note that, although the purpose of this section is to place the fire risk in context, the above approach to fire risk assessment is subjective and for guidance only. All hazards and deficiencies identified in this report should be addressed by implementing all recommendations contained in the action plan. The fire risk assessment should be reviewed regularly.)

6. Action Plan

ACTION PLAN

It is considered that the following recommendations should be implemented in order to reduce fire risk to, or maintain it at, the following level:

	Trivial	X	Tolerable

Definition of priorities (where applicable):

The priorities from the action plan are to provide a long term solution for the basement electrics and this should be addressed within the next couple of months and improvements to the cleaners routine to ensure the means of escape are maintained at all times. Confirmation is also important that all areas of maintenance highlighted in this report are on Track Record as planned maintenance.

Action Plan

Priority – Life

High - The identified deficiency should be prioritized and completed as soon as possible.

Medium – Every effort should be taken to complete actions once high risk actions have been completed. Where difficult to achieve consideration should be given to programming improvements works when other works are carried out. Ideally complete within 12 months.

Low – If low cost then carry out. Where cost would be prohibitive then carry out action in

collaboration with other works. No timescale to improvement works if High & Medium are completed.

Property

Advice on property protection will be provided in the main body of the report.

Number	Hazard	Priority
1	The 5 year fixed wiring test carried out on 14th July 2015 showed a few remedials which are outstanding. These are on track record and in progress. Close action down when complete.	Medium
2	In the basement electrical room there has previously been some water ingress but an interim measure is in place to contain and divert any potential water into this area. A long term solution is proposed for Feb/March on the LV which will allow the action to be closed down.	Medium
3	There was daisy chaining of extension leads in the engineering office. The leads and adaptors in engineering office should be reviewed and electrical appliances either removed or additional sockets installed.	Medium
4	PAT testing is carried out on a periodic basis. There were some items in the building management office which haven't been PAT tested since 2009 -2013 and these should be checked to confirm they are safe to use.	Low
5	Due to the time of year this assessment has been undertaken there are Christmas decorations including Christmas lights on display. On a sample the lights haven't been PAT tested. Ensure Christmas lights are PAT tested and sockets are not overloaded. The following recommendations are made:	Low
	• Check Christmas lights conform to the British Standard	

	• Decorations can burn easily. Make sure they are kept away from lights and heaters • Switch off Christmas lights at the end of the day • Don't overload sockets.	
6	Confirmation is required that electrical heaters are cleaned and maintained.	Low
7	There were a number of portable heaters in the building. Consideration should be given to replacing these with oil or water based systems to reduce the risk.	Low
8	The housekeeping in the basement records store should be improved to reduce the chance of a small fire developing into a large fire.	Medium
9	There is a significant amount of storage in the 12th floor plant rooms. Other plant rooms are kept sterile. It is recommended that all combustible materials in the 12th floor plant room should be removed and plant rooms kept clear of combustibles. Furniture with torn fabric in plant room should be repaired or replaced.	Medium
10	The combustibles/paper next to the microwave and toaster in the engineering office kitchen should be removed and the area around kept clear.	Medium
11	There were combustibles in the fire pump room which should be removed.	Medium
12	Some of this assessment was conducted after 17:00 when the cleaners start their shift. The cleaners put all the bags of rubbish into the lift lobbies and these block the means of escape for any persons working past 17:00 and make the refuge point unavailable which has a significant impact on the buildings fire strategy. No rubbish should be stored on means of escape and a new procedure discussed and implemented to prevent a reoccurrence.	High
13	The fire doors in the basement are constantly wedged by cardboard and are not closed after being opened. The half leaf at the side of the basement door are always open and would not be adequate in a fire situation. A self closer should be put onto the half leaf door and consider fitting hold open devices to allow the doors to be open but that are linked to the fire alarm so would close on activation of the fire alarm.	Medium

14	There are a number of self closers in the building which need replaced as they are not able to fully close the fire doors. Regular maintenance checks will identify these doors and the self closers should be repaired or replaced.	Medium
15	The signage on the 34th floor with no running man signage should either by replaced or supplemented with a running man. Some signage is also peeling away from the wall and needs replaced.	Medium
16	Additional escape directional signage should be provided throughout the plant room areas.	Medium
17	Running man escape signage required alongside existing signage in basement.	Medium
18	Signage in basement is peeling off the walls and needs replaced or reapplied.	Low
19	Additional signage required on West Stairwell GF	Medium
20	Do not use lift in event of fire signage should be provided to central core lifts.	Low
21	Signage was peeling of the walls and should be refixed.	Low
22	There is a wash room on 34th floor and confirmation is required of the fire audibility if someone were to be using the shower or consider additional beacons for early warning.	Medium
23	Machinery in Boiler room had a sound level of 87dB. Confirm that fire alarm can be heard or beacons seen from this area.	Medium
24	The risers which contain only cables don't have any detection within them. However on the 14th floor there is a DB board so detection should be provided. No access was available so confirmation is required that a detector has been installed.	Medium
25	The detection in the basement is not at the highest point which could lead to a delay in detection of a fire.	Medium
26	I was not able to confirm if there was void detection above ceilings. The ground floor ceiling void in places appeared above 800mm so confirmation should be sought that there is void detection.	Medium

27	The Fire Alarm panel was showing 3 faults. These should be investigated and repaired as soon as practicable. It is important that anytime a detector is at fault or becomes disabled the building management is informed so that can carry out a risk assessment to see if interim measures are required.	Medium
28	The redundant microphones in the GF stairwells and redundant systems in security should be removed.	Low
29	Some extinguishers in plant rooms were missing from their bracket. The extinguishers should be kept on brackets and reported if they are missing to be replaced.	Low
30	Water extinguishers in plant rooms should be removed and replaced by Powder extinguishers.	Medium
31	Remove all extinguishers from electrical intake room except for CO2 extinguishers.	Medium
32	Remove the water extinguisher next to the chiller room.	Medium
33	The extinguisher and bracket were missing from the wall outside R13.4 and should be found and reinstalled.	Medium
34	The straps to the wet risers are not suitably fixed as most can easily be removed. A review of all straps should be carried out and they should be secured to prevent people maliciously opening the risers. Signage should also be reviewed and a wet riser sign provided at all points.	Medium
35	There is a foam inlet on the ground floor which appears to cover the fuel storage areas in the basement. Confirmation should be sought that this is still fully functional, details on coverage with plans showing inlet/outlets and also arrangements made to ensure that regular serving is carried out and the fire service are aware of this facility and the location of fuel in basement.	Medium
36	There are hand operated smoke vents throughout the building which need maintained. These include smoke vents on each floor in both the east and west goods lobbies. There are a number of remedial actions outstanding for these but are in the process.	Medium

37	The smoke vent switches on the first floor to the smoke vents, which were sealed in collaboration with the fire service, should be blanked off to remove any confusion. The fire strategy confirms that they are not required.	Low
38	The tenant evacuation manual expects a minimum of 5/6 fire marshals per floor and a minimum of 1 fire leader per floor. It is recommended that a list be obtained from each floor to identify the numbers of fire marshals/leaders and training received and training arranged. As Euston Tower has protracted evacuation times owing to height and numbers of people it is essential that there is good management of the building evacuation with a key element being fire warden training. Training should include the use of extinguishers, as there is a requirement for some designated persons to receive extinguisher training.	Medium
39	There are some areas which are not occupied by permanent members of staff (1st & 2nd floor) and a procedure for checking these floors in an emergency should be discussed and agreed to ensure that all persons are accounted for.	Medium
40	I recommend that an overarching fire policy should be in place for the company. I was informed that this is in the process of being produced.	Low
41	A review of all fire service information should be required and risk information compiled using the template provided in this reports appendix and the information contained in the fire strategy.	Medium
42	Need to update LFB plans in Ground Floor stairwells	Medium
43	I was informed that the fire alarm has received periodic testing. Some records indicate this was carried out in August but the paperwork was unclear that the building had been fully checked. Confirm that a 100% check has been carried out within the last 6 months and that if there are variations on the report then these have subsequently been rechecked so that there are no gaps in the servicing.	Medium

44	Overall the maintenance of fire extinguishers is good with the servicing of extinguishers last carried out by Tyco 19/06/15. I would recommend local monthly checks are carried out to ensure extinguishers are in the correct position and not damaged. This could be included as part of the fire warden checks.	Medium
45	The last sprinkler system maintenance was carried out by FCF plc on 21/10/15. Confirmation is required that all remedial works from recent maintenance checks have been actioned.	Medium
46	The lightning protection was inspection by Penrich on 27/11/14 and there were 2 remedial actions. Confirmation is required these actions have been completed.	Medium
47	The Pyrene foam tank suppression in boiler room on 34th floor does not appear to have been tested since 27/05/12 when it was tested by Fire Check Contracts Ltd. Tyco have been asked to look into the maintenance and confirmation is required that this has been completed and a PPM created to provide on going maintenance of the system.	Medium
48	Confirmation is required as to the current condition of the foam inlet and this should be inspected on a regular basis. The foam inlet is accessible from the ground floor (External good lift) and appears to cover the basement fuel areas. Tyco have been asked to look into the maintenance and confirmation is required that this has been completed and a PPM created to provide on going maintenance of the system.	Medium
49	There are approx. 700 fire dampers in the building. A recent report identified remedial action on approx. 60 dampers. These actions should be completed and confirmation required that a PPM is in place for annual serving of all fire dampers.	Medium
50	The manual smoke vents in the lift lobbies should be subject to periodic testing. There are some outstanding remedials which need to be completed and confirmation is required that a PPM is in place for periodic serving of manual smoke vents.	Medium

51	There are a number of doors which are not closing fully. Confirmation is required that a PPM is in place for periodic inspections of fire doors in the building.	Medium
52	Fire shutters in the basement have been recently inspected but no records were seen. This was confirmed by engineering supervisor. Confirmation is required that a PPM is in place for the servicing of fire shutters in the basement.	Medium

7. Conclusion

The standard of fire safety in the building is good and due to the size and complexities of the building it is vital to continue to monitor fire safety in the building to ensure the risk remains the same. The provision of an L1 voice fire alarm significantly enhances safety alongside good compartmentation protection to the stairwells.

Training and good management is essential to maintain and improve on current standards and steps should be taken to ensure all floors have sufficient numbers of fire marshals and that they have received the appropriate training.

8. Risk Management

Current fire safety legislation and guidance is based on risk and focuses on individual premises and facilities. It is less specific about managing this risk from fire at an organizational level. In many cases, the person(s) with duties under legislation might be part of a larger organization with multiple sites and facilities with common working practices and procedures. This can present challenges with regard to translating fire safety policy into effective strategies throughout the organization, where fire safety is unlikely to be the key driver.

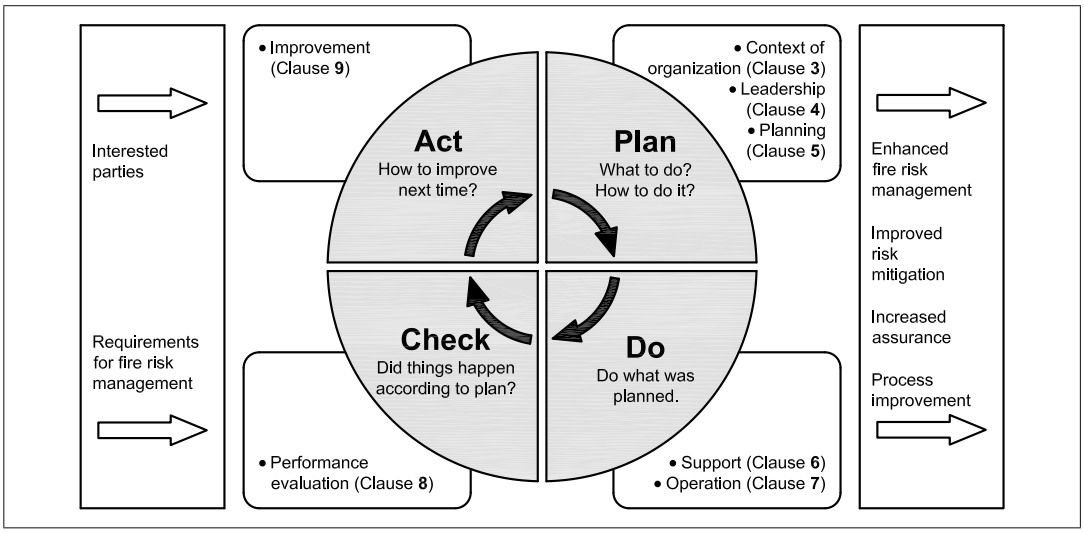
A documented FRMS provides a means of demonstrating that fire safety policy is translated into action to ensure that the fire risk to people and the business are reduced as far as reasonably practicable while ensuring that the legislative requirements are met. The extent of the management system should be proportionate to the level of risk arising from the organization's activities and subsequent level of assurance sought. It should be noted that an organization's risk tolerance (that is its readiness to bear risk, after risk treatment, in order to achieve its objectives) can be limited by legal or regulatory requirements.

[redacted] produce a fire risk management system plan with a clear fire safety policy and the information. There are a number of documents that can help in the production of this plan. The information in the methodology section of this document on BS 9999 Management provides some information and documents like PAS 7:2013 Fire risk management system are useful to provide a framework to develop the plan.

PAS 7 applies the “plan, do, check, act” (PDCA) model to implementing, maintaining and improving an FRMS. The basis of the approach is shown in Figure 1 below, which sets out the requirements of the FRMS in the context of the PDCA model, and is also briefly described as follows:

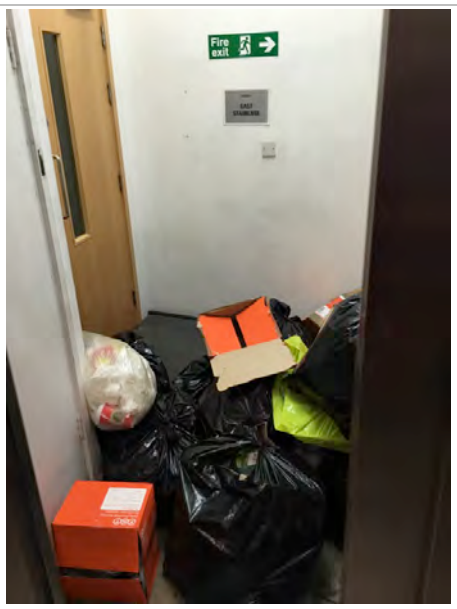
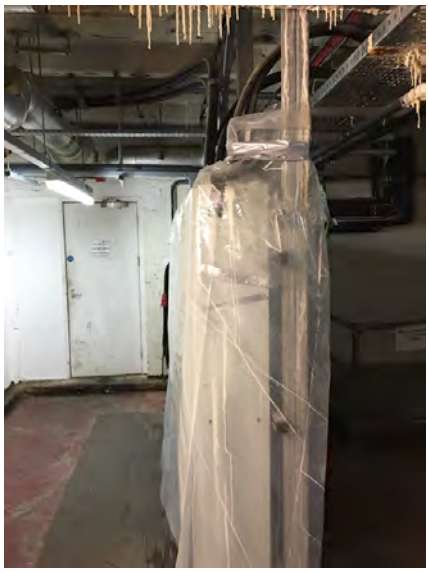
Plan: establish the objectives and processes necessary to deliver results in accordance with the organization’s fire policy.
Do: implement the processes.
Check: monitor and measure processes against fire policy, strategic objectives, legal and other requirements, and report the results.
Act: take actions to improve fire risk management performance continually.

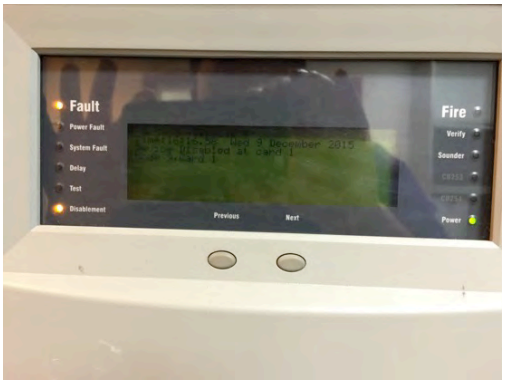
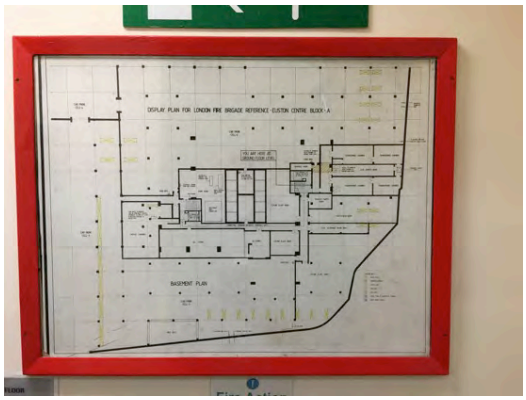
Figure 1 **Fire risk management “plan, do, check, act” model**

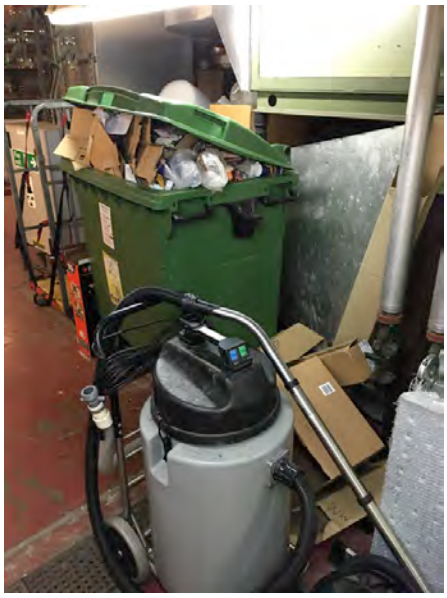


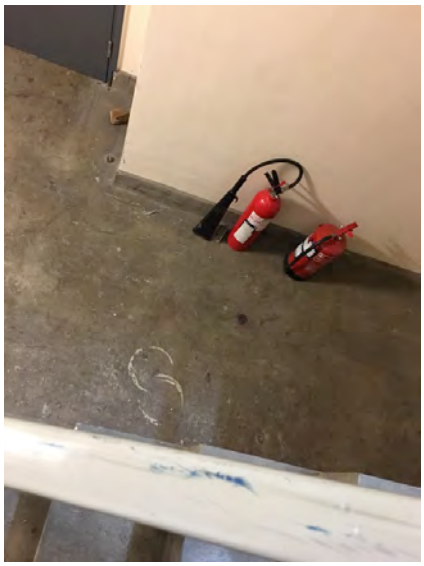
[redacted].

9. Photos

	
Escape door not opening. Defect had been submitted and alternative escapes were available.	Rubbish blocking means of escape.
	
Some water ingress into electrics.	Extinguisher should be fixed on a bracket.

	
Rubbish blocking means of escape	3 faults on the fire panel
	
Some signage is peeling away and should be repaired or replaced.	LFB plan should be updated.

	
Furniture with torn fabric should be repaired or replaced.	Combustibles in plant room.
	
A self closer should be added to half leaf of door.	Consider fitting hold open devices to prevent doors in basement being wedged.

	
Fit extinguishers to brackets.	Christmas lights should be PAT tested and decorations should be kept away from lights

	
Straps need installed correctly	Some doors not closing fully due to faulty self closers

10. Fire Service Information: Site Specific Risk Information (SSRI) Template

Fire Services gather information called site specific risk information for key buildings such as Euston Tower. The purpose of this document is to understand the risks, building layout and identify keys passive and active fire systems which will allow the fire service to make informed decisions to safeguard their safety. This link below is to a document, which Fire Services use to obtain information for buildings.

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/5914/2124406.pdf

The information below is information that the fire service would require if they attended the site. I have provided a simplified format and would strongly recommend using this and inviting the fire service to attend the building to familarise themselves with the building.

The sheet below includes examples of information required in *italics.* Note these are examples and shouldn't be taken as correct information.

SSRI Example

Contact Name	Chris Stone
Telephone Number	07850 938057
Evacuation Type	Simultaneous
Hazards (Location)	Small quantities of flammables
Information Box (Location)	Held at Gatehouse with all fire service information. To be provided by security
Site Access	Different points of access. Security to confirm access points for fire service. As default head to main gatehouse.
Gas Isolation Location	At front of building
Water Isolation Location	At rear of building
Electricity Isolation Location	At side of buildings
Environmental Considerations	None

CONSTRUCTION

Location	
Building Length	52 metres
Building Width	40 metres
Floors	3 – GF, FF & Plant
Basements	None
Construction Type (Steel frame, concrete, timber)	Concrete with steel frame

Internal Configuration (Compartmented, atrium columns)	Atrium covering 2 stories with 2 compartments either side of atrium
External Configuration (Detached)	Stand alone building. Small supporting buildings at rear.
Floor Construction	Concrete
Compartmentation	No compartmentation in building
Sandwich Panels	None
Roof Type (A Frame, Flat)	A Frame
Roof Materials (Metal sheet, tile/slate)	Metal sheet
Firefighting Shafts, Lifts (Location)	No firefighting shafts or lifts. Customer lift in building not used in event of a fire
Wet/Dry Risers (Location & Charging Point)	None
Sprinklers (Stop valve location)	None
Smoke Control (Plant Location)	Located next to fire alarm panel in atrium
Firefighter Switches (Locations)	None
Open Water Supplies (Rivers, Lakes)	River runs at rear of site
Hydrant Location	2 hydrants – one at front and one at rear of building
Water Meter Bypass	Located next to Gatehouse
On site Foam Installation (Details, Location)	None

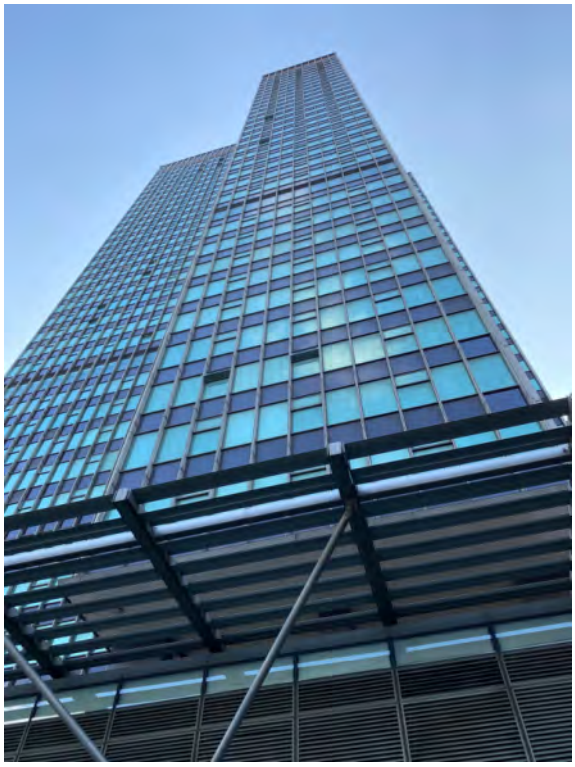
AC Fire Safety Ltd
Protection through Prevention

Fire Risk Assessment

Euston Tower

Version 2

10 September 2020



Review Date: 10 September 2021

Score: Moderate Risk

Assessor: Christopher Stone

Contents

Assessor Profile

Christopher Stone

MSc, MIFireE, MSFPE, MIFSM, MIFPO
Fire Engineer/Risk Assessor

Christopher Stone has been involved in the Fire Safety industry for over 19 years having started his career with Tyne and Wear Fire & Rescue Service. During his 14 years service, the majority of time was served as a Fire Safety Manager responsible for Fire Engineering/Building Regulation submissions and managing a team of Fire Safety Managers. During this time he was seconded to produce an investigation/enforcement process for the Fire Service to assist Inspecting Officers in prosecuting The Regulatory Reform (Fire Safety) Order 2005.

In 2009 he set up the company AC Fire Safety Ltd and for over a decade they have provided a range of services including:

- Fire Risk Assessments
- Fire Engineering
- Fire Training
- Fire Managers role
- Compartmentation/Fire door surveys
- CFD modelling

Through AC Fire Safety he has travelled and consulted on a wide range of complex buildings both nationally and internationally . This includes:

- Hospitals and Healthcare Premises
- Tall Buildings
- Scientific Research facilities
- High Security Facilities
- Prisons
- Construction site coordination (Pre planning of fire plans and partially occupied sites)
- Educational establishments
- Preparation of fire strategies for various building projects
- Wind turbines and renewable energy projects
- Heritage buildings
- Sleeping Accommodation
- COMAH Sites

Organisations:

Member of The Institute of Fire Engineers (MIFireE) – 00068821
Member of The Society Fire Protection Engineers (MSFPE)– 36911529
Member of The Institute of Fire Safety Managers (MIFSM) – Member Number – 867
Member of the Institute of Fire Prevention Officers (MIFPO) – Member Number – M2060
Member of The International Association for Fire Safety Science (IAFSS)
Chartered Association of Building Engineers (CABE) – 60836793
Former Executive Committee (Fire) representative for North East CDM Group
Former Executive Committee USHA (University Safety & Health Association) Fire Group

Action Plan Summary

Task No.	Category	Sub Category	Action Required	Priority	Status	Action Taken	Date Completed
1	Fire Management	Testing & Maintenance	PAVA: no recent history of maintenance/servicing of PAVA (over last 2 years). This needs carried out ASAP and PPM and contract put in place.	Critical	Identified		
2	Escape Routes & Fire Spread	Fire Doors	A number of fire doors are not closing fully. Review all fire doors and repair as required. These are due for maintenance within the coming weeks. Stairwell fire doors should be prioritised for first inspection.	High	Identified		
3	Fire Management	Testing & Maintenance	No fire alarm maintenance has been carried out since August 2019. Churches have recently been on site and have completed approx. 3 floors of fire alarm maintenance. No records were available to review for these visits. 100% review of fire alarm should be carried out as soon as possible and any actions acted upon. Confirm with Churches their maintenance programme to ensure maintenance is carried out ASAP.	High	Identified		

4	Detection & Warning	Control Equipment	Confirm status and impact of fire alarm system on 16th floor where cables have been cut off and left and junction boxes are open and not secured correctly.	High	Identified
5	Escape Routes & Fire Spread	Construction and Glazing	During the assessment contractors employed by the MOD were removing cable and equipment from the areas they occupied in the roof and cable runs through the building. On a sample of a few areas there were areas breaches in fire compartmentation which needs repaired. A survey should be carried out and all fire stopping made good.	High	Identified
6	Detection & Warning	Control Equipment	The fire alarm panel is in a fault condition. The fault should be investigated and repaired. An order is in place for churches to attend site to clear faults. Close action once faults are closed.	High	Identified
7	Detection & Warning	Control Equipment	Review cabling and fire alarm system in MOD areas as there is damage and cut cables. A review of the existing provision of fire alarm in these areas should be carried out and detection installed in line with L1 in accordance with BS5839 part 1 reinstated. A fire alarm contractor should review the current fire alarm arrangements in this area to determine extent of risk.	High	Identified

8	Escape Routes & Fire Spread	Fire Doors	A number of doors on 16/17th floor were wedged open. Wedges into the stairs should not be used to hold open fire doors.	High	Identified
9	Fire Prevention	Housekeeping	The storage of combustibles in the following locations was excessive and should be significantly reduced: 12th floor plant room.	Medium	Identified
10	Fire Management	Testing & Maintenance	There are remedial actions required for the wet riser from the last service visit. These should be completed.	Medium	Identified
11	Fire Management	Testing & Maintenance	Confirm manual smoke vents are serviced and are part of PPM schedule.	Medium	Identified
12	Fire Management	Testing & Maintenance	Extinguishers remedials identified on paperwork from May 2020 need completed.	Medium	Identified
13	Fire Management	Testing & Maintenance	Review emergency lighting paperwork as sheets are not completed as per procedure. Consider retraining of staff in line with procedures put in place in 2018/19 after inspection by Crown Fire Inspectors.	Medium	Identified
14	Fire Management	Testing & Maintenance	Confirm PAT testing has been completed. Some items have a date of March 2020 but some appliances are out of date (March 2018).	Medium	Identified

15	Fire Prevention	Electrical	An electrical appliance in grown floor office has failed its PAT test and should be removed or repaired.	Medium	Identified
16	Fire Management	Record Keeping	Fire alarm weekly: review procedure to ensure all faults are logged on weekly alarm records. Current records don't provide an overview of the faults from fire alarm and therefore make it difficult to manage actions and understand status of faults.	Medium	Identified
17	Fire Prevention	Housekeeping	The storage of combustibles in the following locations was excessive and should be significantly reduced: apex room	Medium	Identified
18	Fire Prevention	Housekeeping	The storage of combustibles in the following locations was excessive and should be significantly reduced: sprinkler/wet riser room.	Medium	Identified
19	Fire Prevention	Heating	Remove heater from lift engineers room in 35th plant room. The heater appeared to have slight damage to from of heater. If heater is required replace with an oil filled heater.	Medium	Identified

20	Emergency Lighting	Emergency Lighting	There are 483 defects in the emergency lighting. These are to be completed as part of lifecycle project. An investigation should be carried out to determine the issues around the large number of defects and consider more frequent maintenance to identify and remedy defects.	Medium	Identified
21	Fire Management	Procedures & Arrangements	Confirm with contractor procedure for raising fire alarm when fire alarm disablements are in place.	Medium	Identified
22	Detection & Warning	Audibility	Two fire alarm sounders on the roof were dangling from cable and not fixed to the wall. These should be repaired and fixed to the wall.	Medium	Identified
23	Escape Routes & Fire Spread	Fire Doors	Fire doors in basement need repaired and replaced. Fire doors are damaged, hinges twisted and don't close fully. All basement doors need reviewed and repaired/replaced. These are high use doors and should be designed to take this into account.	Medium	Identified
24	Fire Prevention	Housekeeping	The storage of combustibles in the following locations was excessive and should be significantly reduced: Plant room 34th floor.	Medium	Identified

25	Fire Prevention	Electrical	The electrical sockets in the lift engineers room is overloaded. This should be reviewed and additional sockets provided where required.	Medium	Identified
26	Fire Fighting	Fire Service Access & Facilities	Repair manual smoke handles where defective within the firefighting/evacuation lift lobbies. These are required for use by the fire service for smoke removal when fire fighting to prevent smoke spread into the stair. Confirm PPM is set up for regular maintenance.	Medium	Identified
27	Fire Fighting	Extinguishers	A number of extinguishers were marked with defective stickers but had been left in place. These should be removed and replaced.	Medium	Identified
28	Escape Routes & Fire Spread	Construction and Glazing	Survey breaches in fire compartmentation which is evident after the strip out of the false ceiling on floors occupied by Google. Once surveyed fire stopping should be actioned.	Medium	Identified
29	Fire Prevention	Housekeeping	Remove furniture in the lift engineers room which has exposed foam or repair to comply with the furniture and fixing regulations.	Low	Identified
30	Fire Fighting	Extinguishers	Extinguishers in basement (which appear to have been used as wedges) should be relocated and installed on brackets.	Low	Identified

31	Fire Fighting	Fixed Systems	The suppression in the boiler room appears to have had a visual only test. Churches have provide a quote to make the system suitable to be fully tested. This should be carried out in line with the relevant British standard.	Low	Identified
32	Fire Fighting	Fire Service Access & Facilities	Provide security straps to dry riser outlets.	Low	Identified
33	Fire Prevention	Electrical	The following portable electrical appliances do not appear to have been recently tested (March 2018), and should therefore be tested (for testing frequencies, reference should be made to the IEE document In Service Inspection & Testing of Electrical Equipment): engineers office, plant room.	Low	Identified

Introduction

This document is intended to assist you in compliance with Article 9 of the Regulatory Reform (Fire Safety) Order 2005 (the 'Fire Safety Order'), which requires that a risk assessment be carried out.

Recommendations are outlined in an Action Plan. This sets out the measures it is considered necessary for you to take to satisfy the requirements of the Fire Safety Order and to protect people from fire (life safety). It is important that you study the Action Plan, and, if any recommendation in the Action Plan is unclear, you should seek clarification.

The Fire Safety Order requires that you keep your fire risk assessment under review. A review date is provided at the start of this document. You should review the report sooner should there be any reason to suspect it is no longer valid, if a significant change takes place or if a fire occurs.

The Fire Safety Order requires that you give effect to 'arrangements for the effective planning, organization, control, monitoring and review of the preventive and protection measures'. These are the measures that have been identified by the risk assessment as the general fire precautions you need to take to comply with the Fire Safety Order. You must record these arrangements. While this fire risk assessment is not the record of the fire safety arrangements to which the Fire Safety Order refers, much of the information contained in this report will coincide with the information in that record.

We have conducted the fire risk assessment in accordance with the Fire Industry Association's publication 'Fire Risk Assessors – Standard Scope of Services'. The fire risk assessor meets the criteria set out by the Fire Risk Assessment Competency Council, 'Competency criteria for the Fire Risk Assessors'.

We have based our assessment on the situation we were able to observe while at the premises and on information provided to us, either verbally or in writing. Our surveys do not involve destructive exposure, and it is not always possible to inspect all rooms and areas, nor inspect less readily accessible areas, such as voids above ceilings. It is therefore necessary to rely on a degree of sampling and also reasonable assumptions and judgement.

The purpose of this report is to provide an assessment of the risk to life from fire, and, where appropriate, to make recommendations to ensure compliance with fire safety legislation. The report does not address the risk to property or business continuity from fire.

Where two or more responsible persons share, or have duties in respect of, premises whether on a temporary or a permanent basis) each such person must—
(a) co-operate with the other responsible person concerned so far as is necessary to enable them to comply with the requirements and prohibitions imposed on them by or under this Order;
(b) (taking into account the nature of his activities) take all reasonable steps to co-ordinate the measures he takes to comply with the requirements and prohibitions imposed on him by or under this Order with the measures the other responsible persons are taking to comply with the requirements and prohibitions imposed on them by or under this Order;
and
(c) take all reasonable steps to inform the other responsible persons concerned of the risks to relevant persons arising out of or in connection with the conduct by him of his undertaking.
(2) Where two or more responsible persons share premises (whether on a temporary or a permanent basis) where an explosive atmosphere may occur, the responsible person who has overall responsibility for the premises must co-ordinate the implementation of all the measures required by this Part to be taken to protect relevant persons from any risk from the explosive atmosphere.

Premises Details

Building Information

Address line 1	Euston Road
Managing agent	SFM
Occupier	HMRC & tenants
Use	Office
Number of floors - ground and above	36
Number of floors - below ground	1
Approximate floor area per floor	1500
Approximate period of construction	1960-1980

Construction details

Euston Tower is a high-rise building with a height of approximately 124 meters. The building is constructed with a steel frame and curtain walls. The building was built in the late 1960s and is made up of 4 wings which each have their own stairwell. The Ground Floor has an additional two stairs for escape.

Occupants

Maximum number of public at any time	50
Are there any occupants especially at risk from fire?	No

Fire loss experience

After discussing with relevant persons on site there have been no fires in the building.

Comments

Euston Tower consists of a basement, ground floor and 35 upper floors. The building is primarily used as office space with tenanted shops on the ground floor. Management responsibility for these shops rests with the landlord Regents Place although the fire alarm is linked to Euston Tower fire alarm.

Plant rooms are located on the 12th floor, part of the 34th and all of the 35th floor levels. Other ancillary accommodation is provided in the basement area, which consists of the oil tank room, lift motor room, wet riser pump room, electrical intake, LV switch room, BT frame room & storage areas.

The basement car park area extends a significant distance horizontally and this is the owned by British Land but managed by Regents Place.

The building is served by 10 lifts in the central core, 5 high rise (Floors 20-34) & 5 low rise (Ground floor – 19). There are Evac/Fire fighting lifts in the East and West lobbies which serve the whole building.

There are four protected staircases utilised for escape purposes, these are the North, East, South and West, which all ultimately discharge directly into external areas outside the confines of the building. Each staircase is equipped with natural smoke vents at the head of the stairs, can be opened by the fireman's switch located in main reception if necessary to provide additional staircase ventilation in a fire situation.

Each stairwell is equipped with natural smoke vents, these being positioned at the head of each staircase enclosures. Additional, natural, manually-operated vents are provided within both the East & West fireman's lift lobbies. Furthermore, there is potential for additional venting of the staircases due to the fact that openable windows are provided at each floor level within each of the staircases.

Reduced occupancy in the building due to Covid. All persons with PEEPS are still working from home and will reassessed if circumstances changed.

Current occupants are:
HMRC
Google
Boohoo
Pinnacle
ACAS
Pupil
Office, Space and Town
GMP Orphan
Hastee
EuroCentre

Request updated FRAs from tenants.

Legislation

Fire safety legislation which applies to these premises	• Regulatory Reform (Fire Safety) Order 2005
This legislation is enforced by	Other
Other fire safety enforcement bodies	CPFSI

Details of any other legislation that makes significant requirements for fire precautions in these premises (other than the Building Regulations)

Equality Act
Building Regulations

Is there an alterations notice in force?	Not Known
Do licensing laws apply to the premises?	No

Fire Prevention

Electrical

Are electrical installations and appliances free from any obvious defect?	Yes
Are fixed installations periodically inspected and tested?	Yes
Is the use and type of portable appliances reasonable?	Yes
Are there suitable limitations on the use of trailing leads and adapters?	Yes
Is there a suitable regime for portable appliance testing?	Yes
Is there a suitable policy regarding the use of personal electrical appliances?	Yes

Comments

The electrical installations and appliances appeared to be in good condition and were used appropriately. Ignition sources observed were also kept clear from combustibles.

Portable appliances appeared to be in good condition and were used appropriately. Ignition sources observed were also kept clear from combustibles.

There is no formal personal electrical equipment policy in place but staff are informed when PAT is to be carried out and are encouraged to get their personal electrical equipment (mobile phone plugs etc tested).

Gas

Are gas installations and appliances free from any obvious defect?	Yes
Is gas equipment protected/located so as not to be prone to accidental damage?	Yes

Heating

Are fixed heating installations free from any obvious defect?	Yes
Are portable heaters used?	Yes
Are portable heaters free from any obvious defect?	No
Is the use of the more hazardous types of heater (e.g. radiant bar fires or LPG appliances) avoided?	Yes
Is the use and type of portable heaters reasonable?	No

Comments

The heating appliances appeared to be in good condition and used appropriately.

Cooking

Does cooking take place on the premises?	Yes
Are reasonable measures taken to prevent fires as a result of cooking?	Yes
Are filters changed and ductwork cleaned regularly?	Yes

Comments

The main kitchen in the building is located on the 1st floor. There is no fire separation between the kitchen and seating area but the restaurant area as a whole is separate from the rest of the building as a single compartment.

There is an office which is an inner room off the kitchen but this is generally left open and used infrequently. In addition there is detection in the access room which make this an acceptable risk.

The first floor is covered by a sprinkler system, which covers the kitchen area.

There is a wet chemical and Co2 extinguisher and a fire blanket provided which have been serviced within the last year.

The vents are cleaned weekly and a deep clean is done annually.

The kitchen is run on electricity only with no gas.

There is a small kitchen/tea point on all floors of the HMRC areas. These are low risk and contain microwaves, toasters and kettles.

Arson

Is security against arson reasonable?	Yes
Is there a reasonable absence of external fuels and ignition sources?	Yes

Comments

The tenant was not aware of any fire incidents in or around the building.

There is CCTV or security provided for the building.

Housekeeping

Is accumulation of combustibles or waste avoided?	No
Are there appropriate storage facilities for combustible & hazardous materials?	Yes

Comments

Upholstered furniture was noted in the public areas. It could not be identified as being to the current standard (BS7176:2007+A1:2011), but was in good condition with no rips or exposed foam. The risk is considered tolerable with no further control measures considered necessary. Any furniture purchased in the future should conform to the recommendations given for medium hazard category in BS7176:2007+A1:2011

Waste materials are removed from the building regularly; combustible material is kept to reasonable quantities, clear from ignition sources and stored in appropriate containers.

There is a significant amount of storage in the 12th & 34th floor plant rooms. Other plant rooms are kept sterile. It is recommended that all combustible materials in the 12th floor plant room should be removed and plant rooms kept clear of combustibles.

The storage in the Apex room & Sprinkler/Wet riser should be significantly reduced.

Building Works

Are there any hot works being carried-out at this time?	No
Are the premises free of any obvious signs of incorrect hot work procedures in the past?	Yes

Comments

There were no building or hot works being carried out at the time of the visit.

There is a contractor policy in place and risk assessments are undertaken prior to commencing works.

Smoking

Are there suitable arrangements taken to prevent fires caused by smoking?	Yes

Comments

Smoking is prohibited within the public areas, commensurate with the requirements of the Health Act 2006. There were no signs of smoking occurring in the public area of the building. Ashtrays are provided and are used in the smoking area which is situated outside in the smoking area. Ashtrays are emptied on a regular basis.

Dangerous Substances

Are dangerous substances present, or liable to be present?	No

Comments

This risk assessment only considers the impact of the use or storage of dangerous substances to the extent necessary to determine the adequacy of the general fire precautions required under the Regulatory Reform (Fire Safety) Order 2005 to safeguard the safety of relevant persons in the event of fire.

Only small quantities of cleaning products and other low risk chemicals are stored and do not present a hazard in terms of general fire precautions.

This risk assessment only considers the impact of the use or storage of dangerous substances to the extent necessary to determine the adequacy of the general fire precautions required under the Order to ensure the safety of relevant persons in the event of fire.

Lightning

Is a lightning protection system installed?	Yes
Is the lightning protection system free from any obvious defect?	Yes
Is the lightning protection system periodically inspected?	Yes

Comments

The provision of a lightning protection in the building, was not apparent. Although the provision of a lighting protection system is not considered essential in the context of this risk assessment, the provision of a lightning protection system would need to be assessed through the risk assessment process detailed in BSEN 62305:2011. If the client considers the premises to be at undue risk from lightning strike then an assessment will need to be carried out by a competent person in accordance with the standard given above.

Escape Routes & Fire Spread

Ease of Use

Are exits easily and immediately openable?	Yes
Do fire exits open in direction of escape where necessary?	Yes
Are escape routes unobstructed and safe to use?	Yes
Are there reasonable measures for the evacuation of disabled people?	Yes

Comments

There are 4 means of escape on all floors which lead into 4 separate stairwells. Each stairwell is lobbied and designed to provide at least 90-minute fire resistance between stairwell and floor. The 1st floor has an additional 2 escape stairs.

The West & East goods lifts have been converted into Evac/firefighting lifts. In the event of a building evacuation one goods lift will be used for evacuation and one would be kept available for firefighter use. These lifts are contained within their own protected lobbies and the lobbies act of refuge areas for persons required to use the evac lift.

The lift lobby space is small and would accommodate 3 persons maximum per lobby. If there were more than 3 wheelchair uses per floor then it would be difficult to accommodate these additional persons. Therefore in order to ensure the safety of disabled persons regular and accurate records of Personal Emergency Evacuation Plans (PEEPS) should be carried out. The records in the building managers office identified 120 persons who require the use of a lift. PEEPs should be reviewed on a 3 monthly basis to help building management plan and prepare for evacuations.

The height of the ceiling in the stairs is in some areas less than 2 metres. This could lead to a delay in evacuation times but are clearly marked with a foam covering on the edges of walls. The occupancy numbers at start of this risk assessment made some reduction in occupancy numbers as a result of ceiling height.

There are large draughts and pressure build-ups throughout the building which could have an impact on smoke spread. The recent improvements to fire doors and compartmentation will help better protect the means of escape.

The loading bay is occupied by a member of security. The loading bay is openable via a key which security have on them and there are 2 escape routes from the lobby area to the loafing bay which is deemed an acceptable risk.

Green override switches are provide on escape routes which are fitted with electro-magnetic hold devices.

The fire shutters that were in place on the first floor have been removed as they are not required. Fire shutters in basement are retained and serviced periodically.

On the first floor there is a dead end corridor from room 1.22 of approximately 20 meters which is deemed satisfactory due to the area being covered by an L1 fire alarm, sprinklers and high ceiling.

It is recommended that all escape routes are checked on a daily basis to ensure they remain available at all times although it is not a requirement to record daily checks. It is recommended that this forms part of the day to day checks of building fire marshals.

There are no persons with disabilities employed in the building. However there is the potential for disabled visitors attending site. Carrying out Personal or General Emergency Evacuation plans (PEEP & GEEP) will assist with providing safe evacutiion for any visitors or future staff. Further information if required is available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/886446/9446_Means_of_Escape_v2_.pdf

Where access control is installed there are green override points installed. It is also expected that the fire doors held closed on mag-locks disengage on activation of the fire alarm or failure of power as required.

Building Works and the impact on the means of escape.

The building was built in the late 1960s and opened in 1970. At this time most offices would not have been open plan. The current floor configuration for higher floors is open plan office space. Floors 1-19 doesn't appear to have changed much since the building was first designed although no plans were seen of the building on its first inception. Floors 20 + are generally open plan with no lift lobby protection. Therefore a fire on any of these floors could potentially spread into the lift shaft and travel through the building. With the draughts and pressures the smoke would then by spread into the open plan offices above with little to no smoke protection. The oldest plans I could see were from fire certificate drawings in 1996 and these had most of these higher floors with some form of lift lobby protection although some floors were open plan. With the building operating on two staged simultaneous evacuation as long as the numbers of disabled persons per floor is low then most people can reach safe areas within travel distance limits quite quickly.

Dimensions

Is there adequate provision of exits?	Yes
Do escape routes have sufficient capacity?	Yes
Are single direction travel distances reasonable?	Yes
Are multi-direction travel distances reasonable?	Yes

Comments

There is good provision of escape routes with travel distances met for single direction and multi-direction escape. The door/stair and final exit width appear suitable for occupancy of the building.

There is good means of escape in the building. All escape routes are within reasonable travel distances and occupancy capacity for the building exceeds actual capacity within the building.

Fire Doors

Are fire doors to a suitable standard?	Minor Defects
Is there suitable provision of self-closing devices?	Minor Defects
Is there suitable provision of hold-open devices?	Yes
Are doors kept locked where appropriate?	Yes

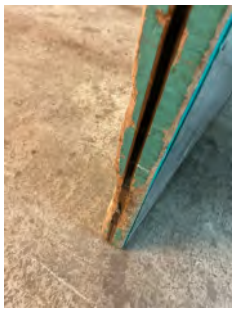
Comments

Fire doors considered as notionally fire resisting due to no identifying marking or certification. The doors appear to be of solid construction and are provided with a suitable self-closing device and intumescent strips/smoke seals. Consequently, the existing provision is considered reasonable.

A number of fire doors are not closing fully. Review all fire doors and repair as required. These are due for maintenance within the coming weeks. Stairwell fire doors should be prioritised for first inspection.

Fire doors in basement need repaired and replaced. Fire doors are damaged, hinges twisted and don't close fully. All basement doors need reviewed and repaired/replaced. These are high use doors and should be designed to take this into account.

A number of doors on 16/17th floor were wedged open. Wedges into the stairs should not be used to hold open fire doors.


Construction & Glazing

Are escape routes protected with suitable walls and floors?	No
Is there adequate compartmentation?	Minor Defects
Is there reasonable limitation of linings that might promote fire spread?	Yes
Is glazing reasonable and free from any obvious defects?	Yes

Comments

During the assessment contractors employed by the MOD were removing cable and equipment from the areas they occupied in the roof and cable runs through the building. On a sample of a few areas there were areas breaches in fire compartmentation which needs repaired. A survey should be carried out and all fire stopping made good.

Survey breaches in fire compartmentation which is evident after the strip out of the false ceiling on floors occupied by Google. Once surveyed fire stopping should be actioned.

Surface spread of flame appeared satisfactory. Wall linings were in good condition and appear to be commensurate with surface spread of flame ratings for Class 1 in escape routes and Class 3 in circulation areas.

The lifts on the HMRC floors 1-19 (except 12th floor) are all provided with lift lobbies made up of fire doors which provide protection against the travel of smoke and fire through the central lifts.

There are no lift lobbies on most floors above floor 19. The lifts don't provide any smoke protection and a fire on any floor without the lobbies will potentially enter the lift shaft and spread throughout the building. Lift lobbies are recommended to stop the spread of fire and smoke but within the scope of this risk assessment is seen as a property protection feature as long as all other actions are completed. There is the potential that Local Authority fire safety officers could insist on their reinstatement to provide compartmentation between floors.

Dampers, Ducts & Chutes

Are there suitable measures to restrict fire spread via ducts and concealed spaces?	Minor Defects

Comments

The assessment has been performed as a non-intrusive survey. Therefore, no reasonable comment can be passed on the provision of hidden ducting.

There is a lifecycle project carrying out repairs to the fire dampers currently in progress.

Smoke Ventilation

Is there reasonable provision of smoke ventilation from escape routes?	Yes
Is there reasonable provision of smoke ventilation for the fire service?	Yes
Is there reasonable provision of smoke ventilation from basement or car parks?	Yes

Comments

There is manual and automatic smoke ventilation in the building. There are some maintenance improvements required and this is addressed in the maintenance section.

Detection & Warning

Control Equipment

Is an electrical fire alarm system expected?	Yes
Is a fire detection and/or alarm system provided?	Yes
Nominal system category	• BS 5839 Pt1 Category L1

System details

The current fire alarm system is an L1 voice fire alarm system which was installed in 2012. Provision of an L1 fire alarm system is a significant enhancement to what would have been originally installed when the building was first built.

The fire alarm panel is in a fault condition. The fault should be investigated and repaired. An order is in place for churches to attend site to clear faults. Close action once faults are closed.

Review cabling and fire alarm system in MOD areas as there is damage and cut cables. A review of the existing provision of fire alarm in these areas should be carried out and detection installed in line with L1 in accordance with BS5839 part 1 reinstated. A fire alarm contractor should review the current fire alarm arrangements in this area to determine extent of risk.

Confirm status and impact of fire alarm system on 16th floor where cables have been cut off and left and junction boxes are open and not secured correctly.

There is a VESDA system on the ground floor covering the room off the foyer.

There are a number of rooms in the plant rooms which are inner rooms. As the building has an L1 fire alarm system there is detection within the access rooms.

Is the control equipment suitably located?	Minor Defects
Is the control equipment free from any obvious fault or defect?	Minor Defects

Comments

The current fire alarm system is an L1 voice fire alarm system which was installed in 2012. Provision of an L1 fire alarm system is a significant enhancement to what would have been originally installed when the building was first built.

There is a VESDA system on the ground floor covering the room off the foyer.

There are a number of rooms in the plant rooms which are inner rooms. As the building has an L1 fire alarm system there is detection within the access rooms.

Any works to the fire alarm system should be in accordance with BS5839:pt1 and undertaken by a competent fire alarm engineer, preferably with Third Party Accreditation.

Manual Fire Alarms

Are there sufficient means of manually raising an alarm?

Yes

Are manual callpoints appropriately located and free from obvious defect?

Yes

Comments

There are manual call points provided throughout with call points provided on escape routes where required and all clearly visible with a fire action notice or signage adjacent.

Automatic Fire Detection

Is there sufficient provision of automatic fire detection?

Yes

Is the type of automatic fire detection suitable and free from obvious defect?

Yes

Comments

There is good levels of detection throughout which would provide early warning of smoke/fire to occupants.

Audibility

Are there adequate means of alerting all relevant persons?

Minor Defects

Comments

The audibility of the system was not verified at the time of this visit, but the system is subject to routine inspection and service. Therefore, it is likely that the audibility is reasonable.

Two fire alarm sounders on the roof were dangling from cable and not fixed to the wall. These should be repaired and fixed to the wall.

Firefighting

Fire Extinguishers

Are fire extinguishers provided?	Yes
Predominant types of fire extinguisher:	• Carbon dioxide - 2kg • Foam - 6L • Water additive - 6L
Last test date of extinguishers:	May 2020
Are fire extinguishers readily accessible?	Yes
Is the provision of fire extinguishers reasonable?	Yes

Comments

There was a good provision of extinguishers throughout.

A number of extinguishers were marked with defective stickers but had been left in place. These should be removed and replaced.

Extinguishers in basement (which appear to have been used as wedges) should be relocated and installed on brackets.

Fixed Systems

Are any fixed systems provided?	Yes
Types of system	• Other
Is provision of fixed systems reasonable?	Minor Defects

Comments

Ensure suppression's systems are tested fully to British standard. The suppression in the boiler room appears to have had a visual only test. Churches have provide a quote to make the system suitable to be fully tested. This should be carried out in line with the relevant British standard.

Fire Service Facilities

Are any fire service facilities provided?	Yes
Types of facility	• Smoke ventilation
Is provision of fire service facilities reasonable?	Minor Defects

Comments

Repair manual smoke handles where defective within the firefighting/evacuation lift lobbies. These are required for use by the fire service for smoke removal when fire fighting to prevent smoke spread into the stair. Confirm PPM is set up for regular maintenance.

Provide security straps to dry riser outlets.

Lighting

Normal Lighting

Is there adequate lighting of internal escape routes?	Yes
Is there adequate lighting of external escape routes?	Yes
Is there adequate lighting in risk critical areas?	Yes

Comments

General lighting provision appeared reasonable. However, this assessment was carried out in daylight hours. It is advised that if there any concerns over the lack of general lighting in areas of the building, then the provision of either general or emergency lighting should be assessed by a competent person.

Overall, emergency escape lighting appeared adequate, particularly in areas that are frequently occupied.

Emergency Lighting

Method of emergency lighting of internal escape routes:	• Maintained emergency lighting (local) • Non-maintained emergency lighting (local)
Is this provision reasonable?	Yes
Method of emergency lighting of external escape routes:	• Maintained emergency lighting (local) • Non-maintained emergency lighting (local)
Is this provision reasonable?	Yes
Method of emergency lighting of other areas:	• Borrowed light
Is this provision reasonable?	Yes

Comments

There are 483 defects in the emergency lighting. These are to be completed as part of lifecycle project. An investigation should be carried out to determine the issues around the large number of defects and consider more frequent maintenance to identify and remedy defects.

Any works to the emergency lighting system should be completed by a competent person and in accordance with BS5266. Also, it is recommended that Third Party Approved contractors are used.

Signs & Notices

Escape Routes

Is escape route signage necessary?	Yes
Is escape route signage provided?	Yes
Is provision of escape route signage suitable?	Yes

Comments

Suitable fire exit signage is displayed above all other final exits and indicates the escape routes.

Fire Doors

Is there signage suitable for self-closing fire doors?	Yes
Is there signage suitable for locked fire doors?	Yes
Is there signage suitable for automatic fire doors?	Yes

Comments

The provision of signage will assist in identifying doors that should be subject to routine interim fire safety inspection but the lack of signage is not considered to have a significant impact on life safety. Relevant doors should be provided with appropriate signage as part of any proposed refurbishment.

Other Signs & Notices

Is there suitable signage for fire service facilities?	Yes
Are fire action notices suitable?	Yes
Are there suitable notices for fire extinguishers?	Yes
Is there suitable zone information for the fire alarm system?	Yes

Comments

Fire alarm zone information is covered in the Detection & Warning section.

Appropriate signs are provided and located in suitable positions for the fire extinguishers.

Fire action notices are to be provided and located in appropriate positions by call points in staff controlled areas.

Fire Safety Management

Procedures & Arrangements

Are fire action procedures suitable and appropriately documented?	Yes
Are there suitable arrangements for calling and meeting the fire service?	Yes
Is there a suitable fire assembly point?	Yes
Location of assembly point:	Munster Square/disperse
Are there suitable arrangements for the evacuation of disabled people?	Yes

Comments

Confirm with contractor procedure for raising fire alarm when fire alarm disablements are in place.

The evacuation plan should be communicated to all staff. The procedure highlights the actions to be taken in the event of a fire.

There is a PEEP plan in place on site.

Familiarization visits are carried out at the discretion of the fire and rescue service.

There are formal annual health and safety inspections, but other arrangements are unclear.

Training & Drills

Do staff receive suitable training on the following areas:

Fire risks on the premises & fire prevention measures?	Yes
Action to take on discovering a fire?	Yes
How to raise an alarm?	Yes
Responding to the fire alarm?	Yes
Calling the fire service?	Yes
Location & use of fire fighting equipment?	Yes
Are fire drills carried out at appropriate intervals?	Yes
Are employees from outside organisations given appropriate fire safety information?	Yes

Comments

Due to Covid there is a reduced occupancy in the building. This is being managed by tenants and it is their responsibility to ensure they have adequate coverage of Fire marshals.

Evacuation is via disperse procedure. One tenant is still using Munster Point assembly point and this is being managed by tenant in communication with building management.

Testing & Maintenance

Is there suitable testing & maintenance of the following fire safety measures:

Fire alarm system?	No
Emergency lighting?	No
Smoke ventilation systems?	Yes
Fixed fire-fighting installations?	Yes
Fire mains?	Yes
Fire-fighting lifts?	Yes
Other fire safety measures?	Yes
Are there routine in-house fire safety inspections?	Yes
Are fire extinguishers subject to suitable test & maintenance?	Yes

Comments

No fire alarm maintenance has been carried out since August 2019. Churches have recently been on site and have completed approx. 3 floors of fire alarm maintenance. No records were available to review for these visits. 100% review of fire alarm should be carried out as soon as possible and any actions acted upon. Confirm with Churches their maintenance programme to ensure maintenance is carried out ASAP.

Confirm PAT testing has been completed. Some items have a date of March 2020 but some appliances are out of date (March 2018).

Review emergency lighting paperwork as sheets are not completed as per procedure. Consider retraining of staff in line with procedures put in place in 2018/19 after inspection by Crown Fire Inspectors.

Extinguishers remedials identified on paperwork from May 2020 need completed.

Confirm manual smoke vents are serviced and are part of PPM schedule.

There are remedial actions required for the wet riser from the last service visit. These should be completed.

PAVA: no recent history of maintenance/servicing of PAVA (over last 2 years). This needs carried out ASAP and PPM and contract put in place.

Record Keeping

Are appropriate records kept of the testing & maintenance of:

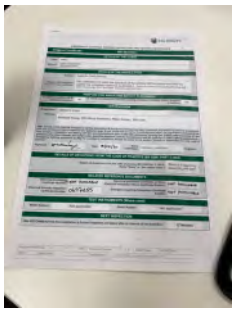
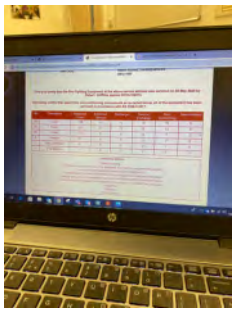
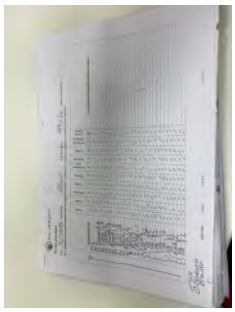
Fire alarm system (inc false alarms)?	No
Emergency lighting?	No
Smoke ventilation?	Yes
Fixed fire-fighting systems?	No
Fire mains?	Yes
Fire-fighting lifts?	Yes
Other fire safety measures?	No
Are records kept of fire drills and training?	Yes

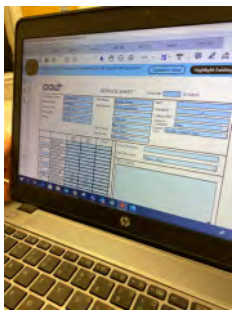
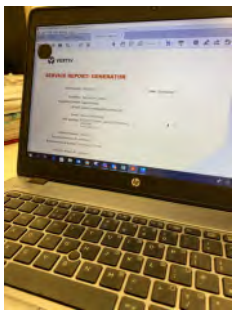
Comments

There is a PPM in place and all maintenance is subject to checks and balances with all recording carried out through a performance management system.

Fire alarm weekly: review procedure to ensure all faults are logged on weekly alarm records.
Fire alarm periodic: Churches: no sheets have been received as recently completed. Tyco serviced on August 2019.
PAVA: no recent history of maintenance of PAVA.
Emergency lighting monthly: review procedure.
Emergency lighting annual: 18/05/20
Fixed wiring: 28/02/19 & 06/08/20. Remedials being completed and within timescales.
Heating system (Oil): weekly and annual. 05/04/20
Lightning protection: 22/01/20
Smoke control (manual): outstanding.
Sprinklers (if applicable): 26/03/20.
Smoke control: 14/01/20
Fire dampers: 30/04/20. Remedials with lifecycle.
Kitchen extract: March 2020. No remedials.
Fire doors: April 2020.
Extinguishers: May 2020. Remedials need completed
Evacuation chairs: None.
Wet riser: July 2020. Remedials outstanding

PAT: March 2020. Some areas including 35th don’t appear to have been completed.

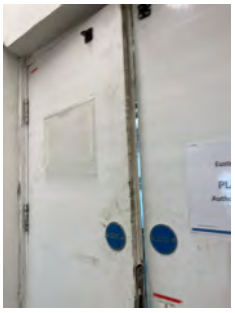
Tasks

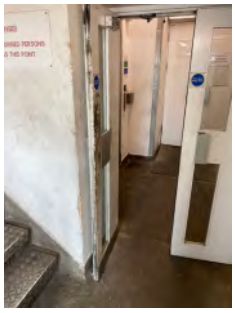
Task 1

Ref	443708
Source Version	1
Category	Fire Management
Sub Category	Testing & Maintenance
Action Required	PAVA: no recent history of maintenance/servicing of PAVA (over last 2 years). This needs carried out ASAP and PPM and contract put in place.
Priority	Critical
Status	Identified
Due Date	10 September 2020

Task 2

Ref	443688
Source Version	1
Category	Escape Routes & Fire Spread
Sub Category	Fire Doors
Action Required	A number of fire doors are not closing fully. Review all fire doors and repair as required. These are due for maintenance within the coming weeks. Stairwell fire doors should be prioritised for first inspection.
Priority	High
Status	Identified
Due Date	8 October 2020



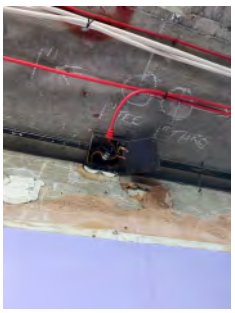


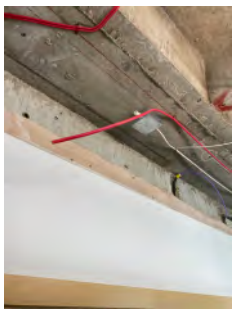
Task 3

Ref	443701
Source Version	1
Category	Fire Management
Sub Category	Testing & Maintenance
Action Required	No fire alarm maintenance has been carried out since August 2019. Churches have recently been on site and have completed approx. 3 floors of fire alarm maintenance. No records were available to review for these visits. 100% review of fire alarm should be carried out as soon as possible and any actions acted upon. Confirm with Churches their maintenance programme to ensure maintenance is carried out ASAP.
Priority	High
Status	Identified
Due Date	8 October 2020

Task 4

Ref	443694
Source Version	1
Category	Detection & Warning
Sub Category	Control Equipment
Action Required	Confirm status and impact of fire alarm system on 16th floor where cables have been cut off and left and junction boxes are open and not secured correctly.
Priority	High
Status	Identified
Due Date	8 October 2020





Task 5

Ref	443677
Source Version	1
Category	Escape Routes & Fire Spread
Sub Category	Construction and Glazing
Action Required	During the assessment contractors employed by the MOD were removing cable and equipment from the areas they occupied in the roof and cable runs through the building. On a sample of a few areas there were areas breaches in fire compartmentation which needs repaired. A survey should be carried out and all fire stopping made good.
Priority	High
Status	Identified
Due Date	8 October 2020

Task 6

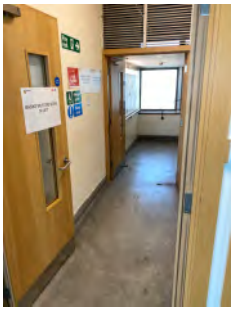
Ref	443676
Source Version	1
Category	Detection & Warning
Sub Category	Control Equipment
Action Required	The fire alarm panel is in a fault condition. The fault should be investigated and repaired. An order is in place for churches to attend site to clear faults. Close action once faults are closed.
Priority	High
Status	Identified
Due Date	8 October 2020

Task 7

Ref	443678
Source Version	1
Category	Detection & Warning
Sub Category	Control Equipment
Action Required	Review cabling and fire alarm system in MOD areas as there is damage and cut cables. A review of the existing provision of fire alarm in these areas should be carried out and detection installed in line with L1 in accordance with BS5839 part 1 reinstated. A fire alarm contractor should review the current fire alarm arrangements in this area to determine extent of risk.
Priority	High
Status	Identified
Due Date	8 October 2020

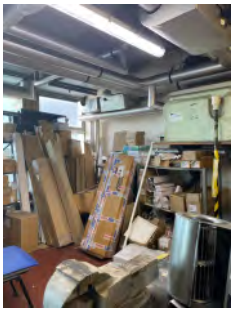
Task 8

Ref	443692
Source Version	1
Category	Escape Routes & Fire Spread
Sub Category	Fire Doors
Action Required	A number of doors on 16/17th floor were wedged open. Wedges into the stairs should not be used to hold open fire doors.
Priority	High
Status	Identified
Due Date	8 October 2020



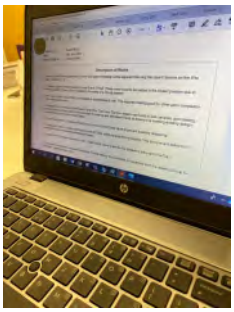
Task 9

Ref	443696
Source Version	1
Category	Fire Prevention
Sub Category	Housekeeping
Action Required	The storage of combustibles in the following locations was excessive and should be significantly reduced: 12th floor plant room.
Priority	Medium
Status	Identified
Due Date	2 December 2020



Task 10

Ref	443707
Source Version	1
Category	Fire Management
Sub Category	Testing & Maintenance
Action Required	There are remedial actions required for the wet riser from the last service visit. These should be completed.
Priority	Medium
Status	Identified
Due Date	2 December 2020

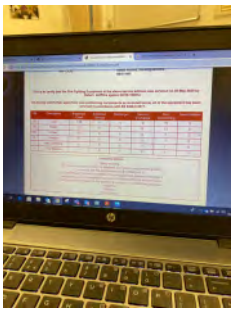


Task 11

Ref	443706
Source Version	1
Category	Fire Management
Sub Category	Testing & Maintenance
Action Required	Confirm manual smoke vents are serviced and are part of PPM schedule.
Priority	Medium
Status	Identified
Due Date	2 December 2020

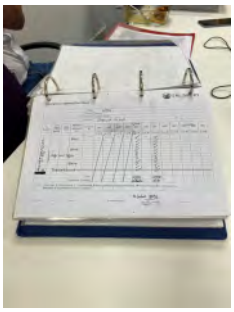
Task 12

Ref	443705
Source Version	1
Category	Fire Management
Sub Category	Testing & Maintenance
Action Required	Extinguishers remedials identified on paperwork from May 2020 need completed.
Priority	Medium
Status	Identified
Due Date	2 December 2020



Task 13

Ref	443704
Source Version	1
Category	Fire Management
Sub Category	Testing & Maintenance
Action Required	Review emergency lighting paperwork as sheets are not completed as per procedure. Consider retraining of staff in line with procedures put in place in 2018/19 after inspection by Crown Fire Inspectors.
Priority	Medium
Status	Identified
Due Date	2 December 2020

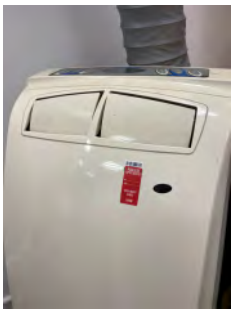


Task 14

Ref	443703
Source Version	1
Category	Fire Management
Sub Category	Testing & Maintenance
Action Required	Confirm PAT testing has been completed. Some items have a date of March 2020 but some appliances are out of date (March 2018).
Priority	Medium
Status	Identified
Due Date	2 December 2020

Task 15

Ref	443702
Source Version	1
Category	Fire Prevention
Sub Category	Electrical
Action Required	An electrical appliance in grown floor office has failed its PAT test and should be removed or repaired.
Priority	Medium
Status	Identified
Due Date	2 December 2020

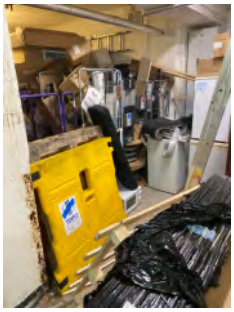


Task 16

Ref	443700
Source Version	1
Category	Fire Management
Sub Category	Record Keeping
Action Required	Fire alarm weekly: review procedure to ensure all faults are logged on weekly alarm records. Current records don't provide an overview of the faults from fire alarm and therefore make it difficult to manage actions and understand status of faults.
Priority	Medium
Status	Identified
Due Date	2 December 2020

Task 17

Ref	443699
Source Version	1
Category	Fire Prevention
Sub Category	Housekeeping
Action Required	The storage of combustibles in the following locations was excessive and should be significantly reduced: apex room
Priority	Medium
Status	Identified
Due Date	2 December 2020



Task 18

Ref	443698
Source Version	1
Category	Fire Prevention
Sub Category	Housekeeping
Action Required	The storage of combustibles in the following locations was excessive and should be significantly reduced: sprinkler/wet riser room.
Priority	Medium
Status	Identified
Due Date	2 December 2020

Task 19

Ref	443682
Source Version	1
Category	Fire Prevention
Sub Category	Heating
Action Required	Remove heater from lift engineers room in 35th plant room. The heater appeared to have slight damage to from of heater. If heater is required replace with an oil filled heater.
Priority	Medium
Status	Identified
Due Date	2 December 2020

Task 20

Ref	443679
Source Version	1
Category	Emergency Lighting
Sub Category	Emergency Lighting
Action Required	There are 483 defects in the emergency lighting. These are to be completed as part of lifecycle project. An investigation should be carried out to determine the issues around the large number of defects and consider more frequent maintenance to identify and remedy defects.
Priority	Medium
Status	Identified
Due Date	2 December 2020

Task 21

Ref	443693
Source Version	1
Category	Fire Management
Sub Category	Procedures & Arrangements
Action Required	Confirm with contractor procedure for raising fire alarm when fire alarm disablements are in place.
Priority	Medium
Status	Identified
Due Date	2 December 2020

Task 22

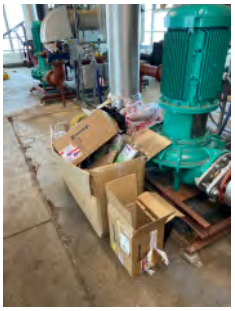
Ref	443680
Source Version	1
Category	Detection & Warning
Sub Category	Audibility
Action Required	Two fire alarm sounders on the roof were dangling from cable and not fixed to the wall. These should be repaired and fixed to the wall.
Priority	Medium
Status	Identified
Due Date	2 December 2020

Task 23

Ref	443691
Source Version	1
Category	Escape Routes & Fire Spread
Sub Category	Fire Doors
Action Required	Fire doors in basement need repaired and replaced. Fire doors are damaged, hinges twisted and don't close fully. All basement doors need reviewed and repaired/replaced. These are high use doors and should be designed to take this into account.
Priority	Medium
Status	Identified
Due Date	2 December 2020

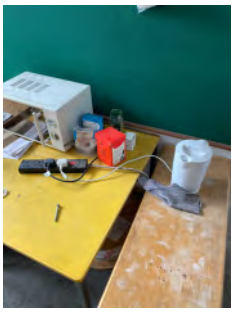
Task 24

Ref	443690
Source Version	1
Category	Fire Prevention
Sub Category	Housekeeping
Action Required	The storage of combustibles in the following locations was excessive and should be significantly reduced: Plant room 34th floor.
Priority	Medium
Status	Identified
Due Date	2 December 2020



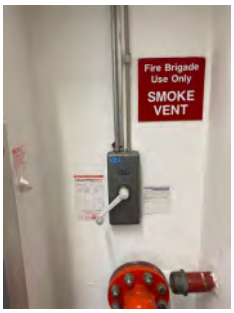
Task 25

Ref	443681
Source Version	1
Category	Fire Prevention
Sub Category	Electrical
Action Required	The electrical sockets in the lift engineers room is overloaded. This should be reviewed and additional sockets provided where required.
Priority	Medium
Status	Identified
Due Date	2 December 2020



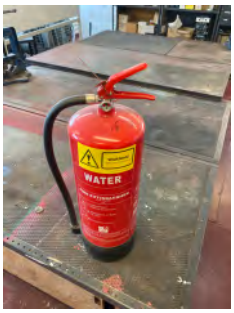
Task 26

Ref	443686
Source Version	1
Category	Fire Fighting
Sub Category	Fire Service Access & Facilities
Action Required	Repair manual smoke handles where defective within the firefighting/evacuation lift lobbies. These are required for use by the fire service for smoke removal when fire fighting to prevent smoke spread into the stair. Confirm PPM is set up for regular maintenance.
Priority	Medium
Status	Identified
Due Date	2 December 2020



Task 27

Ref	443684
Source Version	1
Category	Fire Fighting
Sub Category	Extinguishers
Action Required	A number of extinguishers were marked with defective stickers but had been left in place. These should be removed and replaced.
Priority	Medium
Status	Identified
Due Date	2 December 2020

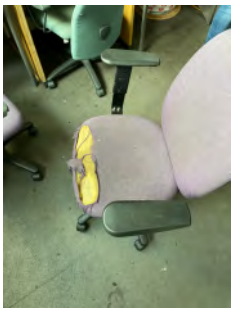


Task 28

Ref	443695
Source Version	1
Category	Escape Routes & Fire Spread
Sub Category	Construction and Glazing
Action Required	Survey breaches in fire compartmentation which is evident after the strip out of the false ceiling on floors occupied by Google. Once surveyed fire stopping should be actioned.
Priority	Medium
Status	Identified
Due Date	2 December 2020

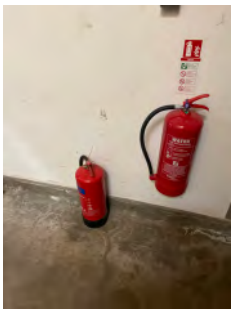
Task 29

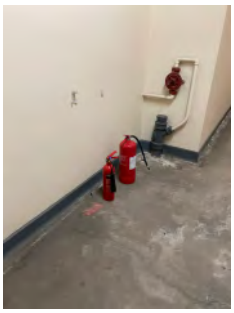
Ref	443683
Source Version	1
Category	Fire Prevention
Sub Category	Housekeeping
Action Required	Remove furniture in the lift engineers room which has exposed foam or repair to comply with the furniture and fixing regulations.
Priority	Low
Status	Identified
Due Date	10 September 2021



Task 30

Ref	443697
Source Version	1
Category	Fire Fighting
Sub Category	Extinguishers
Action Required	Extinguishers in basement (which appear to have been used as wedges) should be relocated and installed on brackets.
Priority	Low
Status	Identified
Due Date	10 September 2021





Task 31

Ref	443689
Source Version	1
Category	Fire Fighting
Sub Category	Fixed Systems
Action Required	The suppression in the boiler room appears to have had a visual only test. Churches have provide a quote to make the system suitable to be fully tested. This should be carried out in line with the relevant British standard.
Priority	Low
Status	Identified
Due Date	10 September 2021

Task 32

Ref	443687
Source Version	1
Category	Fire Fighting
Sub Category	Fire Service Access & Facilities
Action Required	Provide security straps to dry riser outlets.
Priority	Low
Status	Identified
Due Date	10 September 2021

Task 33

Ref	443685
Source Version	1
Category	Fire Prevention
Sub Category	Electrical
Action Required	The following portable electrical appliances do not appear to have been recently tested (March 2018), and should therefore be tested (for testing frequencies, reference should be made to the IEE document In Service Inspection & Testing of Electrical Equipment): engineers office, plant room.
Priority	Low
Status	Identified
Due Date	10 September 2021

Risk Score

Risk Score	Moderate Risk
Next Assessment Due	10 September 2021

Likelihood	Potential Consequence		
	Slight Harm	Moderate Harm	Extreme Harm
High	Moderate	Substantial	Intolerable
Medium	Tolerable	**Moderate**	Substantial
Low	Trivial	Tolerable	Moderate

Likelihood

Low	Unusually low likelihood of fire as a result of negligible potential sources of ignition.
Medium	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).
High	Lack of adequate controls applied to one or more significant fire hazards, such as to result in significant increase in likelihood of fire.

Consequence

Slight	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.