

# REGULATORY REFORM (FIRE SAFETY) ORDER 2005

## Fire Risk Assessment for:

**Grenfell Tower, Grenfell Road,  
London W11 1TQ**

for

The Tenants Management Organisation  
(TMO) of the Royal Borough of Kensington  
and Chelsea

TMO Property reference number UPRN S217012770009

**By Carl Stokes on the 20<sup>th</sup> June 2016**

**Suggested review date: July 2017 with a new FRA in July 2019**  
or before, if any significant changes have taken place, in or adjacent to this building

DATE	REASON FOR REVIEW	BY WHOM	OUTCOME

### **Area(s) covered by this fire risk assessment:**

All the residential area and the common parts of these areas of this building, the staircase and its landings, the entrance hall area, the flat/lift lobby areas, the cupboards off the lift lobby areas, the refuse chute rooms, the roof area plant and water tank rooms, the external roof area, the lift motor room, the bin storage area, the basement level boiler room, the ground floor entrance lobby area and community area.

### **Area(s) not covered:**

All the private residential apartments, any confined spaces, any areas still occupied by the contractors, the ground floor level electrical substation, the roof level ambulance communications room, the nursery, the boxing club and any other part of the building not identified above.

The significant findings and action plan of this Fire Risk Assessment are inserted next with this document continuing on page 2.

**It is the policy of the TMO to take all reasonable steps to protect all relevant persons including residents, employees, visitors, contractors, any members of the public or any other persons who are lawfully on the premises, from potential injury and damage to their health which might arise whilst they are on these premises. When entrusting tasks to an employee their capabilities are taken into account as regard to Health and Safety so far as they relate to fire aspects. The aim of the fire risk assessment is to comply with The Regulatory Reform (Fire Safety) Order 2005.**

**The occupier takes the duties imposed by the Equality Act very seriously and seeks to ensure that all reasonable adjustments are made to enable people with disabilities to be treated fairly and not to be placed at any substantial disadvantage as required by The Regulatory Reform (Fire Safety) Order 2005.**

### **Legal Statement**

This risk assessment has been undertaken as a requirement of The Regulatory Reform (Fire Safety) Order 2005, the enforcing authority, ie "the police" for the FSO are the fire and rescue authority for the area in which the premises are situated, (Article 25 of the FSO). It is the local Fire and Rescue Service who therefore have the power to undertake an audit of the fire risk assessment to determine if it is suitable and sufficient or not. Other agencies can ask if you have completed a fire risk assessment but it is not for them to view, enforce or make judgement on.

**You do not have to give a copy of your risk assessment to anybody, not even the fire authority, if you do give them a copy this could be used against you at a later date. Under Article 9, headed Risk Assessment sub sections 6 and 7 of the FSO it states:**

- (6) **As soon as practicable after the assessment is made or reviewed, the responsible person must record the information prescribed by paragraph (7) where—**
  - a) **he employs five or more employees;**
  - b) **a licence under an enactment is in force in relation to the premises; or**
  - c) **an alterations notice requiring this is in force in relation to the premises.**  
(It is very unlikely that an open air even would have an alterations notice)
- (7) **The prescribed information is—**
  - a) **the significant findings of the assessment, including the measures which have been or will be taken by the responsible person pursuant to this Order; and**
  - b) **any group of persons identified by the assessment as being especially at risk.**

**So legally you have to record any significant findings from the risk assessment if you fall into the categories of 6 a to c above and have this available to be inspected.**

**The FSO applies to the common parts of the building but the Housing Act 2004 applies to the whole of the building and could impose additional fire safety measures on areas of the building outside the scope of the FSO.**

**Responsible Person:**

Chief Executive of the Royal Borough of Kensington and Chelsea

**Building Owners/ Landlord:**

The Council of The Royal Borough of Kensington and Chelsea

**Person Consulted during the Assessment:**

Mrs Claire Williams of the Tenant Management Organisation (TMO) of the Royal Borough of Kensington and Chelsea, the resident's of this building and the contractors.

**Assessment completed by:**

Mr C Stokes, ACI Arb, FPA Dip FP (Europe), Fire Eng (FPA), NEBOSH, FIA BS 5839 Part 1 System Designer, BS 5839 Part 6, Competent Engineer BS 5266, IFE Assessor / Auditor (FSO). 19 years Fire Safety experience with local Fire Authority, in enforcement and auditing roles, 7 years as an independent fire risk assessor. Member of the construction industry CPD certification Service for 13 years. Professional indemnity insurance cover provided by [REDACTED] Enhanced CRB checked.

Contact details: [carlstokes@firesafety-consultant.co.uk](mailto:carlstokes@firesafety-consultant.co.uk) or [REDACTED]

**H M Government Guide used:**

Sleeping Accommodation

Local Government Group Fire safety in purpose-built blocks of flats (July 2011)

**Any other guides that may be relevant:**

Building Regulations 2010 Approved Document B (Volume 2) inc FPA information  
Managing Agents management policy's, procedures and associated documentation  
LACoRS (now Local Government Regulation) Housing Fire Safety Guidance

**Any other legislation that could make requirements for fire precautions in the building.**

The Equality Act 2010

**Building Information**

This fire risk assessment was carried out when the building was in normal use and only a visual inspection has been undertaken of the buildings structure and no invasive structural investigation was undertaken to complete the risk assessment. If there was any concern about hidden structural damage or lack of structural integrity of the buildings structure this will be raised with the landlords and commented upon within the following report. As far as I am aware the construction and any refurbishments of this building have gone through the Building Regulations process. Information has been gathered from the buildings occupants and employees of TMO and from an analysis of documents provided by TMO.

New external cladding has been fitted to this building as part of the project of refurbishment/construction work being undertaken on and within this building. The original external face of this building has been over clad, the new fire rated cladding is fixed to the out face of the building by metal fixings and the whole process has been overseen by the RBKC Building Control Department and Officers. They have approved and accepted the fixing system and cladding used.

#### **Description of the building:**

This is a purpose built standalone square shaped 25 storey tower block, there is a basement boiler room area and a roof level lift motor room and plant rooms along with cold water storage tanks. There are now 22 levels of residential accommodation accessed from the newly refurbished street level entrance hall area, there is also a walkway level entrance which was used during the recent construction work to enter and leave this building. The contractors are still working in some areas of this building and these areas are still under their control, the new children's nursery is now being used but the boxing club area is not presently occupied. The community room on the ground floor is just about to be handed over but the meeting room/store room at the walkway level is still part of the contractors area. .

On the ground floor level externally accessed there is an electrical sub station and a secured bin storage area, internally there is the entrance hall area with the community rooms/area off of it. The nursery has its own entrance/exit direct from open air, with the boxing club having a separate entrance/exit internally from the entrance hall area. The basement boiler room is externally accessed from the side road.

This building stands on its own site and is not attached to any other buildings, apart from the walkway bridge, with enough distances between this building and the adjacent properties calculated to meet Building Regulations approval therefore minimising and preventing any fire spread to adjacent premises. It is considered unlikely that a fire in this building would compromise other buildings within the area. There were no apparent unusual structural features either externally or internally observed at the time of the assessment and there are no high voltage luminous tubes for signs etc in or on this building. The access arrangements to this building have been considered and the arrangements appear to conform to Part B5 of Approved Document B of the Building Regulations. Any changes to road layout etc away from these premises are outside the control of the responsible person. The service road/area on the right hand side of this tower block is used by the emergency services to park their vehicles, this area has been handed over to the contractors and is presently under their control. The LFB have visited site and they have stated that they are happy with the current parking arrangements whereby the contractors are using part of this service road/area. This information is in writing from the LFB.

#### **Construction of the Building:**

This is a brick and concrete constructed building with a flat roof, the protected staircase enclosure is to one side of this building, the staircase and the walls and the floors of this building are constructed of concrete. The walls of the staircase enclosure are painted plaster/render with the staircase and its landings being exposed concrete. The concrete walls of the flat/lift lobby areas are painted. The

basement area is totally separated from the rest of the building with its own independent external entrance/exits. There is a concrete floor slab between the upper residential floor level and the roof plant and lift motor room areas. There appears to be no hidden voids apart from the normal service duct and sanitary ones, in this building or sandwich panels used. There are no apparent unusual elements of building construction that were considered to add a significant additional contribution to the fire risk.

### **Use and Layout of the Building:**

On each of the original 20 residential floor levels of this building there are six self contained private residential apartments, there have been 9 additional flats created in this building, now giving a total of 129 dwellings in the whole building. This building is located off a public road, there is a private service road to the right hand side of this building and hard standing areas at the rear. On the right hand side there is a children's play area. Access to this building is from the street level/ground floor entrance hall area. The walkway to Grenfell Walk is still in place, but now not in use, this floor level is called the "Walkway level". The nursery who occupy part of the lower floor levels of this building have their own separate entrance/exit, the boxing club have an entrance/exit from the internal entrance hall/lobby area, this is a separate entrance/exit from that used by the residents of this building. The contractors, Rydons are still working in a couple of areas of this building, undertaking snagging works and finishing off areas, flat 6 and the walkway level storage area. These areas are still under the control of the contractors. At the roof level, which is accessed from the buildings protective staircase is the lift motor room, plant rooms, water tanks and an Ambulance communications room. The individual apartments are accessed from the internal flat/lift lobby areas on each residential floor level, there is a self closing fire door which separates the flat/lift lobby areas from the protected staircase enclosure. There is a purpose built domestic refuse chute in this building with the openings on each residential floor level in a refuse chute room. The refuse chute rooms are fire separated from each flat/lift lobby area by a 30 minute self closing fire rated door. On the ground floor level there is an electrical sub station and bin room both of which are externally accessed, internally there is the buildings electrical room and the community area. The two lifts in this building service all the residential floor levels including the new floor levels, both are evacuation/fire-fighting lifts so can be used for disabled evacuation if needed. The TMO have plans/drawings showing the layout of this building, none are attached to this fire risk assessment, these plans/drawings will need to be updated.

### **The evacuation strategy for this building:**

#### **For the residential areas of this building:**

For the residents of this building there is a "stay put" evacuation strategy, this means the residents can remain within their own dwelling during a fire incident in this building unless the fire is in their dwelling or that their dwelling is otherwise affected by the fire. In which case they should immediately evacuate their dwelling and call the Fire and Rescue Service. The Fire Service or TMO employees will arrange for a general evacuation of the whole building, at anytime if this is appropriate to do so. Alternatively the resident can leave their dwelling at anytime if

they so wish to do so.

TMO has provided information to all residents in tenant's handbooks, via letters and briefing sheets of 'what to do in the event of an emergency' and articles on fire safety advice and emergency procedures are included in the resident's magazine called "Link".

Also articles are provided reminding tenants that they must not store items in communal areas nor cause obstructions to the means of escape, these articles are produced in the 7 major languages which have been selected as being most likely to meet the needs of the residents. The landlord relies upon the tenants to respond to any emergency in accord with agreed emergency plans and does not facilitate any fire drills or other emergency evacuation exercises.

In the residential area of this building there have been no fires in the last 2 years apart from the burnt cooking/toast incident in the last week of September 2014, the fire service were called to this 10<sup>th</sup> floor level flat by the occupant. As far as I know no fire fighting action was taken by the fire service. I have been told and there is no known problems with false alarms from the domestic detectors installed within the individual dwellings.

**For other areas of this building:**

The contractors will have an evacuation policy and procedure for a fire incident within the areas under their control, the actions that they will take have been provided to the TMO.

The nursery and boxing club will provide their own Fire Risk Assessments (FRA) and copies of these will be asked for by the TMO, the evacuation procedures for these areas will be as per the occupiers FRAs, please see the significant findings sheets for more information on this issue.

**Number of individual private dwellings in this building:**

129

**Methodology, for the completion of this fire risk assessment**

The adopted risk assessment methodology has been developed in line with guidance from the Health and Safety Executive (5 steps to risk assessment) and PAS79. The assessment involves:

- Gathering relevant information for the building, occupants, processes and past fire history etc.
- Identifying hazards and determining measures to eliminate or control identified fire hazards.
- Determining existing physical fire protection measures and identifying any short comings.
- Discussions with occupiers and employees to determine the effectiveness of fire safety procedures and management policies.
- Subjective assessment of the likelihood of fire occurring.
- Subjective assessment of likely consequences to the occupants of a fire event.
- Assess fire risk and tolerability.
- Document the significant findings from the fire risk assessment.
- Formulating an action plan with the aim being to reduce the fire risk, from the

- significant findings with both physical and procedural controls,
- Formulating a checking procedures to oversee the “actions to be taken” in the significant findings.
- Formulating a time schedule for reviewing the assessment.

The type and scope of this Fire Risk Assessment is as defined by the Local Government Group Fire safety in purpose-built blocks of flats guidance document July 2011, as a Type 1 assessment, ie Common parts only, non destructive. But there is some over lap into a Type 3 assessment because questions have been asked and answers given about the electrical and heating installations within the flats along with testing and maintenance regimes and also the fire alarm systems installed.

**The following rational is adhered to for the completion of this fire risk assessment**

From The Building Regulations, Section 1 of B1, Means of Escape from Flats, of Approved Document B Fire Safety (Volume 2) Incorporating Insurers Requirements for Property Protection.

*2.3 The provisions for means of escape for flats are based on the assumption that:*

- a. the fire is generally in a flat;*
- b. there is no reliance on external rescue (e.g. by a portable ladder);*
- c. measures in Section 8 (B3) provide a high degree of compartmentation and therefore a low probability of fire spread beyond the flat of origin, so that simultaneous evacuation of the building is unlikely to be necessary; and*
- d. although fires may occur in the common parts of the building, the materials and construction used there should prevent the fabric from being involved beyond the immediate vicinity (although in some cases communal facilities exist which require additional measures to be taken).*

From BS 9991: 2011 Fire safety in the design, management and use of residential buildings – Code of practice, section 0.2 Flats and maisonettes, General principles.

The provisions for means of escape for flats or maisonettes are based on the assumptions that: (the same as the Building Regulations apart from the end of a.)

- a. fire will occur within the flat or maisonette (e.g. not in a stairwell);*
- b. there can be no reliance on external rescue (e.g. a portable ladder);*
- c. the flat or maisonette will have a high degree of compartmentation and therefore there will be a low probability of fire spread beyond the flat or maisonette of origin, so simultaneous evacuation of the building is unlikely to be necessary; and*
- d. where fires do occur in the common parts of the building, the materials and construction used in such areas will prevent the fire from spreading beyond the immediate vicinity (although in some cases communal facilities exist which require additional measures to be taken).*

**Information for Londoners living in high rise properties, this information is provided by the London Fire and Civil Defence Service (LFB 's web site)**

**If you live in a flat or maisonette**

Flats and maisonettes are built to give you some protection from fire. Walls, floors and doors will hold back flames and smoke for a time.

If there's a fire outside of your flat, in another part of the building, you're usually safer staying in your flat unless heat or smoke is affecting you.

**Important relevant information**

This reviewed **Fire Risk Assessment (FRA)** supersedes any previous **FRA's** in their entirety because of new guidance documents that have been provided by **Government Departments and enforcement agencies** since the original **FRA's** were compiled. In particular the fire safety guidance document produced by the **Local Government Group Fire safety in purpose-built blocks of flats** dated **July 2011** and the amendment of **September 2011**. This also includes determinations issued by the **Secretary of State** concerning the **Fire Safety Order** in particular the one about the retrospective fitting of cold smoke seals on fire rated doors. The reports, including the **Coroner's** ones issued after the **Lakanal House fire (Camberwell London)**, **Shirley Heights fire (Southampton)** and the **Prestatyn maisonette fire (North Wales)** have been studied and where relevant any information contained within these reports has been incorporated into this **FRA**.

**Any other relevant information on this premises**

The **TMO** tenanted flats in this building have been fitted with new flat entrance door sets as part of a larger door replacement programme undertaken by the **TMO**. These new door sets for the tenanted flats have 30 minute certified fire rated self closing doors which meet the requirements of the **Building Regulations**. If there is any glazing in the new doors it is fire rated along with the letter box and/or spy hole if fitted to these new doors, cold smoke seals are fitted as standard, there is a level threshold for compliance with Part M of the **Building Regulations**. A key is not needed to open these new flat entrance doors from the internal face of the door again complying with **Building Regulation** requirements. Information on these new doors which also have acoustic, safety and security properties (**PAS 23 and 24**) as well as fire along with the fire certification documentation is held at the **Hub** in the **TMO** offices. Please see section 12 of the main document for more information on this topic.

**Any other relevant information on this premises**

The three lower floor levels of this building and the basement area have recently under gone refurbishment, new residential dwellings have been created on the floor levels where offices were previously located and new areas for the children's nursery and boxing club have been formed. The basement boiler room has been refurbished.



An audit, under The Regulatory Reform (Fire Safety) Order 2005 (FSO) was undertaken in this building by Fire Safety Inspecting Officer Matthew Ramsey of the London Fire Brigade, with a Notification of Fire Safety Deficiencies being issued. This Notification of Fire Safety Deficiencies was issued by London Fire and Emergency Planning Authority (LFEPA) on the 24<sup>th</sup> March 2014, the LFEPA reference is 12/20696/jf.

A copy of this Deficiency Notice is held by the TMO Health and Safety team based at The Network Hub 300 Kensal Road, there were three requirements on this Notice these are:

1. A system of monitoring should be implemented for the smoke ventilation system installed on the flat/lift areas and a maintenance schedule put in place so the system is kept in good working order.

As part of the construction work a new automatic opening ventilation system has been installed in this building.

2. A maintenance schedule should be put in place for the emergency lighting system installed in this building and the system kept in good working order.

The emergency lighting system has been serviced and tested and is due its annual test/service again shortly, occupiers testing is being undertaken caretakers, I am told.

3. Training on fire issues should be given to staff who work in the ground floor level reception area of Grenfell Tower.

The reception area which was in this building has now been relocated to a nearby building, there are now no persons or TMO employees who now work in this building on a permanent day to day basis.

The three deficiencies highlighted in the Notification of Fire Safety Deficiencies as issued by the Fire Officer are covered in this Fire Risk Assessment (FRA) and on the significant findings sheets that accompany this FRA.

There have been no further written or verbal comments received from LFB as far as I know in connection with this premises and the issued Notification of Fire Safety Deficiencies and no follow up inspection has been undertaken by an LFB officer. This information has been checked with the TMOs Health and Safety team.

The fire officers did not comment either at the time of the audit or in any correspondence after the audit about the buildings layout, the means of escape routes, compartmentation etc. Nor were there any comments about the positioning or siting of the fixed systems within the building, only about the maintenance of the systems. No adverse comments were received either about the management policies, procedures and arrangements in place within this building at the time of the audit. Therefore it has been assumed that the Fire Authority were completely satisfied with these arrangements at the time of the audit and there have been no changes to the residential part of this premises or the TMO's management policies or procedures since the above Fire Safety audit was undertaken. As mentioned there is currently construction work being undertaken within this building but this is mostly on the three lower floor levels and not on the residential floor levels.

During the construction work on this building the LFB fire safety and operational fire crews have visited the building on numerous occasions and no adverse comments have been received in relation to the work being undertaken or regarding fire service access to the building or site.

## FIRE RISK ASSESSMENT

**FOR: The areas of this building, Grenfell Tower, Grenfell Road, London W11 1TQ, under the control of the TMO only.**

The following simple risk level estimator is based on a more general health and safety risk level estimator of the type contained in BS 18004 2008:

Potential consequences of fire ⇒	Slight harm	Moderate harm	Extreme harm
Likelihood of fire ↓			
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                       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 building 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                       Moderate harm                       Extreme harm

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

- Slight harm:** Outbreak of fire unlikely to result in serious injury or death of any occupant.
- 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 risk to the occupants of this premises is considered to be tolerable.

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

Risk level	Action and timescale
Trivial	No action is required and no detailed records need be kept.
Tolerable	No major additional controls required. However, there might be a need for improvements that involve minor or limited cost.
Moderate	It is essential that efforts are made to reduce the risk. Risk reduction measures 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 building is unoccupied, it should not be occupied until the risk has been reduced. If the building is occupied, urgent action should be taken.
Intolerable	Building (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 following action plan. The fire risk assessment should be reviewed regularly.)

A fire risk assessment has been carried out for this building and the significant findings produced. By implementing the actions of the significant findings the risks or hazards will be lowered and therefore making the building safer for its occupants. If appropriate the significant findings should be passed on to any other occupiers in the building so that co-ordinated actions can be taken and visa versa, this also applies to any significant findings from any reviews etc that are undertaken.

You should consider the potential increased risk and hazard of any significant change before the change is introduced, it is usually more effective to minimise a risk or hazard beforehand than trying to achieve it after the event.



inspected and maintained. TMO does not carried out checks on these items of equipment and it is assumed that electrical items of equipment brought into the building by other contractors or workmen are also suitable and in a good condition as again the TMO does not carried out checks on these items of equipment. There is no recent history of major electrical power supply failures for this building.

**2. SMOKING**

**YES NO N/A**

Are reasonable measures taken to prevent fires as a result of smoking?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the smoking ban suitable enforced, in the common parts with "No Smoking" notices displayed at the entrance(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If located are the external smoking areas appropriately sited with suitable receptacles provided?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Does the no smoking policy appeared to be observed at the time of the inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Comments or observations:

The residents are allowed to smoke within their own private individual dwellings but not in the common parts of the building or communal areas, at the time of this risk assessment there were no indications that the no smoking policy was being abused apart from in one area. Behind the wire mesh gate off the staircase on the upper floor level to the roof there are used cigarette ends on the floor, please see the significant findings sheets for more information on this issue. No smoking signage is displayed at the entrance to the building there is no designated external smoking area.

**3. ARSON**

**YES NO N/A**

Does basic security against arson by outsiders appear reasonable?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are combustible and waste materials kept away from the outside of the premises?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are the external refuse containers/rubbish bins suitably secured against an external arson attack?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the refuse storage area kept reasonably tidy and the amount of waste material kept to a minimum?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments or observations:

There is an electrically operated door entry control system on this buildings main entrance/exit door, this is the street level entrance/exit door, this entry control system is to restrict entry to the building to authorised personnel only. There are separate entrances/exits for the boxing club and the nursery areas. Key fobs are used by the residents and there is an intercom system for visitors to the building, this door also has a fireman override switch fitted to the locking mechanism of the door.

The fireman's override switch fitted to the buildings ground floor entrance/exit door releases all the ground floor door locks for a 90 second time period. This has been agreed with the Building Control Officer, so there no other fire fighter over ride switches fitted to the inner door to the lift lobby area for instance. So the emergency services can access all the ground floor level areas. This fireman override switch worked correctly when tested and release the door's locking mechanism as did the one fitted on the boxing club entrance door.

The buildings entrance/exit door and the inner door to the lift lobby area are fitted with self closing devices so that these doors close automatically, both of these self closing devices worked correctly and closed the doors fully when tested at the time of this assessment.

This buildings installed CCTV system records all persons who enter the building. Near the button to release the locking mechanism of the lift lobby and the buildings entrance/exit doors there is a sign which states "Push to open door". The magnetic locks fitted to the exit doors of this building and the storey level doors on the lower floor levels all have manual over ride systems fitted to the doors. On each push button box it states "In emergency press and hold exit button while opening the door".

Combustible and waste materials are kept away from the exterior of the premises as far as possible, some of these areas are under the control of the contractors, Rydon's. The internal flat/lift lobby areas and the staircase landings etc along with the roof and basement levels walkways/means of escape routes were clear of any waste and rubbish at the time of this assessment. But there is contractors waste within some of the rooms at the basement level of this building.

There are secure waste/bin storage area located at the base of the purpose built domestic refuse chute of this building. The openings to this refuse chute are located within the fire rated refuse chute rooms which have self closing fire doors on them. These refuse chute rooms were clear of any storage or waste/rubbish at the time of this assessment, the refuse chute empties directly into the bin area directly below the refuse chute. This bin room is externally accessed and has a metal door fitted with a lock, this door was locked shut at the time of this assessment. The refuse goes into medium sized industry standard metal rubbish bins. This bin storage area is fire separated from the remainder of the building apart from the refuse chute, there is a steel shut off plate built into the refuse chute at its base in this bin area. There was no rubbish or waste on the floor of the bin room at the time of this assessment, all the rubbish was in the waste bins.

Recycling bins are located outside this building on the paved area between this building and the one close by, these are industry standard metal containers with lids for use by the residents of this building and other TMO dwelling nearby. The area around these recycling bins was clear and in a tidy state at the time of this assessment.

From information given to me bin storage area fires have not been a problem in the local area but to minimise the amount of waste the refuse is collected regularly by the local council.

**4. PORTABLE HEATERS & HEATING INSTALLATIONS**      YES      NO      N/A

Is the use of portable heaters avoided as far as practicable, in the areas covered?

**YES NO N/A**

Are fixed heating boilers/installations subject to regular maintenance, including any gas supply?

Are suitable measures taken to keep combustible materials and waste away from boilers or heaters?

Are gas safety checks carried out in the building?

Comments or observations:

Portable heaters are not used in the common parts of this building. There are central gas boilers for this buildings these are located in the basement area of this building, these provide all of the heating and the hot water for all of the dwellings in this building and other TMO buildings near to this one. The gas supply and the boiler are on a planned preventive maintenance and servicing programme which also includes annual servicing of all the gas appliances in the building. This boiler room is externally accessed from the service road area on the right hand side of this building and you then go down a set of concrete steps.

There is a secondary exit from this boiler room via a fixed ladder and a trap door. The gas supply and boilers are on a planned preventive maintenance and servicing programme which also includes annual servicing of any gas appliances of tenanted flats in this building.

According to keystone the gas boilers were last service and gas safety check of these boilers was undertaken on the 1<sup>st</sup> July 2015. There were no outstanding items indicated on the system. Presently contractors are working in this basement boiler room. Access to this boiler room is restricted to authorised persons only because of the type of key needed to access the room. There is a manual gas shut off valve is located by the exit door from this boiler room, the main gas meter for this building is located in this boiler room.

The Link magazine regularly includes a "performance chart" of which one of the featured performance indicators is gas servicing, this is currently showing that the percentage of the tenanted properties with valid gas safety certificate is nearly 100%. The actual figure for the year September 2014 to September 2015 is 99.9%, the remaining point 1 of 1% of tenanted dwellings without an annual gas safety certificate are noted and targeted so that the goal is to have a 100% compliancy rating.

**5. PLANT and FIXED EQUIPMENT**

**YES NO N/A**

Does the plant look in good working order?

Is combustible material kept away from the plant or equipment?

Comments or observations:

The lift motor room and other items of plant are located in a purpose built room at the roof level of this building, at the time of the risk assessment there did not appear to be any leaks of oil or other types of liquid from any plant or machinery. There was no storage of any kind in this lift motor room at the time of this assessment nor in any of the other roof level plant rooms/areas.



There is a planned maintenance programme of inspections for the lift machinery /plant within the building which is carried out by a third party contractor(Express Lifts Limited). The records kept centrally in the "Hub" in Kensal Road but there is a record book kept in the lift motor room to aid the service engineers, the last service dates in the lift record books is the 13<sup>th</sup> June 2016. Both lifts installed in this building are fire fighting/evacuation lifts according to the TMO's documentation, these fighting/evacuation lifts have their own independent dedicated power supply and fire fighters control switch. This roof level lift motor room is accessed from the buildings staircase. The staircase has a gate and wire mesh at the top residential floor level so restricting access to the roof level. There are water boost pump rooms located in basement boiler room, these pumps are on a planned maintenance programme of inspections according to the contractor's information and service booklets in the boiler room. Cofley the third party contractors last service of these pumps was on the 14<sup>th</sup> April 2016. A record book is kept next to the pumps to aid the service engineers and also this information is kept centrally in the "Hub" in Kensal Road. At the time of the risk assessment there did not appear to be any leaks of oil or other types of liquid from any plant or machinery. At the roof level in one of the plant rooms the new extraction system for the flat/lift lobby areas has been installed, this was last serviced on the 5<sup>th</sup> April 2016.

**6. COOKING and LAUNDRY FACILITIES**

**YES NO N/A**

- Are reasonable measures taken to prevent fires as a result of cooking?
- Is there a suitable design and layout of the cooking area?
- Are reasonable measures taken to prevent fires if any laundry facilities are located in the building?
- Are any filters changed or cleaned on a regularly basis if fitted in any cooker hoods or tumble dryers in laundries?
- Are any filters changed and ductwork cleaned on a regular basis in any kitchen/laundry extract systems?
- Are there suitable extinguishing appliances available?

Comments or observations:  
:

There are no cooking or laundry facilities located in the common parts of the residential areas of this building, this assessment is covering the residential areas only. Kitchens are located in each residential dwelling in this building with the occupier being responsible for the maintenance of these domestic cooking areas and also any laundry equipment contained within their dwelling.

**7. LIGHTNING**

**YES NO N/A**

- If a lightning protection system is installed on the building does it look in good condition?

Comments or observations:

This building has a lightning protection system installed on it, from the information provided by the TMO engineer this system is on a planned preventive maintenance contract with an external contractor, Redpath Buchanan Limited. With the records kept centrally in the "Hub" in Kensal Road. Where the system was visible and accessible a visually inspected was undertaken and there appeared to be no obvious defects, there was limited access to the open roof area because of the mobile telephone masts located at the roof level of this building.

**8. HOUSEKEEPING**

**YES NO N/A**

- Is the standard of housekeeping in the building adequate?
- Is there an avoidance of unnecessary amounts of combustible materials or waste?
- Is there an avoidance of inappropriate storage of combustible materials or waste in escape routes, staircases or around rubbish chutes (if any in the building)?
- Is there an avoidance of inappropriate storage of combustible materials or waste in cupboards or stores etc?
- Are any soft furnishing etc in corridors kept to a minimum, do not raise the fire loading or cause an obstruction?
- Are routine preventive checks carried to see that the housekeeping/cleaning routines are working?

Comments or observations:

The TMO has decided that the policy on items in the common parts of this building will be a "managed" one. This is because the structural elements of this building are concrete and brick ie non combustible, this means that items can be on the flat/lift lobby areas, but not on the landings of the staircase. The amount and type of items is monitored by regular caretaker inspections. So push bikes or push chairs etc could be left on the flat/lift lobby areas, but they must not cause an obstruction and there must not be combustible items stored here, this includes items piled up on any push chairs etc. At the time of this assessment there were push chairs and push bikes in these areas, they were no obstructing the staircase doors.

The caretakers or contract cleaners ensure that any quantities of waste and combustible material are removed from the building to the external bin room, therefore not allowing a build up of any combustible waste materials or rubbish in the common parts of these buildings. It is part of the landlords cleaning contract that the cleaning contract's manager undertakes regular inspections to see that all the areas of the building are kept free of combustible storage and waste.

The lift motor room and the other roof level water tank and plant rooms were free of any storage the time of this assessment. There is a lot of contractors waste in the basement boiler room though. On each flat/lift lobby area there is a cupboard which contains pipes etc all these were clear of any storage and each one is fire stopped at each floor level.

There is a purpose built domestic waste rubbish chute in this building, the openings for this refuse chute are in purpose built refuse chute rooms located off each flat/lift lobby area, these refuse chute rooms have self closing fire doors on them. The secure bin room area is located at the ground floor level and is externally accessed, this bin room was clean and tidy with no loose items of rubbish on the floor of the room at the time of this assessment, all the waste was contained within the refuse bins. The area on the floor under the refuse chute openings in the refuse chute rooms was free of any rubbish or waste as were the refuse chute rooms. The flooring of all of the flat/lift lobby areas is linoleum square floor tiles with the staircases being exposed concrete flooring, there are no curtains at any of the windows of the staircases. **No** areas of flooring were seen to be damaged at the time of this assessment.

**At** the time of this assessment the means of escape route in this building, the flat/lift lobby areas and the staircase enclosure were clear of any combustible items or storage. The residents have not introduced any other items into the common parts of the building, apart from some residents do have door mats outside their flat doors, these are low risk and did not appear to cause an obstruction or be a trip hazard.

**9.HAZARDS INTRODUCED BY OUTSIDE CONTRACTORS & BUILDING WORK**

	<b>YES</b>	<b>NO</b>	<b>N/A</b>
Are fire safety conditions imposed on outside contractors?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If contractors carry out lone working are there suitable precautions taken?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is there satisfactory control over works carried out in the building by outside contractors (including "hot work" permits)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If there are in house maintenance personnel, are suitable precautions taken, including use of hot work permits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments or observations:

Contractors are currently undertaking work in this building, this is on parts of the lower three floor levels and also in the basement area. Otherwise only authorised contractors, who have to provide method statements and schedules of work or TMO employees carry out work for the TMO in this building, the TMO has policies and procedures for contractors or in house employees carrying out work in their buildings, including "hot work" or other permit work. These policies and procedures are kept under review and altered as and when necessary or in the light of new information. If any contractors or tradesmen are employed by a leaseholder or tenant directly and the TMO is not informed then the TMO has control over these contractors or tradesmen and these persons are outside the control of the TMO.

**According to the TMO policies, contractors employed by the TMO or TMO employees are advised on procedures to undertake when lone working takes place. TMO instructed contractors or tradesmen are advised that when work is carried out that waste and building materials should not be allowed accumulate and obstruct or block exits and escape routes nor should final exit doors be propped or wedge open to aid the workmen.**

If openings are created in fire resisting partitions or compartments suitable preventive measures must be put in place to maintain the fire separation within the building until these openings are closed again.  
 It is assumed that any tools or items of equipment used and owned by any contractors or tradesmen and brought onto the premises are suitable for the work to be undertaken and in a good state of repair. **No** checks or inspections are undertaken on any items of equipment or tools of any contractors or tradesmen.  
**No** other construction, refurbishment or maintenance work was being carried out in the common parts of this building at the time of this assessment, apart from the work being undertaken by Rydons.

**10. DANGEROUS SUBSTANCES**

**YES NO N/A**

If dangerous substances are, or could be, used, has a risk assessment been carried out, as required by the **Dangerous Substances and Explosive Atmospheres Regulations 2002?**

Comments or observations:

There are no dangerous substances stored or used in the common parts of this building covered by this FRA, this risk assessment has not taken into account any substances that may be within any domestic dwelling, but there are clauses in the tenancy agreements to restrict such substances. There maybe dangerous substances in the contractors controlled areas but again this will be covered by the contractors **Fire Risk Assessment**.

**11. PEST CONTROL**

**YES NO N/A**

Is there suitable control of any pest infestations?

Comments or observations:

The building does not have any problems at the present time with rats, pigeons, squirrels or other rodents or insects but this issue is kept under review to mitigate any damage that these types of vermin could cause to the fabric or structure of the building and electrical cabling or wiring. If droppings or guano are noticed then action can be taken to inform the pest control company employed by TMO to monitor the pest situation and measures will be taken to eradicate the problem.  
 Where pigeon netting has been erected to cover the flat balconies, from a visual inspection from the ground there appeared to be no areas where this pigeon netting was damaged and it appeared to be well fitted, at the time of this assessment. There was no access to each flat balcony as these are private areas but the pigeon netting where fitted, is only covering the balcony opening it is therefore not obstructing any doors from the flat onto the external balcony area.

**FIRE PROTECTION MEASURES**

**12. MEANS OF ESCAPE FROM FIRE**

**YES NO N/A**

It is considered that the building is provided with reasonable means of escape in case of fire?

	YES	NO	N/A
Is the design of the escape routes adequate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is there suitable protection of escape routes?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are the escape routes unobstructed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are the escape routes suitable for buildings occupancy?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do the escape routes lead to suitable final exits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are there reasonable travel distances, both in a single and alternative direction, if applicable?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are travel distances in dead ends suitably limited?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are travel distances suitable for disabled people?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is there adequate provision of final exits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are exits easily and immediately openable where necessary?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Where necessary do the fire exits open in direction of escape route?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do the final exit doors have appropriate securing devices?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do the dwelling entrance doors appear to be fire rated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are any other doors protecting the escape route suitably fire rated and in a good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Where appropriate are any fire doors fitted with self closing devices and do these function correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are store and cupboard fire doors kept locked shut?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Where appropriate are the doors/flaps to rubbish chutes or the fire doors to the rubbish chute rooms suitable?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the floor covering suitable to prevent slips, trips and falls?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments or observations:

The original parts of this building appear to have been constructed in accordance with the Building Regulations at the time of construction with the layout of this building, the travel distances, the escape routes, the width of the escape routes and the exit appropriate for the present use. The means of escape routes in this building, the protected staircases leads directly to a final exit at its base. The exit route has

been approved by the RBKC Building Control department and is a protected route to open air. The ground floor level entrance hall/lobby area and lift lobby area are two separate areas, again this arrangement has been acceptable by the Building Control Officer.

The buildings exit doors open outwards, in the direction of travel, as do all of the doors from the storey level flat/lift lobby areas on to staircase landings.

There was adequate protection for the means of escape routes from the building with no visual damage observed during the assessment, there are no openings off the staircase apart from the entrance/exit doors to each flat/lift lobby area.

Each flat/lift lobby area has the apartment entrance doors, the double doors of the newly constructed cupboards and the refuse chute room door off it.

To exit the building there is a push button over ride device to release the locking mechanism on the lift lobby area to entrance hall door and on the main entrance/exit door.

The new timber doors in this building are according to documents seen fire rated doors, the glazing in them is fire rated glass but some doors do not have cold smoke seals fitted to them and on others the intumescent strips have been painted over. Please see the significant findings sheets for more information on any of the newly fitted doors in this building.

The tenanted apartments within this building had a few years ago their flat entrance doors replaced with new door sets. These door sets are self closing 30 minute certified fire rated doors which meet the requirements of the Building Regulations, if there is glazing in the new doors is fire rated. The letter box on these new doors is fire rated and cold smoke seals are fitted as standard, there is a level threshold for compliance with Part M of the Building Regulations. A key is not needed to open these new flat entrance doors from the internal face of the door again complying with Building Regulation requirements. Information on these new doors which also have acoustic, safety and security properties (PAS 23 and 24) as well as fire along with the fire certification documentation is held at the Hub in the TMO offices.

The other flat entrance doors which have not been replaced are 44mm thick, flush timber fire rated doors fitted with perko, concealed self closing devices on the ones looked at, these are the originally fitted doors. These are close fitting doors. Please see the significant findings sheets for more information on the locations of any non compliant doors in this building and the new door being fitted to flat 112.

If new flat entrance doors are fitted in the future to the original flat doors then these will conform to the requirements of the Building Regulations at the time of installation.

On the flat entrance doors that have not been replaced the standard letter box and flap is in the lower half of the door and in some cases these doors are fitted with multiple locks. It is assumed that the occupants of these flats can exit the flat in an emergency without any undue delay.

The original flat entrance doors in this building are flat numbers 56, 61, 86, 92, 105, 142, 154, 156, 165, 166, 174, 185, 195, and 206. It is TMO's policy that if flats are refurbished or when new tenants move into a flat then the self closing device fitted to the flat entrance door is accessed. If the self closing device does not close the door fully or one is not fitted to the door then a new appropriate self closing device is fitted. Some of the original flat entrance doors have more than one lock fitted to them, it is assumed that the occupants of these flats can exit the flat in an emergency without any undue delay.

The basement area is completely fire separated from the upper floor levels, there is a secondary exit from the basement area

The door to each of the refuse chute rooms is a 30 minute fire rated door fitted with a self closing device and cold smoke seals, the flat/lift lobby area doors on to the staircase has recently been routed out and have had cold smoke seals fitted to them. The boarding covering the panels on each flat/lift lobby area is not fire rated, these risers are sealed at each floor level so the boarding is only there to stop persons interfering with the electrical cabling.

At the time of this risk assessment the escape routes were clear of obstructions. The door/flap to rubbish chute openings of the purpose built refuse chute in the refuse chute rooms were suitable and shut fully.

The flooring of the common parts of this buildings appearing suitable to prevent slips, trips and falls during an evacuation, the flat/lift lobby areas have square linoleum floor tiles on them and the staircase are exposed concrete flooring. There were no signs of any damage to the floor surface or any unevenness. The caretaker carry's out checks and reports any deficiency's to the "Hub" so repairs can be undertaken.

When this building was constructed it was not a requirement under the Building Regulations standards at the time to have cold smoke seals fitted to fire doors either the flat entrance doors or other fire doors, changes to the Building Regulation standards are not retrospective. The fire doors that do not have smoke seals are close fitting and shut tight. If these fire doors are to be replaced, repaired or any refurbishment work carried out that involves these fire doors, then they will either be upgraded with smoke seals fitted to the door or in the surrounding frame or replaced with doors that already have smoke seals fitted. This stance on cold smoke seals is backed up by the Secretary of State's determination issue in May 2012.

If any of the apartments in this building are leaseholder apartments rather than tenanted apartments then the entrance door of the flat is demised to the leaseholder. The TMO does not have any control over or legal powers to intervene if the leaseholder changes the flat entrance door. The lease agreement clearly defines that the entrance door is demised to the leaseholder so if there is an issue over the conformity of the flat's entrance door to either the standards required of the Fire Safety Order or the Building Regulations this is a private matter between the leaseholder and the enforcement authority.

There have been meetings on this subject between the TMO and the local LFB fire safety team leaders, minutes of these meeting are held by the TMO Health and Safety team manager along with the relevant policies and procedures. If the apartment is a tenanted one with a TMO tenant not a leaseholder then the TMO has control and will undertake any appropriate actions needed.

**13. DISABLED PEOPLE**

YES NO N/A

It is considered that the building is provided with reasonable arrangements for means of escape for disabled people?

Comments or observations:

At the time of the risk assessment there was no evidence of any resident within the premises who suffers from sensory impairment that would prevent them from hearing a shouted warning of fire.

TMO have introduced a comprehensive programme to gathering information about tenants including any disabilities and their physical ability and mobility to respond to

any emergency situations. This information will be imputed on a "TP Tracker system" and held centrally.

The additional information will be used to assess if residents may require additional devices to provide them with early warning of smoke/fire in their home and/or development of a Personal Emergency Evacuation Plan (PEEPs).

Both of the lifts in this building are firefighter/evacuation lifts and could be used as part of the evacuation strategy for disabled persons but if these lifts were used this would be under the control of the fire service, if they were in attendance. Before the fire service arrive at this building these lifts could be used by the residents or perhaps TMO/RBKC staff. This policy is in accordance with guidance given in the H M Government risk assessment document **Sleeping Accommodation**.

I would recommend that the staff are trained on how to use these firefighter/evacuation lifts and that any keys needed are kept really available.

#### 14. MEASURES TO LIMIT FIRE SPREAD AND DEVELOPMENT

	YES	NO	N/A
It is considered that there is:			
A reasonable standard of compartmentation provided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A reasonable limitation of the fire loading in the means of escape routes/corridors that might promote fire spread?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The wall and ceiling linings are in a good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If fitted, is any fire rated glazing in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Where necessary are fire dampers provided to protect the means of escape against fire, smoke and combustion products in the early stages of a fire?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If fitted, is the ductwork of any mechanical ventilation system cleaned and any filters changed regularly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments or observations:

This building appears to have appropriate fire separation and compartmentation and from a visual inspection of the structure of the building there appeared to be no areas that raised concern about structural damage to the building or fire stopping issues. There were no obvious signs that in the areas covered that bad workmanship would mean that the fabric or fire integrity was or could be compromised. **No** invasive structural investigation was undertaken to complete this risk assessment. There were no visible breaches of the compartment or wall and ceilings linings at the time of this risk assessment.

**At** the time of this assessment the fire loading of the common parts of the building was considered to be good, please see the sections on "housekeeping" and "arson" for more information.

**New** false ceilings have been fitted on each flat/lift lobby area, there is pipe work above these ceilings with the concrete floor slabs separating the floors, the false ceilings are for aesthetic appearances only.



The open basement area of this building has been classed as one compartment, but some of the doors of rooms off this basement area are damaged etc, please see the significant findings sheets for more information on this issue.

The staircase is fire separated from the flat/lift lobby area at each floor level by a self closing fire rated door. On each of the flat/lift lobby areas there is an opening for the electrical riser, this riser is fire stopped at each floor level, the boarding covering this riser is not fire rated, and it does not need to be.

There is fire rated glazing in some of the fire doors in this building no piece of fire rated glazing were seen to be damaged or had cracks in them at the time of this assessment . The newly fitted doors have the glazing in them marked as fire rated glass. The glass in the refuse chute room doors vision panels is either Georgian wired fire rated glass or clear glass marked as "pyran".

From information provided there are no fire dampeners in this building and natural ventilation is used to vent the staircase enclosure with a permanent open vent at high level at the head of the staircase.

Please see section 19 below for more information on the smoke ventilation systems in this building.

**15. EMERGENCY ESCAPE LIGHTING**

**YES NO N/A**

If any is fitted, is the emergency lighting system currently installed in the building, to a reasonable standard?

Is there adequately normal or borrowed lighting to back up any fitted emergency lighting system installed?

Where necessary, does the emergency lighting cover any external escape routes?

If fitted, are all emergency lighting units, clean and visually in a good condition?

Comments or observations:

There is an emergency lighting system installed in this building, there are combined normal and emergency lighting units installed on the landings of the staircase, on the flat/lift lobby areas and in the ground floor level entrance lobby area. At the roof level there are combined units in the lift motor room and the other roof level areas, units also cover the basement area. I believe that the presently installed emergency lighting system will provide an adequate level of illumination should the normal electrical supply fail within this building.

In the new community area there was no emergency light seen in the disabled toilet, there are emergency lighting units in the other areas of this community room.

There is street lighting on the public road outside the building which would give adequate illumination by borrowed light to the external route from the building during the hours of darkness. In the event of an electrical supply systems failure in the building the exterior lighting would still function as it is on a different electrical circuit.

The emergency lighting units/system in this building was not tested during at the time of this assessment. The installed emergency lighting system/units are self contained units. The glare limits of the emergency lighting units are with-in the acceptable ranges of BS 5266 and the colour of the light produced is white , there are no twin pack lighting units in use in this building.

The work on installing the new emergency lighting units in this building started before BS 5266 Part 2016 came into force so the new emergency units in this building have been installed to BS 5266 Part 1 2011 standard, not the current version.

**16. FIRE SAFETY SIGNS AND NOTICES**

**YES NO N/A**

- Is there suitable pictogram fire signage in this building?
- Are any signs displayed clearly legible, fixed securely in position and unobstructed?
- If necessary, are there pictogram fire safety notices in the building with the assembly point indicated?

Comments or observations:

There is a simple layout to the floor levels of this building, there is only one staircase and exit so there is no need for escape signage to be displayed or provided in this building, the layout of this building is not complex. Not having any escape signage displayed in the building would be in accordance with H M Government Guidance. There are no fire action notices displayed in the residential areas of this building as the residents have been instructed on the actions to be taken in the event of any emergency in other ways, please see the section on evacuation strategy at the beginning of this document.

There are TMO standard fire action notices displayed next to each of the fire alarm break glass call points in the basement boiler room and in the roof level areas of this building, but additional fire action notices giving different information are also displayed.

Pictogram signage is used so that anybody who does not use English as their first language can understand the signage.

Signs displaying the floor level number are permanently fixed to the wall of the staircase landing and on each flat/lift lobby area in a large font near in this building to aid the emergency services. In the ground floor level lift lobby area of this building there is a sign on the wall informing the emergency services which flats are located on which floor levels. This sign aids the fire service or other emergency service to where an incident in this building maybe located.

**17. MEANS OF GIVING WARNING IN CASE OF FIRE**

**YES NO N/A**

- Is a suitable manually operated electrical fire alarm system provided in the common parts of the building?
- Does it have automatic fire detection, if required?
- Is the system suitable for the occupancy and fire risk?
- If the system extends into the private flats is it suitable?
- Has remote transmission of the system been considered?

Comments or observations:

There is an automatic smoke detector located in each flat/lift lobby area on every residential floor level of this building these detectors are to operate the smoke ventilation system only. There is a detector on the ceiling of the community areas hallway to operate the smoke vent in this area. There are no sounders of the fire alarm system in the residential parts of the building, again the detectors are only located here to operate the ventilation system.

There appears to be no fire detector in the ground floor level area off the lift lobby area in front of the electrical intake room, there is a smoke vent in the ceiling of this area.

In the basement boiler room area there is a manual fire alarm system and the roof level lift motor and other plant rooms there is automatic detection and a manual system. It is not known where the control panel is now located for these two systems.

Please see the significant findings sheets regarding the domestic fire detection fitted within the newly constructed dwellings, where the standard of systems installed is not as per the requirements of BS5839 Part 6 2013. Some of the new dwellings do not have heat detectors in the kitchens for example.

There was access to some of the original flats in this building, in these flats there were electrically powered/operated hardwired interlinked domestic devices fitted. There was a smoke detector/sounder fitted in each hallway with a heat detector/sounder in each kitchen. All of the TMO tenanted dwellings of this building have had electrically powered/operated hardwired interlinked heat and smoke detectors fitted in them. It is not known if automatic detection is fitted in all the leaseholder flats but there could be a mixture of different types of domestic self contained battery operated smoke alarms.

The TMO in news letters etc has advised residents to fit domestic smoke detectors and there are some central records of devices being fitted in some flats before residents moved in. London Fire Brigade (LFB) operate a policy where they will undertake home visits to domestic dwellings and fit domestic detectors, the LFB have provide home information leaflets centrally to the TMO for caretakers to deliver to residents to request these visits.

If during any LFB visits concerns are identified about fire safety issues in any dwelling then the arrangement is that the TMO are informed of this by the LFB. It is TMO's policy that if flats are refurbished then the installed detection is assessed to see if it needs to be up graded etc by the addition of new devices.

Where domestic smoke and/or heat detectors/alarms are fitted within a dwelling the occupant/resident is responsible for any testing of the device. At the start of every TMO tenancy any installed fire detection devices within the dwelling are tested by the TMO to be certain that they are in working order. This testing of the fire detection devices by the TMO at the start of a tenancy is recorded.

A "Stay Put" evacuation strategy is currently in place for all residential flats in the building and this is considered to be acceptable.

**18. PORTABLE FIRE EXTINGUISHING APPLIANCES**

**YES     NO     N/A**

Is there reasonable provision of portable fire extinguishers?

Are all the fire extinguishing appliances readily accessible?

Comments or observations:

There are no portable fire fighting appliances provided within the common parts of this building, this is in accordance with the guidance in the document issued by the Local Government Group, Fire safety in purpose-built blocks of flats (July 2011) and because of advice from London Fire and Civil Defence Service.

Under normal circumstances it is good practice for extinguishers to be located in a building along escape routes and near exits but as residents in an accommodation building are not trained to use portable fire extinguishers none are provided.

The presence of fire extinguishers may encourage people to tackle a fire when, they should be evacuating the building and additionally any fire extinguishers provided could be stolen and /or misused as there are no permanent staff/employees on site. So with the recommendations of the guidance in mind portable fire fighting equipment is only located in plant rooms and other similar ancillary areas of TMO controlled buildings. It is not know if any portable fire fighting equipment has been purchased by any residents for their own private dwellings, in news letters to the residents there have been fire safety articles contains basic instructions in relation to the safe use of portable fire fighting equipment.

If any residents have purchased portable fire fighting equipment, then this will be for their own person use and beyond the control of the TMO.

There is carbon dioxide fire extinguisher located in the roof level lift motor room and other plant room areas and also dry powder and carbon dioxide fire extinguishers in the basement boiler room. With the coming into force of BS 5306 Part 8 2012 the principles of the 2000 document in regard to dry powder fire extinguishers being used/discharged in a confined space have now been extended to cover all types of buildings. The BS 5306 Part 8 2000 document only previously commented on they use in hospitals, old people's homes and hotels this is because of the sudden reduction of visibility which may temporarily jeopardise any escape, rescue or other emergency action. Previously water based extinguishers were the preferred option in hospitals, old people's homes and hotels, now dry powder fire extinguishers should not normally be specified for use indoors in any building unless mitigated by a Health and Safety assessment.

The fire extinguisher engineer may comment further on dry powder fire extinguisher being in the basement boiler room, when he next undertakes the annual servicing of the fire extinguishers.

At present there is no fire fighting equipment in the community room/area, a foam and carbon dioxide fire extinguisher will be located in this area along with a fire blanket in the kitchen area.

**19. FIXED FIRE SYSTEMS AND FIRE EQUIPMENT**      **YES**      **NO**      **N/A**

Type of fixed system: **Dry Riser**                    
**Evacuation/Fire fighting Lift**  
**Automatic Opening Ventilation System**

Comments or observations:

There is a dry riser installed in this building with the inlet now on the building front face, a commissioning certificate has been issued for the work undertaken on this building dry riser. Additional outlets have been provided on the new residential floor levels as well. The dry riser inlet is visible from the fire appliance parking place, which will be on the road outside this building's entrance door. This inlet is housed in a standard metal recessed painted box, the outlets for the dry riser are also housed

in standard secure metal boxes with a glass panel on the front face of the boxes. The outlets are located on each floor level of the residential part of this building and also at the roof level, as there is an outlet on each floor level there is no sign on the staircase landing indicating that an outlet is located on that flat/lift lobby area. The TMO use a third party contractor to maintain and service the dry rising main and all the fitting attached to it and they are responsible for its servicing, maintenance and effective working order. If any defects are noticed during a service or maintenance visit the contractor in under a contractual obligation to inform the TMO of these defects if there is a substantial cost implication or repair them if possible if the costs are within the agreed amount. If this dry riser is used by the fire service during an operational incident then this riser is under the total and full control of the fire service. Both the lifts in this building are evacuation/fire fighting lifts, the lifts have the standard fire fighter over ride controls fitted so that the Fire and Rescue Service can take control of these lifts and use them as they see fit to do so in the event of an emergency. The TMO use a third party contractor to maintain and service these fire fighting lifts and any associated equipment and they are responsible for its servicing, maintenance and effective working order. If any defects are noticed during a service or maintenance visit the contractor in under a contractual obligation to inform the TMO of these defects if there is a substantial cost implication or repair them if possible if the costs are within the agreed amount. The power supply's to each lift are as required for a fire fighter/evacuation lift along with all the other requirements for weight and size etc but there is no roof hatch in the lifts. These two evacuation/fire fighting lifts could be used as part of a person's PEEP's if needed. If these fire fighting/evacuation lifts are used by the fire service during an operational incident then these lifts are under the total and full control of the fire service. There has been a new automatic opening smoke ventilation system installed in this building, please see the significant findings sheets for more information on this system. Located on each flat/lift lobby area, there are two sets of vents, each of two vents on opposite walls on the flat/lift lobby areas. There is a smoke detector located on each flat/lift lobby area which upon activation opens the vents on that floor level only. All other opened vents in the building then shut, this includes vents in other areas of the building. Again these vents are activated by local smoke detectors. The extraction units for these vents are located in the roof level plant room, on the wall. There is a manual over ride facility located on each floor level and near to each vent, these are for the use by the fire service. In the ground floor entrance hall area there is a control panel for the ventilation system on the wall with the main control panel locked in a cupboard off the lobby area of the community room. Please see section 17 above, "Means of giving a warning in case of fire" for more information of the lift/flat lobby area detectors. This smoke extraction system incorporates dampers within the duct work. In each of the refuse chute rooms there is a mechanical air extraction system which will also remove smoke, again the extraction units and the controls for this system at located at the roof level on the opposite wall of the plant room from the flat/lift lobby areas ones.

## MANAGEMENT OF FIRE SAFETY

### 20. PROCEDURES AND ARRANGEMENTS

YES      NO      N/A

Are there routine in- house fire safety inspections and checks carried out, with records kept?

Are appropriate fire procedures in place with a suitable record of the fire safety arrangements ?

Are there suitable arrangements for summoning and meeting the fire and rescue service, including providing relevant information and any likely hazards?

Are there suitable policies and procedures in place for contractors and "lone workers"?

Comments or observations:

The TMO caretakers walk around the common parts of this building on a regular basis and there are defect reporting policies and procedures in place so that any discrepancies or damage can be repaired or items replaced.  
 Any resident can ring the TMO 24 hour help line at any time to report any defects in this building, damaged lights etc or any items that are damaged.  
 The Fire and Rescue service can be called at any time by any resident if there is an emergency situation and the tenant would meet the Fire Service on their arrival as would be the situation for a fire in any private dwelling.  
 The Health and Safety Advisor of the TMO has regular liaison meetings with the local fire and rescue service commander to pass on information and arrange familiarisation visits if needed or requested. As far as I can tell and from information I have been given the policies and procedures are subject to reviewing at set intervals or are altered if new or relevant information becomes available.

### 21. TRAINING

YES      NO      N/A

Are TMO employees given adequate fire safety instruction and training on induction and adequate periodic "refresher training" at suitable intervals, with records kept?

Is the content of the staff training provided suitable, with practical instruction on fire fighting equipment?

Comments or observations:

All TMO employees receive induction training which includes fire training and periodic "refresher training" at regular intervals, any records of this training are kept by the Human Resources (HR) department at 300 Kensal Road North Kensington. Caretakers, wardens and office managers receive training to be fire marshals/ wardens by a third party fire training company the fire warden are also the nominated persons and by being recorded as a fire warden you are also the nominated person, training records again kept by the HR department. The topics and areas covered by the training packages are available from either TMO's HR or the Health and Safety team or direct from the training provider.

I have been shown copies of the training documents and they appear to cover all the areas and topics that are mentioned in the H M Government risk assessment guidance booklets.

The practical training involves using the types of portable fire fighting appliances currently provided in the TMO buildings.

If anybody receiving this training does not use English as their first language this fact is taken into account so that they comprehend the information given to them.

Prior to moving into this building all residents are issued with a handbook which includes some fire safety advice and are given a tour of the building by a Neighbourhood Officer, there is no documentary evidencing required by TMO for the issuing of the handbook.

Contractors are reported by TMO to be required to have a construction phase plan which should be agreed before work commences and be acted upon including provision of a suitable number and type of fire extinguishers and someone trained to use them as part of the fire safety arrangements for the project where appropriate.

The ground, upper ground and walkway level offices in this building no longer exist, these office areas are now have now been converted into private residential dwellings, so the issued of fire training as raised in the Notification of Fire Safety Deficiencies dated the 24<sup>th</sup> March 2014 now does not apply. The reception area which was located in the street level entrance hall area now does not exist either, there are no TMO employees or other staff who work in this building on a permanent basis.

Fire drills are not undertaken by the residents of this building, it is not known what fire drills are undertaken by Rydons, but this item will be covered in their fire risk assessment.

**22. CO-OPERATION WITH ANY OTHER EMPLOYERS**      **YES**      **NO**      **N/A**

If this building is shared with other occupiers is fire risk Information co-ordinated between occupiers?                 

Have you received appropriate information on other occupiers fire risks and general fire precautions?                 

Comments or observations:

I have classed the residential areas of this building, the areas covered by this Fire Risk Assessment (FRA) as a single occupied residential building. There are contractors working in this building refurbishing the lower floor levels, the basement and the street level to the walkway level. The contractors, Rydons have provided a copy of their FRA to the TMO.

There is an EDF electrical substation accessed externally at the ground floor level and located under the residential areas of this building, this substation is next to the bin storage room. This electrical substation is accessed from the footpath off the service road at the side of this building. This area is unmanned and only visited infrequently and restricted to employees of this electrical company. There is no needed for the companies employees to enter the building and TMO employees cannot access this area. This is only mentioned because to access the substation you need to enter the service road, if it was on the public road outside the boundary of this site there would be no need to mention this substation.

The criteria used for the substation has also been applied to the ambulance roof level communications room, although any person visiting the communications room would have to access the building to access this roof level room. Any person visiting this area would be escorted because special keys are needed to open the roof level

access doors and the door to the roof area where the equipment is located within this room.

When the boxing club and the children's nursery areas are in use then the TMO should ask for copies of their FRAs, please see the significant findings sheets for more information on this issue.

The contract cleaning company who are contacted to clean the common parts of the building only have their employees work in the building for a certain period of time each day and there are frequent meetings with this company and TMO so again I have classed them for the purposes of this fire risk assessment as not another occupier.

### **23. TESTING AND MAINTENANCE**

	<b>YES</b>	<b>NO</b>	<b>N/A</b>
Is the structure of the premises adequately maintained?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is there weekly testing and six monthly servicing of fire detection and fire alarm system, with records kept?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is there a monthly visual and annual testing of the emergency escape lighting, with records kept?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is there a monthly visual and annual maintenance of the fire extinguishing appliances, with records kept?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is there a monthly testing and annual servicing and maintenance of any automatic opening vents along with any associated equipment/devices, with records kept?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is there routine checks of final exit doors and/or security fastenings, with records kept?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is there periodic inspection of any external escape staircases and gangways, with records kept?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Six monthly inspections and annual testing of any wet or dry rising mains, with records kept?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Monthly inspections of switches and annual testing of the fire fighting/evacuation lifts, with records kept?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Weekly inspections and annual testing of the sprinkler installations, with records kept?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Annual inspection and test of lightning protection system, with records kept?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Monthly and annual testing and servicing, under load of any back up/stand by generators, with records kept?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



#### Comments or observations:

There are two areas of this building covered by BS5839 Part 1 fire detection systems, these are the roof level areas and the basement area, please see the significant findings sheets for more information on these installed fire detection systems. It is not known if weekly occupiers tests of the fire alarm systems are being undertaken.

There are emergency lighting units installed on the means of escape route of this building, plus in the lift motor room, boiler room and other plant rooms and also covering the basement area. Can it please be confirmed that these emergency lighting units are subject to a preventive maintenance programme and that testing, servicing and maintenance is being carried out on this system including an annual discharge test. With any records kept centrally by the TMO and the contractor? It is not known if monthly occupiers tests of the emergency lighting system/units is being undertaken.

There are fire extinguishers located within this building are out of service date according to the contractors labels attached to each extinguisher, the last service date was October 2014. All of the fire extinguishers had the same last service date on their servicing labels.

This building has a lightning protection system installed on it, from the information provided by the TMO via Keystone the computerised asset management system, this lightning protection system was last serviced in September 2015. It is not known if the system failed or passed this service and test. This building's lightning protection system is on a planned preventive maintenance contract with the external contractor, Redpath Buchanan Limited. All records for this system are kept centrally by TMO at the "Hub" and by the contractor.

According to the contractors testing label fixed with the dry riser inlet box this dry rising main was last tested on the 19<sup>th</sup> February 2016 by the external contractors Select Fire.

The comments on the contractors label say "sat" this is I am assuming short for satisfactory. Testing, servicing and maintenance is undertaken on this dry rising main by the professional third party contractor on a planned preventive maintenance programme with records kept centrally by TMO at the "Hub" and by the contractors. The certificate for this dry rising main with all the test pressure information is at the Hub.

It is not known if the inspections and checks of the buildings structure as per the caretakers check list are being undertaken.

A new buildings inspection check list has been implemented by the TMO for the caretakers, this is a smart telephone based system. The check list is filled in while walking the premises and electronically sent to The "Hub" where the information is processed and recorded. In between caretaker visits to these buildings any resident can report any structural damage, damage to a door/fitting etc or lights not working to the TMO help desk.

#### **Definitions:**

**Responsible person:** The person ultimately responsible for fire safety as defined in the Regulatory Reform (Fire Safety) Order 2005. which is:-

"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.

"relevant persons" means—

- a) any person (including the responsible person) who is or may be lawfully on the premises; ( members of the public in a shop or licensed premises, contractors or visitors in a factory ) and
- b) any person in the immediate vicinity of the premises who is at risk from a fire on the premises, but does not include a fire-fighter who is carrying out his duties in relation to a function of a fire and rescue authority under section 7, 8 or 9 of the Fire and Rescue Services Act 2004 (fire-fighting, road traffic accidents and other emergencies). This could include people in flats above a ground floor shop or the staff living over a licensed premises.

**Child;** Anyone who is not over compulsory school age, i.e. before or just after their 16th birthday.

You must, before you employ a child, provide a parent with clear and relevant information on the risks to that child identified by the risk assessment, the measures you have put in place to prevent/protect them from fire and inform any other responsible person of any risks to that child arising from their undertaking.

**Combustible materials:** A substance that can be burned.

**Compartment wall and/or floor:** A fire-resisting wall or floor that separates one fire compartment from another.

**Competent person:** A person with enough training and experience or knowledge and other qualities to enable them properly to assist in undertaking the preventive and protective measures.

**Dangerous substances:** A substance which because of its physico-chemical or chemical properties and the way it is used or is present at the workplace creates a risk or a substance subject to the Dangerous Substances and Explosive Atmosphere Regulations 2002 (DSEAR). Small quantities of substances are not considered a major hazard for instance DSEAR talks of quantities of 25 litres and more so a few plastic bottles of cleaning materials and other such substances are not relevant and would be normal. For example the local corner shop or supermarket would not record as dangerous substances all the items they sell in their shop, including bleach, white spirit, paint and glue etc.

**Material change:** An alteration to the premises, process or service which significantly affects the level of risk to people from fire in those premises.

**Means of escape:** Route(s) provided to ensure safe egress from the premises or other locations to a place of total safety.

**Premises:** Any place, such as a building and the immediate land bounded by it, any tent, moveable or temporary structure or any installation or workplace.

**Significant findings:** A feature of the premises or items from which the fire hazards and persons at risk are identified this information comes from completing the fire risk assessment. It can also contain the necessary information, instruction and training needed and how it will be given. From the significant findings can come an:-

**An Action plan:** The actions you have taken or will take to remove or reduce the chance of a fire occurring or the spread of fire and smoke, including time frames and who will supervise or carry out the work needed.

**Travel distance:** The actual distance to be travelled by a person from any point with-in the floor area to the nearest storey exit or final exit, taking into account the layout of walls, partitions and fixings in the building. If the building has been constructed in accordance with The Building Regulations and no unauthorised alterations have then place then the travel distances will be satisfactory.

**Where necessary:** The Order requires that fire precautions (such as fire fighting equipment, fire detection and warning, and emergency routes and exits) should be provided (and maintained) 'where necessary'.

What this means is that the fire precautions you must provide (and maintain) are those which are needed to reasonably protect relevant persons from risks to them in case of fire. This will be determined by the findings of your risk assessment including the preventative measures you have or will have taken.

**Who is at Risk in the building:**

This is a term used in risk assessment documents and the Fire Safety Order 2005, for the purposes of this risk assessment persons who are at risk are deemed to be anybody who is lawfully entitled to be in the building, ie relevant persons, but excluding fire fighters engaged in emergency activities. Please see the definition of "relevant persons" as described above.

**Young person:**

- (a) A person aged 16 years, from the date on which he attains that age until and including the 31st August which next follows that date.
- (b) A person aged 16 years and over who is undertaking a course of full-time education at a school or college which is not advanced education.
- (c) A person aged 16 years and over who is undertaking approved training that is not provided through a contract of employment.

**REFERENCES:**

Fire Safety Design and Management

BS 5588-12: 2004. *Fire precautions in the design, construction and use of buildings*  
Managing fire safety. Now incorporated in:

BS 9999: 2008. *Code of practice for fire safety in the design, management and use of buildings* and BS 9991:2015.

LACoRS. *Housing Fire Safety Guidance (Now Local Government Regulation)*

Local Government Group Fire safety in purpose-built blocks of flats (July 2011)

### Fire Detection and Fire Alarm Systems

BS 5839-1: 2013. *Fire detection and fire alarm systems for buildings - Code of practice for system design, installation, commissioning and maintenance.*

BS 5839-6: 2013. *Fire detection and fire alarm systems for buildings – Code of practice for the design, installation and maintenance of fire detection and fire alarm systems in dwellings.*

BS 5839-8: 2013. *Fire detection and fire alarm systems for buildings - Code of practice for the design, installation, commissioning and maintenance of voice alarm systems.*

BS 5839-9: 2011. *Fire detection and fire alarm systems for buildings - Code of practice for the design, installation, commissioning and maintenance of emergency voice communication systems.*

### Fire Extinguishing Appliances

BS 5306-1: 2006. *Code of practice for fire extinguishing installations and equipment on premises - hose reels and foam inlets.*

BS 5306-3: 2009. *Fire extinguishing installations and equipment on premises - Code of practice for the inspection and maintenance of portable fire extinguishers.*

BS 5306-8: 2012. *Fire extinguishing installations and equipment on premises - Selection and installation of portable fire extinguishers - Code of practice.*

BS EN 3. *Portable fire extinguishers.*

BS EN 671-3: 2009. *Fixed fire-fighting systems. Hose systems. Maintenance of hose reels with semi-rigid hose and hose systems with lay-flat hose.*

BS 5306-0:2011 *Fire protection installations and equipment on premises Part 0: Guide for selection of installed systems and other fire equipment*

BS EN 1869: 1997. *Fire blankets.*

BS ISO 14520-1:2015 *Gaseous fire-extinguishing systems. Physical properties and system design. General requirements*

### Emergency Lighting

BS 5266-1: 2016. *Emergency lighting - Code of practice for the emergency lighting of premises.*

BS 5266-7: 1999 (BS EN 1838: 2013). *Lighting applications - Emergency lighting.*

BS 5266-8: 2004 (BS EN 50172: 2004). *Emergency escape lighting systems.*

### Fire Safety Signs

BS ISO 3864-1:2011, *Graphical symbols. Safety colours and safety signs. Design principles for safety signs and safety markings*

BS 5499-4: 2013. *Safety signs, including fire safety signs. Code of practice for escape route signing.*

BS EN ISO 7010:2012+A5:2015. *Graphical symbols. Safety colours and safety signs. Registered safety signs.*

BS 5499-10: 2014. *Guidance for the selection and use of safety signs and fire safety notices*

### Fixed Fire Extinguishing Systems and Equipment

BS 5306-2: 1990. *Fire extinguishing installations and equipment on premises - Specification for sprinkler systems.*

BS 9990: 2015. *Code of practice for non-automatic fire-fighting systems in buildings.*

BS EN 12845: 2015. *Fixed fire-fighting systems - Automatic sprinkler systems - Design, installation and maintenance.*

#### Miscellaneous

BS 476-22: 1987, 'Fire tests on building materials and structures, methods for determination of the fire resistance of non-load-bearing elements of construction'

BS 7176: 2007 A1 2011. *Specification for resistance to ignition of upholstered furniture for non-domestic seating by testing composites.*

BS 7273-4: 2015. *Code of practice for the operation of fire protection measures - Actuation of release mechanisms for doors.*

BS 7671: 2008 A3:2015. *Requirements for electrical installations. IEE Wiring Regulations. Seventeenth edition.*

PAS 79: 2012. *Fire risk assessment - Guidance and a recommended methodology.*

BS 8300:2009 (Amended 2010) *Code of Practice for the Design of Buildings and their approaches to meet the needs of disabled people.*

*HM Government Supplementary Guide- Means of Escape for Disabled People.*

#### Lightning

BS EN 62305-1: 2011. *Protection against lightning. General principles.*

BS EN 62305-2: 2012. *Protection against lightning. Risk management.*

BS EN 62305-3: 2011. *Protection against lightning. Physical damage to structures and life hazard.*

BS EN 62305-4: 2011. *Protection against lightning. Electrical and electronic systems within structures.*