

fire risk assessments

shepherds court and bush court, charecroft estates off shepherds
bush green, london w12 8ra

October 2009

hunters

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1 Purpose of Report

The purpose of this Report was to follow up on the Risk Assessment of May 2007, to determine which of the then identified risks have been eliminated, schedule the outstanding work required to raise the fire safety standard to an acceptable level and to provide, where possible, specifications and quantities from which the work can be priced.

The main body of this Report is, therefore, comprised of background, commentary and observations, and recommendations for actions to be undertaken.

2 Summary

The original Risk Assessment of May 2007 identified 26 individual hazards in Shepherds Court, and 25 in Bush Court, and suggested control actions to be undertaken.

This survey has found that most of these hazards are still present and makes clear recommendations for eliminating, or mitigating the risk posed by, those hazards.

In addition, however, during the survey it has become apparent that the overall risk to the safety of Residents is potentially more severe than the simple assessment of the originally identified individual risks would indicate.

The over arching recommendation, therefore, is to seek further professional assessment of the fire safety of the whole building within its context in order to formulate an holistic strategy for the modification, improvement and ongoing management of the asset.

3 Background

This report into Fire Safety at Shepherds Court and Bush Court continues from, and expands upon, the Fire Risk Assessments undertaken by Valerie Lawton of Solutions Fire Safety Limited in May 2007.

The original risk assessment was undertaken to comply with the requirements of the Regulatory Reform (Fire Safety) Order 2005 which stipulates that fire risk assessments be carried out and significant findings recorded.

The building was inspected in May 2007, hazards were identified and the fire risks were categorised as high, medium and low.

The Risk Assessment itemised 26 risks for Shepherds Court, of which 5 were considered to be High Risk, 14 Medium Risk and 6 Low Risk.

Similarly, Bush Court was found to have 25 risks categorised as 4 High Risk, 14 Medium Risk and 7 Low Risk.

As would be expected, many of the risk are, to a greater or lesser degree, common to both blocks.

In the Summary of Significant Findings of the original audit it was stated that the general standard of fire safety was unacceptable at both Shepherds Court and Bush Court and recommendations were made for itemised actions to be taken. These recommended actions were in line with British Standards.

Many of the risks reported on in the analysis of May 2007 are still apparent and others, either not evident at that time or newly introduced, have been identified.

In compiling this report the age of the buildings, and the standards applicable at the time of their build, have been taken into consideration when recommending the measures to be taken.

4 Legislation and Guidance Documentation

A number of guidance documents have been referred to in compiling this report. These include, inter alia:

- The Regulatory Reform (Fire Safety) Order 2005 (referred to as “the Order”)
- Fire Safety Risk Assessment – Sleeping Accommodation; HM Government (referred to as “the Guide”)
- BS9999:2008 Code of practice for fire safety in the design, management and use of buildings
- BS 8214:2008 Code of practice for fire door assemblies
- Best Practice Guide to Timber Fire Doors – The Architectural and Specialist Door Manufacturers Association
- BS 5839-1:2002 + A2:2008 Fire detection and fire alarm systems for buildings
- BS 5499-5:2002 Graphical symbols and signs —Safety signs, including fire safety signs - Part 5: Signs with specific safety meanings
- BS 5499-4:2000 *Incorporating Corrigendum No. 1* Safety signs, including fire safety signs — Part 4: Code of practice for escape route signing
- BS 5499-10:2006 Safety signs, including fire safety signs — Part 10: Code of practice for the use of safety signs, including fire safety signs
- Fire Safety in Flats – The London Fire Brigade

5 Building Layout

The flats, which were built in the mid 1970s, are constructed above the West 12 Shopping Centre. They are accessed from a ground floor lift lobby which opens onto the footpath of Shepherds Bush Green. A double door from the lift lobby leads to a corridor which passes through the building to the rear exit which opens onto the bin store area and service yard to the shopping centre. The single fire escape stair from upper residential levels discharges onto this corridor, thus allowing the final exit in the case of a fire to be either to the service yard or main road.

At Level 2 of the buildings is an access, via the lifts, to the outside Amenity Deck which serves both Shepherds and Bush Court. From the lift lobby at this level is a corridor which leads to a locked door which opens onto the central escape stairs.

The communal area at each of the 17 upper residential floors (Levels 3 to 19) consists of a rectangular, central core which essentially houses 3 individually fire compartmented vertical risers, viz. the Lift shaft, the Stair core and the Smoke Vent.

In addition, the Dry Riser and the Electrical Riser are incorporated in the central core but are not designed as vertical fire compartments.

At one end of the core are the doors to the 2 lifts; at the other end is the door to the staircase.

Around this central core is the rectangular "race-track" corridor lobby. The width of the four legs of this corridor varies from 1.2m along the sides of the core, to 1.5m at the staircase end and 2.7m at the end of the core where the lifts are located.

There are typically 6 flats per floor, four of the doors being located at the mid point of each leg of the corridor with the other 2 at diagonally opposite corners. Also, at high level in each of these corners is a louvre panel behind which runs a vertical shaft from Level 1 to an outlet louvre on the roof.

Located in each of the other pair of diagonally opposite corners is a translucent, fixed louvre panel which transmits daylight and fresh air into the lobby.

Along the outer walls of the corridors are metal hinged panels behind which are wet risers containing a mix of steel, copper and plastic pipework, eye level windows through which to read individual gas meters and, in some instances, access to pre-pay gas meters

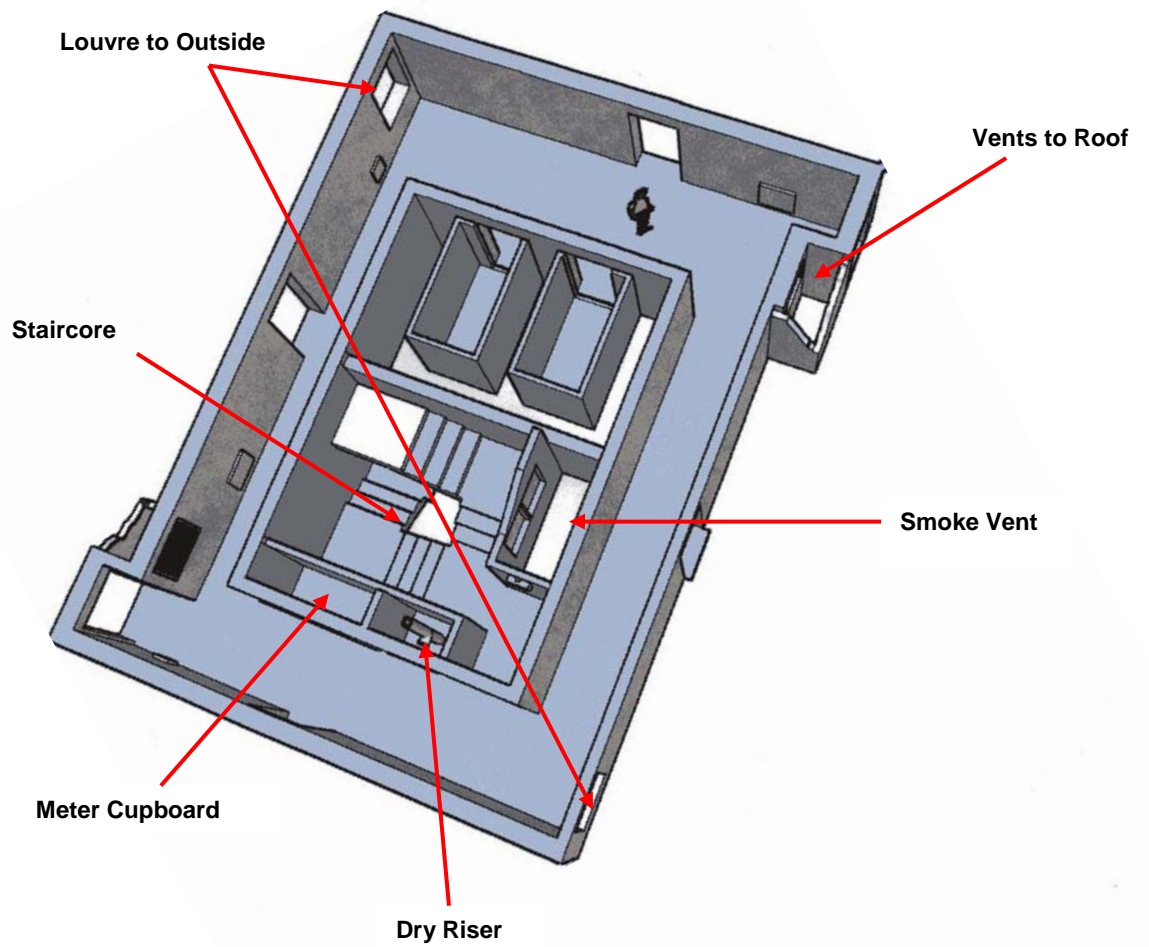
Beside the door to the stairs is a locked dry riser cupboard and, besides that, the electric cupboard containing the riser trunking, rifle boards, main fuses and electricity meters.

Within the central core, the staircase winds from ground floor level to the top at which there is a locked door leading to a small lobby and cat-ladder from which the tank room can be reached. A door from the tank room opens onto the flat roof on which are housed extract fans connected to ducting which penetrates the roof. A short steel staircase leads up from the roof to the locked door of the lift motor room.

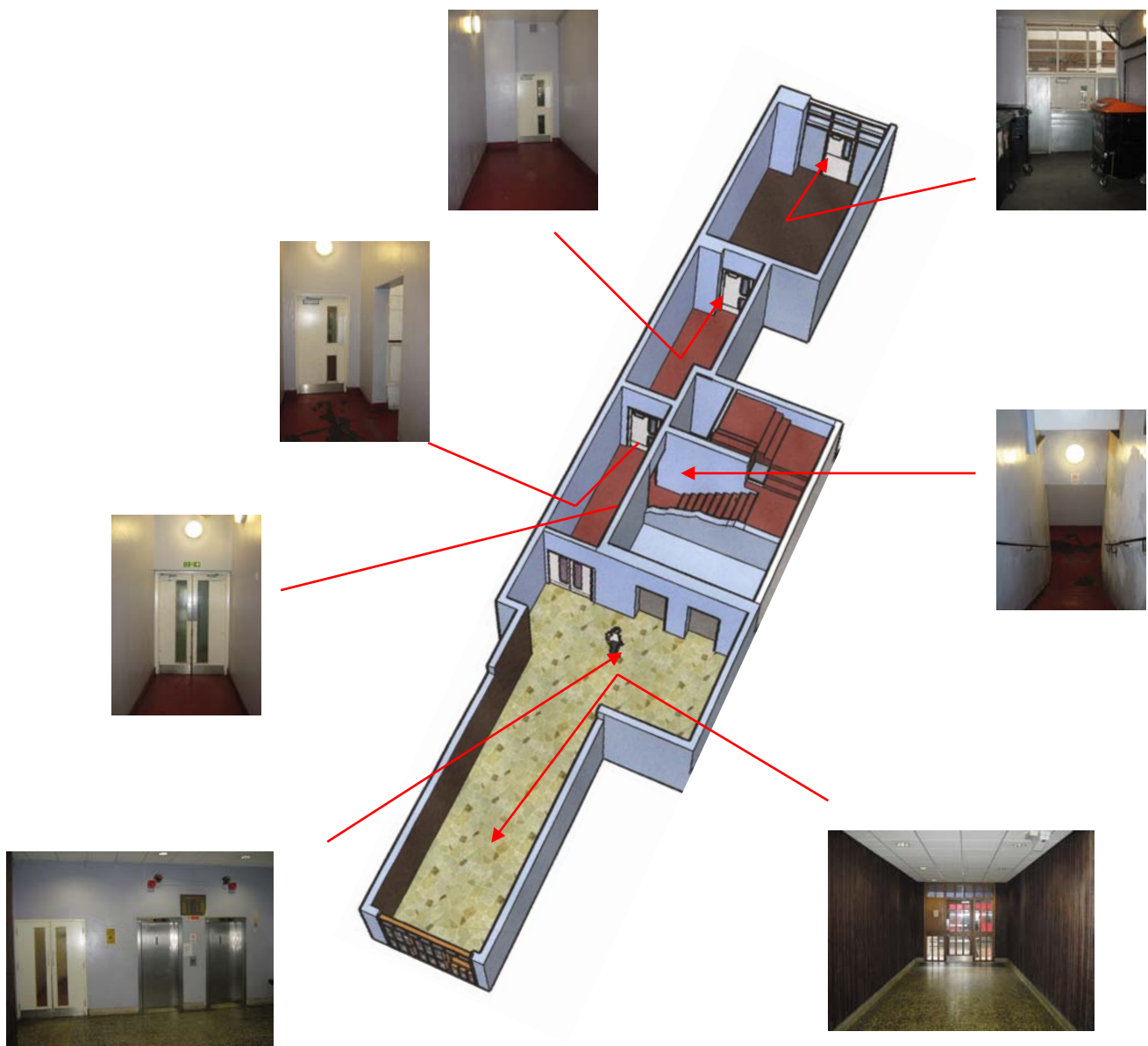
Adjacent to the internal stairs is an empty vent riser shaft with steel plate shutters opening onto the staircore at each floor level.

The layout of the central cores, the ground floor lift lobbies and corridors to rear exits are shown on the following pages

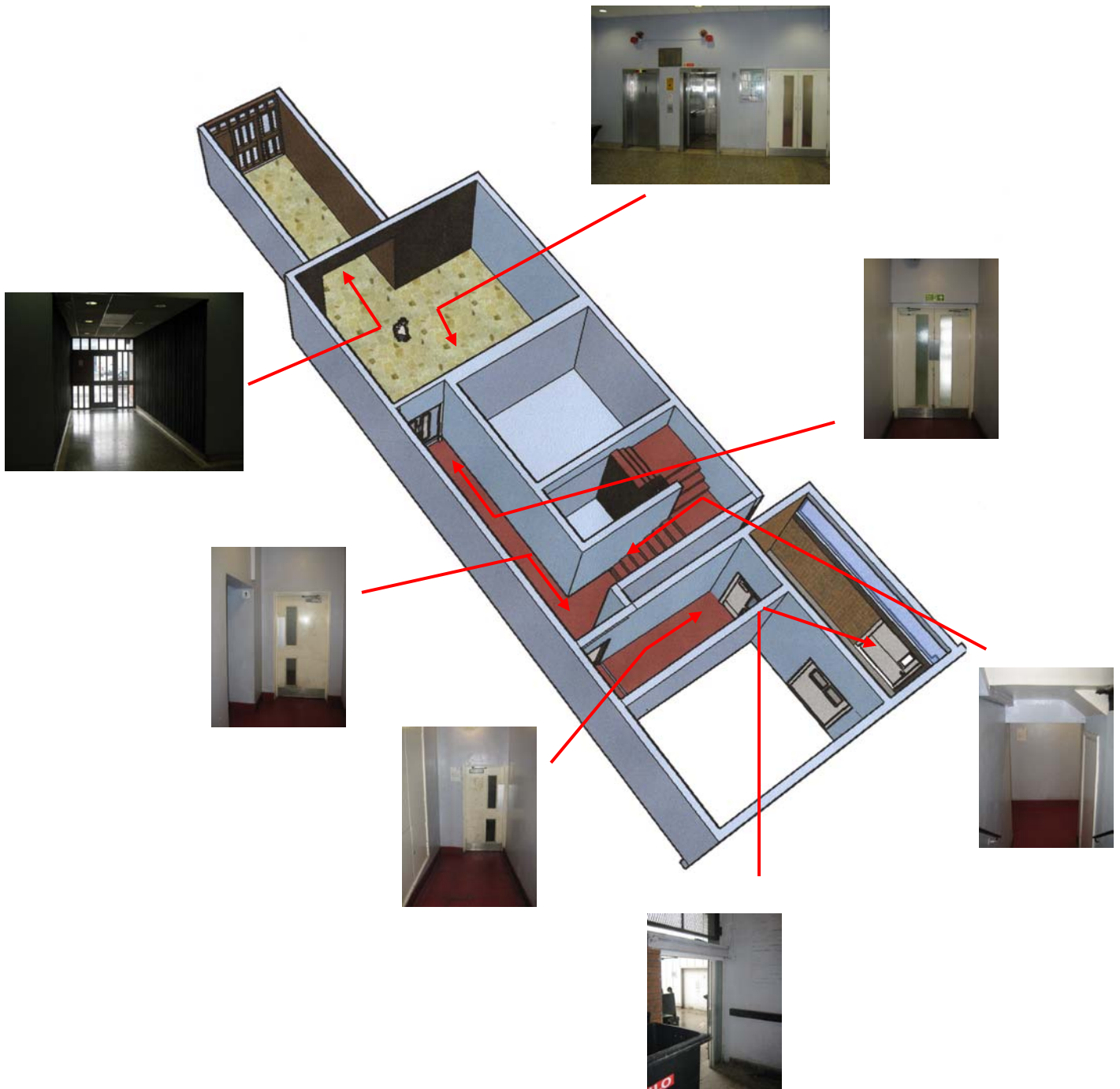
Central Core Area



Shepherds Court Lobby and Rear Exit



Bush Court Lobby and Rear Exit



6 Assumed Design Performance of the Buildings in a Fire

The buildings were constructed in the 1970s and there are no Operating and Maintenance Manuals to refer to. The theory which follows, therefore, is based on many hours of investigation, measurement and observation together with some assumptions necessarily made about sealed spaces which could not be accessed under the remit of this report.

The towers are a concrete frame construction with concrete floors and plastered concrete or brick panel walls - ostensibly a relatively small fire risk in itself. Each of the six flats at each floor level is notionally a self-contained fire enclosure separated from the rest of the building by being fitted with a fire rated entry door.

It is acknowledged that the most likely location for a fire to start accidentally is within a flat. Should this occur, the resident is expected to leave quickly, closing the front door to the flat on exiting. The fire should then be contained within the flat for 30 minutes thus giving the firefighters time to arrive and extinguish the blaze before other residents are endangered.

Smoke from the fire will be contained within the flat or will vent to the outside through the windows.

In the less likely event of a fire starting accidentally in the lobby corridors, residents are expected to remain in their flats and await rescue. It will be anticipated that the fire cannot readily break out of the lobby, being contained by fire doors to the flats and to the escape stairs. In the absence of combustible materials a fire in a lobby should not rapidly spread.

Hot smoke generated by a fire in a lobby will rise and be vented through the high level internal louvre and rise through the vent shaft, exiting at roof level through another fixed louvre. Fresh air will be drawn into the lobby via the translucent louvre fitted in the external wall.

The stairs are of concrete construction and the balustrading of steel. Without other materials being present there is little in the staircore that will support combustion. If, however, a fire does start in the stairwell it should be contained by the fire doors which open onto the lobby at each level. Hot smoke from the fire will rise and vent through a louvre located at Level 19 into the Smoke Vent shaft situated alongside the stairs. This smoke vent shaft has, at its base, a large intake louvre through the wall above the outside yard and exits at roof level via another fixed louvre, thus creating a chimney effect for hot gases. Additionally, this vent shaft is connected to the staircore at Level 1 by a large louvre.

Ventilation into the stairs to encourage smoke dissipation can be regulated by opening one or more of the large shutters which are located at each floor level between the stair shaft and the vent shaft.

7 Possible Actual Performance of the Building in a Fire

The scenarios postulated above take no account of atmospheric conditions which could affect the way that the louvred vents function, the presence of poorly protected riser ducts running vertically through the building and the present condition of uncertified fire doors originally fitted some 35 years ago.

The entry doors to the flats are of 44mm thick timber. They have door closers fitted but there is generally no evidence of intumescent seals or brushes and many have penetrations for locks, letter boxes and peepholes. It is suggested that few of these doorsets, if tested, would provide the 30 minutes fire protection assumed in considering the fire risks.

The possibility for a fire once established and smoke to quickly penetrate the self-contained compartmentation must be considered. This has serious implications for Residents who might be using their flat to shelter from a fire elsewhere in the building, and for Residents who are using escape routes which are adjacent to a flat in which a fire is supposedly contained.

Whilst it is unlikely that a fire will break out accidentally in a lobby or on the escape stairs, statistics released by the ODPM in 2006 indicate that over 2,100 serious deliberately set fires, resulting in two deaths and 55 injuries, occur every week. In premises used for sleeping accommodation it is estimated that 24% of all fires are deliberately set. All premises can be targeted either deliberately or just because they offer easy access. Despite the presence of surveillance cameras and a door entry system the possibility of a fire being started by arson should not be discounted.

Other vulnerabilities are caused by the presence of the riser ducts running vertically through the building. The permanently open louvres in the lobbies will permit smoke to vent and fresh air to be drawn in. This beneficial effect could be impaired by particular atmospheric conditions, such as wind or dense fog that might cause back draughts which could allow the smoke to transfer through the riser shaft from one floor and out into another. There is currently no mechanism in place for preventing this.



The external, translucent, louvres are of plastic construction. The plastic will melt, and may burn, in a fire. Adjacent to the louvres are windows to flats. These windows are centre-pivoted and open fully, and some contain extract vents. A fire in a lobby could thus spread via the louvre and adjacent window into a flat.

It is believed that the wet riser shafts also serve as extract ducts for the bathrooms of the flats. These vents in the bathrooms open directly into the shafts without benefit of fire protection. This could permit the passage of smoke from one flat to another or, depending on the efficiency of the riser cupboard doors, smoke from a fire in a lobby to enter flats at any level, particularly if the power supply to the extract fans is interrupted.

The doors between the individual floor lobbies and the staircore are intended to provide protection and a minimum of 30 minutes fire resistance. This report highlights the observed door defects and questions whether some of the doors could provide more than just a few minutes of retardation to spread of fire and smoke.

The usefulness of the smoke ventilation shaft adjacent to the stairs raises some concerns as it is clear from the fastenings to the shutters which separate the stairs from the vent shaft that they will not be opened quickly. Some are padlocked shut whilst others have bolted-together steel angles welded to the shutters. It is believed that the Georgian wired glass windows installed in Woodford and Roseford Courts may not be as effective in preventing spread of fire and smoke between staircore and vent shaft, but they do, at least, allow firefighters to see whether there is smoke within the vent before opening the windows.

8 Conclusion

Implementing the Recommendations which follow will rectify the faults and failures which have caused the hazards identified in the original Risk Assessment of May 2007, but it is apparent from the foregoing that this may not be sufficient to ensure the safety of Residents or protect them from the effects of a fire breaking out within a private or shared area of the building.

Additional assessment of the risks and hazards peculiar to this particular form of construction should be undertaken to allow adequate measures to be put in place to ensure, as far as is reasonably practicable, the safety of Residents.

9 Hazards Identified in the Risk Assessment of May 2007 & Recommendations of September 2009

Item	Hazard	Controls Required	Recommendation
	HIGH RISK		
1	Waste in Bins Under Base of Building	Reposition & Secure Bins. Improve Housekeeping	Refer to Recommendation 1
2a	No Fire Detection or Alarms	Consider Fitting Fire Detection & Alarms	Refer to Recommendation 2a
2 b	Belongings, Plants & Waste in Communal Areas. Smoking in Communal Areas	Discuss with residents the fire related implications of using the communal areas as a dumping ground for their unwanted items and waste	Refer to Recommendation 2b
3	Store Areas on Ground Floor Filled with Waste	Introduce Cleaning & Housekeeping Regimes	Refer to Recommendation 3
4	No Fire Action Signs on Landings, Stairs & Roof	Provide Signage	Refer to Recommendation 4
5	Evidence of Burning of one Panel in Electrical Intake Area	Have Panel Checked	Refer to Recommendation 5
	MEDIUM RISK		
6	Service Hatches on Landings Insecure	Secure All Hatches	Refer to Recommendation 6
7	Electric Meter Cupboards	Unlocked and Unsafe	Subject of separate Report
8a	No Signs Outside of Lift Not To Use In Fire Situation	Provide Emergency Procedures Signage Outside Lift	Refer to Recommendation 8a & b
8b	No Emergency Procedures Signage Inside Lift	Provide Emergency Procedures Signage Inside Lift	Refer to Recommendation 8a & 8b
8c	Maintenance of Lift	Ensure Regular Maintenance is carried out	Refer to Recommendation 8c
8d	Fire Detection in Liftshaft	Consider Fire Detection in Lift or Shaft	Refer to Recommendation 8d
9a	Wet Risers – Record of Safety Checks	Initiate Regime of Safety Checks and Maintain Records	Refer to Recommendation 6
9b	Some Doors to Wet Risers Found Damaged / Unlocked	Ensure All Riser Doors are Repaired & Locked	Refer to Recommendation 6
10	Lightning Protection on Roof	Ensure That Lightning Protection is Suitably Fitted and Regularly Checked	Refer to Recommendation 10
11a	No Instructions on Fire Doors to Keep Closed	Incorporate Standard Signage Regime	Refer to Recommendation 4
11b	No Signs on Exterior of Final Exit Doors “Fire Escape Keep Clear”	Incorporate Standard Signage Regime	Refer to Recommendation 4
12	Are all Flats fitted with Fire Detection?	Contact LFB for Home Fire Safety Checks	Refer to Recommendation 12

13	No Controls in place for Contractors Working in Building	Contractors to Receive Fire Safety Training	Refer to Recommendation 13
14	Fire Doors Throughout Building not Checked or Maintained	Ensure Doors are Upgraded and Initiate Checking Regime	Refer to Recommendation 14
15	Concierge and Caretaker not provided with Fire Safety Training	Ensure that Responsible Staff are Trained	Refer to Recommendation 15
16	Emergency Lighting Possibly not Compliant	Identify if Emergency Lighting Complies with BS 5266 and is maintained and Tested in Accordance with FSOG 2005	Refer to Recommendation 16
17	Fire Extinguisher in Un-Accessible Store/Roof Areas	Ensure all Fire Fighting Equipment is Receiving Regular Safety Checks	Refer to Recommendation 17
18	Waste has been Stacked up against Electrical Substation at Rear of Building	Improve Housekeeping in this Area	Refer to Recommendation 1
19	Gas Pipes found in Landing Suggesting Gas is In Use in the Building	Consider fitting Gas Detection	Refer to Recommendation 19
	LOW RISK		
21	Have Residents Been Provided With Safety Literature	Free Leaflets Available	Refer to Recommendation 21
22	No Fire Log Book in Place or Records of Maintenance of Fire Safety Equipment	Fire Related Log Books and Maintenance Records Must be Maintained	Refer to Recommendation 22
23	A Few Lights Found to be Not Working	Set Up a Regular Inspection Regime	Refer to Recommendation 23
24	No Evidence if Fire Detectors in Flats are Council Supplied	Fire Detectors to Be Checked and Maintained	Refer to Recommendation 12
25	No Plans within building showing where safety equipment is located and emergency light fitted	Provide plans	Refer to Recommendation 25
26	Lift Motor Room – Not checked but Probably no fire detection and rubbish on roof	Provide Fire detection and remove rubbish	Refer to Recommendation 26

Note that the numbering of the Fire Hazards in the above Table complies with that of the original May 2007 Risk Assessment for Shepherds Court . The hazards identified at Bush Court are almost identical.

The numbering of the hazards in the original Risk Assessment omitted Number 20. There is, therefore, intentionally no Hazard No 20 in the Table above.

10 Recommendations

Recommendation 1

The recommendation of the May 2007 Risk Assessment was:

"Ideally, all waste bins should be re-positioned and secured away from the building structure.

Housekeeping needs to be improved at the back of the fire escape route that leads onto the waste area for the shops.

Waste issues at the rear of the shops also needs to be addressed so there is safe access for the residents at all times."

The conditions at the back fire escape in October 2009 were found to be little changed from those described in May 2007. There is still a considerable quantity of flammable waste close to the rear exit doors and the route to a place of safety is not clear, as is evident in the photographs below:



The Recommendation is to clear all of the bins and waste from around the exit doors and discuss with Residents the fire related implications of leaving waste in the vicinity of the escape routes. Caretaker or Concierge should ensure that other users of the Service Yard leave escape routes free for Residents.

Recommendation 2a

The recommendation of the May 2007 Risk Assessment was to:

“Consider fitting fire detection in all high risk areas in the building. The suggested standards for automatic fire detection in housing in multiple occupation is Grade A LD2 in common areas.

Call points and audible alarms should be fitted at all levels throughout the building to provide early warning of fire to residents All fire alarms should be fitted to BS 5839.”

In support of this recommendation, extracts from The Guide are reproduced below:

2.2 Automatic fire detection

Most premises providing sleeping accommodation will need automatic fire detection, which actuates the fire warning systems. Automatic fire detection provides the means to know that you have a fire at the earliest possible time. It offers you the possibility of carrying out firefighting (because the fire is still small) and the maximum period of time to implement your emergency plan and to evacuate residents, staff or any other relevant persons. The system can be linked to other active fire safety systems in your building (e.g. door closing devices and smoke control vents) so that they operate automatically. Automatic fire detection is usually needed in the following circumstances:

- for alerting people who are sleeping;
- if you have areas where people are isolated or remote and could become trapped by a fire because they are unaware of its development, such as lone workers;
- if you have areas where a fire can develop unobserved (e.g. storerooms);
- as a compensating feature, e.g. for inadequate structural fire protection, in dead ends or where there are extended travel distances;
- where smoke control and ventilation systems are controlled by the automatic fire-detection system;
- areas of high risk, e.g. boiler rooms, kitchens;
- other areas such as, high risk unoccupied areas, storage areas and walk in cupboards, large rooms, access rooms to sleeping accommodation, areas or buildings served by a single stairway; and
- to reduce the effects of arson.

The precise design and scope of the system required will be subject to the findings of your risk assessment, advice from system designers and guidance from appropriate standards. Table 1 gives guidance on suggested categories/grades of system for typical types of premises. It must be emphasised that this table can only provide the starting point for assessing the level of fire detection and warning system necessary.

Table 1: Suggested standard of automatic fire detection.

Type of premises	Category/Grade of system Notes
Hotels, motels, hostels, large bed and breakfast and boarding house type accommodation. Note 1	L2
School and student residencies. Family group homes, (especially refuges for vulnerable groups).	L2 or L3
Sheltered accommodation.	L2 in common areas Note 2
Houses in multiple occupation of more than two storey's (more than one floor above ground) or any floor greater than 200m ² Flats and conversions (including holiday flats) that have not been constructed to building regulation standards.	Grade A LD2 in common areas Note 3
Houses in multiple occupation and small premises, e.g. bed and breakfast of up to two storey's (up to one floor above ground) with no floor greater than 200m ² ..	Grade D LD2 or 3Note 3
Flats and maisonettes constructed to current building regulation standards (common areas).	Note 4

Key

L2 automatic fire detection system with detectors sited in escape routes (including rooms that open on to escape routes) and rooms or areas of high fire risk to occupants, detailed in BS 5839-1¹⁶

L3 automatic fire detection system with detectors sited in escape routes (including rooms that open on to escape routes), detailed in BS 5839-1¹⁶

Grade A LD2 an automatic fire detection system (designed for dwellings and based on a BS 5839-1¹⁶ system) with detectors sited in escape routes (including rooms that open on to escape routes) and in rooms or areas that present a high fire risk to occupants, detailed in BS 5839-6⁹⁰

Grade D LD2 an automatic fire detection system (designed for dwellings) based on interconnected mains powered smoke alarms (with battery back-up) with detectors sited in escape routes (including rooms that open on to escape routes) and in rooms or areas that present a high fire risk to occupants, detailed in BS 5839-6⁹⁰

Grade D LD3 an automatic fire detection system (designed for dwellings) based on interconnected mains powered smoke alarms (with battery back-up) with detectors sited in escape routes (including rooms that open on to escape routes), detailed in BS 5839-6⁹⁰

Note 1:

In the case of single self contained chalet type accommodation a Grade D LD2 or 3 system may be appropriate.

Note 2:

An individual private dwelling in sheltered accommodation should have a Grade C LD 2 or 3 system but this need not be connected to the system that covers the common areas. Where the occupants are mobility impaired to a degree that they would be at high risk in the event of fire; or they suffer from a disability (e.g. speech impairment) that would preclude communication with the fire and rescue service, provision of facilities for the automatic transmission of the fire alarm signal to the fire and rescue service should be considered.

Note 3:

An individual private dwelling should have a Grade D LD2 or 3 system but this need not be interconnected with the system that covers the common areas of the building.

Note 4:

Flats and maisonettes constructed to current building regulations will not require automatic fire detection in common areas. However, self-contained smoke alarms will normally be fitted within each accommodation unit.

Note 5:

The outcome of your risk assessment will determine the necessary standard of AFD required, e.g. in some cases, a BS5839-116 Category L1 system may be appropriate.

Additionally, extracts from BS 5939-1:2002+A2:2008 are reproduced below:

8.1.2 Protection of life

If the objective is to protect the occupants of a building in which no one sleeps, and fire is likely to be detected by people before smoke seriously reduces visibility in escape routes, automatic fire detection might not be necessary: a Category M system might suffice. Whether there is a need for automatic fire detection and, if so, the extent to which it needs to be provided will often be determined by a fire risk assessment carried out on behalf of the user; such a fire risk assessment might be required by legislation.

If there is significant probability that a fire in the building, or part of the building, could threaten escape by occupants before it is detected by people in the building, a Category M system is unlikely to be adequate, and the provision of automatic fire detection will be necessary. This could arise from the likelihood of the presence of occupants at special risk (including sleeping occupants), inadequate structural fire protection or the probability of very rapid fire development.

In some buildings, a fire risk assessment might determine that unacceptable risk to occupants can be reduced by the installation of fire detectors in only selected rooms or areas in the building. A Category L5 system might then be suitable, but it will be necessary for the purchaser or user to inform the designer of rooms or areas that are to be protected [see 5.2d)]. A Category L5 system may form part of a fire engineering solution, in which automatic fire detection is just one component of the solution.

If there is a need for a reliable means of warning of the presence of smoke in escape routes, a Category L4 system, in which smoke detectors are installed in escape routes, such as corridors and stairways, may be appropriate. For example, this can arise from the presence of lone workers in a large, generally unoccupied area of a building in which the fire hazard level is assessed to be relatively high.

In buildings in which people sleep within rooms accessed by corridors, other than short lengths of corridor, research has shown that passage of hot fire gases through a door crack can produce smoke sufficiently dense and cool for a corridor to become smoke-logged before adequate warning can be given by detectors in the corridor. In this case, a Category L3 system, in which detectors are installed in rooms that open onto the escape routes, as well as within the escape routes themselves, is likely to be appropriate. The purpose of the detectors in these rooms is to give an early enough warning to occupants, other than, possibly, the person in the room of fire origin, such that they have adequate time to escape before their escape route is impassable as a result of smoke. Accordingly, within the rooms, the use of one or more of the following types of detectors is satisfactory: heat, smoke, combustion gas or multi-sensor detectors.

In some circumstances, even a Category L3 system might not be sufficient to achieve the life safety objective. A fire risk assessment might determine that, in addition to the protection afforded by a Category L3 system, fire detectors need to be installed in rooms or areas that would not be protected in a Category L3 system. The resulting system would then be a Category L2 system. A Category L2 system would be appropriate if a risk assessment determines that the fire risk associated with rooms other than those opening onto escape routes is unacceptable. Alternatively, there might be a need to give enhanced early warning to occupants of certain rooms, such as disabled people, of a fire in their own room. In this case, smoke or combustion gas detectors within the rooms in question are necessary; heat detectors will not respond quickly enough

- a) In Category L3 and L4 systems, smoke detectors, or a mixture of smoke and combustion gas detectors, should be provided in the following:
- all escape stairways;
 - all corridors;
 - any other areas that form part of the common escape routes.

NOTE 3 Main access and egress stairways normally form part of escape routes, and should be treated as escape stairways.

19.1 Commentary

In simple buildings of limited size, a single stage fire alarm arrangement is likely to be sufficient. In such a system, on operation of any manual call point or automatic fire detector, a single, common fire alarm signal is given throughout the premises as a signal to all occupants to evacuate immediately (i.e. there is a "single phase" evacuation).

In certain large and/or high rise buildings, a staged fire alarm arrangement might be more appropriate. In a staged fire alarm system, the initial warning of fire is given in a restricted area, or is restricted to key personnel, but can be extended in further stages to warn, ultimately, all occupants of the premises. The arrangement might apply regardless of whether the alarm is triggered by a manual call point or an automatic fire detector, or it might apply only to alarm signals triggered by automatic fire detectors. There are various circumstances in which a staged fire alarm arrangement may be appropriate. These include, but are not restricted to the following.

In certain large or high rise buildings, it might be desirable to evacuate first those areas closest to the fire and immediately above it; other areas are evacuated thereafter. A particular example of this arrangement, commonly used in high rise buildings, is known as phased evacuation; in this case, conventionally, the floor of fire origin, the floor immediately above (and, often, any below ground areas) are evacuated as a first phase. Thereafter, each subsequent phase involves evacuation of two floors at a time, until all floors are evacuated in a number of such phases. This arrangement enables the number and/or widths of stairways to be reduced; under these circumstances, it is important that no control is provided to evacuate the entire building in a single phase, as there will be insufficient stairway capacity for simultaneous evacuation of all occupants.

Given that the only means of escape from the building is via the single stair, poorly protected from ingress of smoke and fire, via corridors which are themselves poorly protected against the spread of fire and smoke from a burning flat, the Recommendation is that consideration should be given to fitting fire detection in all high risk areas in the building.

Recommendation 2b

The recommendation of the May 2007 Risk Assessment was to:

"Discuss with residents the fire related implications of using the communal areas as a dumping ground for their unwanted items and waste."

In support of this recommendation, highlighted extracts from The Guide are reproduced below:

Management of escape routes

It is essential that escape routes, and the means provided to ensure they are used safely, are managed and maintained to ensure that they remain usable and available at all times when the premises are occupied. Tell employees in staff training sessions about the escape routes within the premises.

Corridors and stairways that form part of escape routes should be kept clear and hazard free at all times. Items that may be a source of fuel or pose an ignition risk should not normally be located on any corridor or stairway that will be used as an escape route.

There was very little evidence of escapes routes being blocked; sample photographs of the condition of Escape Routes are shown below:



The Recommendation is to discuss with residents the fire related implications of using the communal areas as a dumping ground for their unwanted items and waste

Recommendation 3

The recommendation of the May 2007 Risk Assessment was to:

"Introduce cleaning and housekeeping regimes in all stores and areas that need to be accessed by staff / contractors.

Improve contractor controls to ensure that all work carried out by them is checked before they leave site to ensure they have left the workplace in a safe condition."

In support of this recommendation, extracts from The Guide are reproduced below:

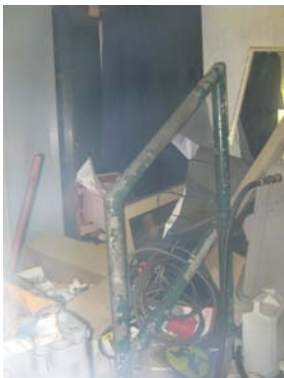
1.4 Storage

If your premises have inadequate or poorly managed storage areas then the risk of fire is likely to be increased the more combustible materials you store the greater the source of fuel for a fire. Poorly arranged storage could prevent equipment such as sprinklers working effectively.

Combustible materials are not just those generally regarded as highly combustible, such as polystyrene, but all materials that will readily catch fire, e.g. cleaning rags or artificial flower displays. However, by carefully considering the type of material, the quantities kept and the storage arrangements, the risks can be significantly reduced.

At the time of this survey there were no contractors working in the two buildings. There should, however, be a system of checking of contractors' works when they have been into a building to ensure that it has been left in a fit and suitable condition.

The Caretaker's Store does have an excess of flammable materials untidily stored and would benefit from the introduction of improved housekeeping. Photographs of the store are below:



The recommendation is to implement a regime of improved housekeeping to ensure that the condition of the Stores does not present a fire hazard.

It is also recommended to formalise a system of checking contractors' works prior to them leaving site to ensure that the workmanlike standards have been achieved and that the building is being left in a safe and tidy condition.

Recommendation 4

The recommendation of the May 2007 Risk Assessment was to:

“Incorporate a standard sign regime with consistent signs throughout the building conforming to BS 5499 Part 4 2000. You may consider the types of signs that are vandal proof.”

It is clear from observation that there is a major shortage of fire action signs within and outside of the buildings. This applies to:

- . fire doors which have no instruction to keep closed or locked
- . the outside of fire escape doors advising that they must be kept clear
- . escape corridors which do not have the route to an exit signed
- . the staircases which do not have adequate signage for the route to the exit
- . the access to the Amenity Deck which does not have the escape route signed.

The recommendation is to provide a regime of consistent signage complying with BS 5499 Part 4 throughout the building.

A schedule detailing the type, quantity and location of signs to be provided is to be found in the Schedules of Works section of this report.

Recommendation 5

The recommendation of the May 2007 Risk Assessment was to:

"Have the burnt panel checked out and have the fire extinguisher serviced."

Whilst approval has not yet been given to undertake a thorough examination of the Electrical Intake Room installation by a Building Services Engineer it is anticipated from examination of Intake Rooms in Woodford and Roseford Courts that some measure of rectification will be required.

Furthermore, it is notable that none of the fire extinguishers found during this survey had evidence of having been serviced within the last year, and one was empty.

The Recommendation is to have all of the Electrical Intake Rooms examined by a Building Services Engineer and carry out remedial actions as suggested by him. Initiate procedures for ensuring that fire extinguishers are annually serviced and then regularly checked to ensure that they are still present and fully able to function.

Recommendation 6

The recommendation of the May 2007 Risk Assessment was

to: *"Secure all inspection hatches on the landings."*

There are typically 12 inspection hatches on the landing; six small Georgian wired windows secured by metal hatches to view the gas meters and the other six somewhat larger hatches open onto wet risers and stop valves.

Due to the possible presence of asbestos in the risers, and thus to prevent access, timber covers have been screwed over the metal access hatches. Because of the timber covers it has not been possible to establish the condition of most of the access hatches to the risers. However, where there were a few loose timber covers it appeared that the metal hatches were not locked shut and it is surmised that many could be in this condition. The fire protection, therefore, is being provided by timber board which should be replaced with a fire resistant material.

Photographs of some of the timber covers are shown below:



Some of the gas meter viewing windows have been broken and a small number had missing metal hatch covers. Where the glass was missing, many of the openings had been stuffed with paper to create a seal. All of the hatches have been overpainted and thus the hinges and, particularly, the locks function badly; there were also some missing locks.

Examples of damaged or missing gas meter viewing windows are shown below::



It is believed that the passive bathroom vents from some flats opens onto the riser shaft. There are large extract fans on the roof which appear to draw air through the riser shafts from 1st Floor level through to the roof. This would indicate that the bathrooms have a permanent extract system running. This appears to be corroborated by one resident who stated that smells occasionally do come into the bathroom via the vent. It is surmised that when a hatch is left open by contractors working on the risers the extract fan simply draws air through the open hatch thus not extracting from bathrooms below the level of the open hatch and hence allowing smells to be transferred from one flat to another.

The presence of these bathroom vents and the interconnecting riser gives rise to some concerns regarding the integrity of the vertical fire compartmentation. Clearly, there is a route for the spread of smoke vertically and, particularly if the fans should stop running, horizontally into the flats.

The Recommendation is to replace the broken Georgian wired glass windows and metal cover doors to the gas inspection windows, to replace missing or damaged locks and to make good all those that are not functioning due to the build up of paint.

Ascertain whether the wet riser shafts are indeed serving a dual role and are providing a forced extract route for air vented from bathrooms. If this is the case consideration should be given to possibly fitting an intumescent transfer grille between bathroom and vent shaft, and possibly fire dampers within the shafts.

Keeping the metal hatch doors to the wet risers locked shut will help. If it is intended to keep these hatches permanently covered, consideration should be given to covering them with Supalux rather than timber board.

All hatches should be kept locked shut and regularly inspected

Recommendation 7

The recommendation of the May 2007 Risk Assessment was to:

“Advise tenants of the dangers of using these areas – all meter cupboards should be kept locked.”

Following the discovery in early September 2009 of exposed live electrical equipment and cabling within some of the meter cupboards, a full survey of all meter cupboards was undertaken and report was completed on 10th September 2009 with the strong recommendation that immediate action be taken to make safe certain cupboards in which there was believed to exist the real risk to Residents of sustaining a potentially fatal electric shock.

Other actions were recommended in that report to make all of the cupboards safe against both fire and electrical risks and to advise Residents of the dangers of leaving cupboards unlocked and using them for storage.

It does not appear that the recommendations have been followed and photographs, below, the first of each pair having been taken in early September 2009 and the second in early October 2009, illustrate the lack of improvement.



The Recommendation is to implement the Recommendations of the Meter Survey Report issued on the 10th September 2009 without delay in order to protect Residents both from fire hazards and electrical hazards.

Recommendation 8a and 8b

The recommendation of the May 2007 Risk Assessment was to:

“Provide emergency instructions inside and outside the lift.”

Proper emergency instructions have not yet been provided although there are signs warning not to use the lift in the event of a fire. These are in the Ground Floor lobbies – although the signs are somewhat overshadowed by other signs around them – and at each residential floor level. The signs are missing at the Amenity Deck level in both buildings.

There are no signs within the lifts advising what to do in the event of a fire.



The Recommendation is to incorporate emergency instructions as part of the wider signage upgrade recommended under Recommendation 4

Recommendation 8c

The recommendation of the May 2007 Risk Assessment was to:

“Ensure regular maintenance is carried out on the lift to BS 5655.”

It is understood that there is an existing contract in place with Thyssen Krupp for call out in the event of a problem with the lifts.

The recommendation is to ensure that the lift maintenance is carried out in accordance with the provisions of BS 5655 Part 10.1.3

Recommendation 8d

The recommendation of the May 2007 Risk Assessment was:

“As the lift shaft runs the full extent of the building fire detection should be considered in the lift shaft.”

In support of this recommendation, selected extracts from BS 9999 – 2008 Code of Practice for Fire Safety in the Design Management and Use of Buildings are reproduced below:

16.7.2 Fire protection of lift installations

Lift wells should either be contained within the enclosures of a protected stairway or be enclosed throughout their height with fire-resisting construction. A lift well connecting different compartments should form a protected shaft.

A corridor can be protected from lift shaft by means of sealing the lift doors with additional automatic fire/smoke doors or fire/smoke barriers, thus eliminating the need for a lobby.

In buildings designed for phased or progressive horizontal evacuation, where the lift well is not contained within the enclosures of a protected stairway, the lift entrance should be separated from the floor area on every storey by a protected lobby.

The question to be asked is whether the doors to the lift are adequate to consider the lift shaft to form a protected shaft. If not, options for improvement include upgrading the doors or constructing a fire lobby. Since this latter option is probably unworkable, a holistic approach to understanding and minimising the risks might conclude that the providing fire detection within the lift shaft may be an adequate response.

The Recommendation is therefore to seek further guidance and consider fire detection within the lift shaft.

Recommendation 10

The recommendation of the May 2007 Risk Assessment was to:

“Check that lightning protection has been suitably fitted on the high rise building and it is receiving the regulation safety checks.”

A check has been carried out by a reputable and experienced installer of lightning protection systems with the conclusion that the system fitted does not currently comply and has probably not received regulation safety checks.

However, the basic installed system is sound and suggestions have been made for bringing the standard of the installation up to BS6651:1999-2007 with minimal installation of additional tapes and connections to the building structure. Once this is done a certificate can be issued and the installation will then require annual testing.

A more onerous, and expensive, option would be to upgrade to latest standards.

Recommendation is to bring the standard up to comply with BS6651:1999-2007

Recommendation 12

The recommendation of the May 2007 Risk Assessment was that:

"If there are vulnerable, old and disabled within the building the London Fire Brigade offer Home Fire Safety Checks free of charge and the fitting of free fire detectors. LFB can be contacted on 08000 28 44 28."

There are certainly vulnerable, old and disabled within the building and fire safety checks on residents should be offered.

The recommendation is that, after suitable review of any additional fire safety measures to be undertaken and policies to be adopted, the residents are informed, advice offered, their cooperation sought and Home Fire Safety Checks carried out. The fitting of free fire detectors may be influenced by any decision made regarding provision of fire detection in communal areas.

Recommendation 13

The recommendation of the May 2007 Risk Assessment was that:

“Contractors must receive fire safety inductions and fire safety procedures for the building before commencing work and records retained with the fire log book.”

In support of this recommendation, highlighted extracts from The Guide are reproduced below.

1.9 Managing building work and alterations

Fires are more frequent when buildings are undergoing refurbishment or alteration.

You should ensure that, before any building work starts, you have reviewed the fire risk assessment and considered what additional dangers are likely to be introduced. You will need to evaluate the additional risks to people, particularly in those buildings that continue to be occupied. Lack of pre-planning can lead to haphazard co-ordination of fire safety measures.

You should liaise and exchange information with contractors who will also have a duty under the Construction (Health, Safety and Welfare) Regulations 1996^{11,12} to carry out a risk assessment and inform you of their significant findings and the preventive measures they may employ. This may be supported by the contractors' agreed work method statement. The designer should also have considered fire safety as part of the Construction (Design and Management) regulations 1994 (The CDM Regulations).⁵¹

You should continuously monitor the impact of the building work on the general fire safety precautions, such as the increased risk from quantities of combustible materials and accumulated waste and maintaining adequate means of escape. You should only allow the minimum materials necessary for the work in hand within or adjacent to your building.

Additional risks can include:

- hot work such as flame cutting, soldering, welding or including paint stripping;
- temporary electrical equipment;
- blocking of escape routes including external escape routes;
- introduction of combustibles into an escape route;
- loss of normal storage facilities;
- fire safety equipment, such as automatic fire-detection systems becoming affected
- fire-resisting partitions being breached or fire doors being wedged open (see Appendix B1 for information on fire-resisting separation); and
- additional personnel who may be unfamiliar with the premises.

Activities such as welding, flame cutting, use of blow lamps or portable grinding equipment can pose a serious fire hazard and need to be strictly controlled when carried out in areas near flammable materials. This can be done by having a written permit to work for the people involved (whether they are your staff or those of the contractor).

A permit to work is appropriate in situations of high hazard/risk and, for example, where there is a need to:

- ensure that there is a formal check confirming that a safe system of work is being followed;
- co-ordinate with other people or activities;
- provide time limits when it is safe to carry out the work;

- provide specialised personal protective equipment (such as breathing apparatus) or methods of communication; and
- check that contractors have a policy in place with respect to a smouldering fire. You should inspect areas before each night

Contractors working within the towers do face considerable logistical challenges and it is inevitable that there will be temporary propping open of fire doors and combustible materials temporarily partially blocking escape routes. This, provided it is managed, can be acceptable given that the addition of many able bodied workmen in the building can, in the event of an emergency, provide assistance to the residents.

The recommendation is that it is incumbent on the contractors' management to operate safe systems of work and ensure that risk assessments and method statements, understood by their operatives, are in place. All operatives must be inducted and must understand the rules for working within the towers. Toolbox talks to reinforce the message should also be undertaken. This would be appropriate for long-term contractors with a large workforce on site.

For minor, or short term works, it is recommended that a generic "Safe Procedures of Work" document is produced to cover fire safety issues specific to working within the Towers. All individual contractors working within the buildings should be given a copy of the procedures before starting work and should agree formally to be bound by these procedures. They should provide their own Risk Assessment and Method Statement before being allowed to proceed.

It has previously recommended (Recommendation 3) to formalise a system of checking contractors' works prior to them leaving site to ensure that the workmanlike standards have been achieved and that the building is being left in a safe and tidy condition.

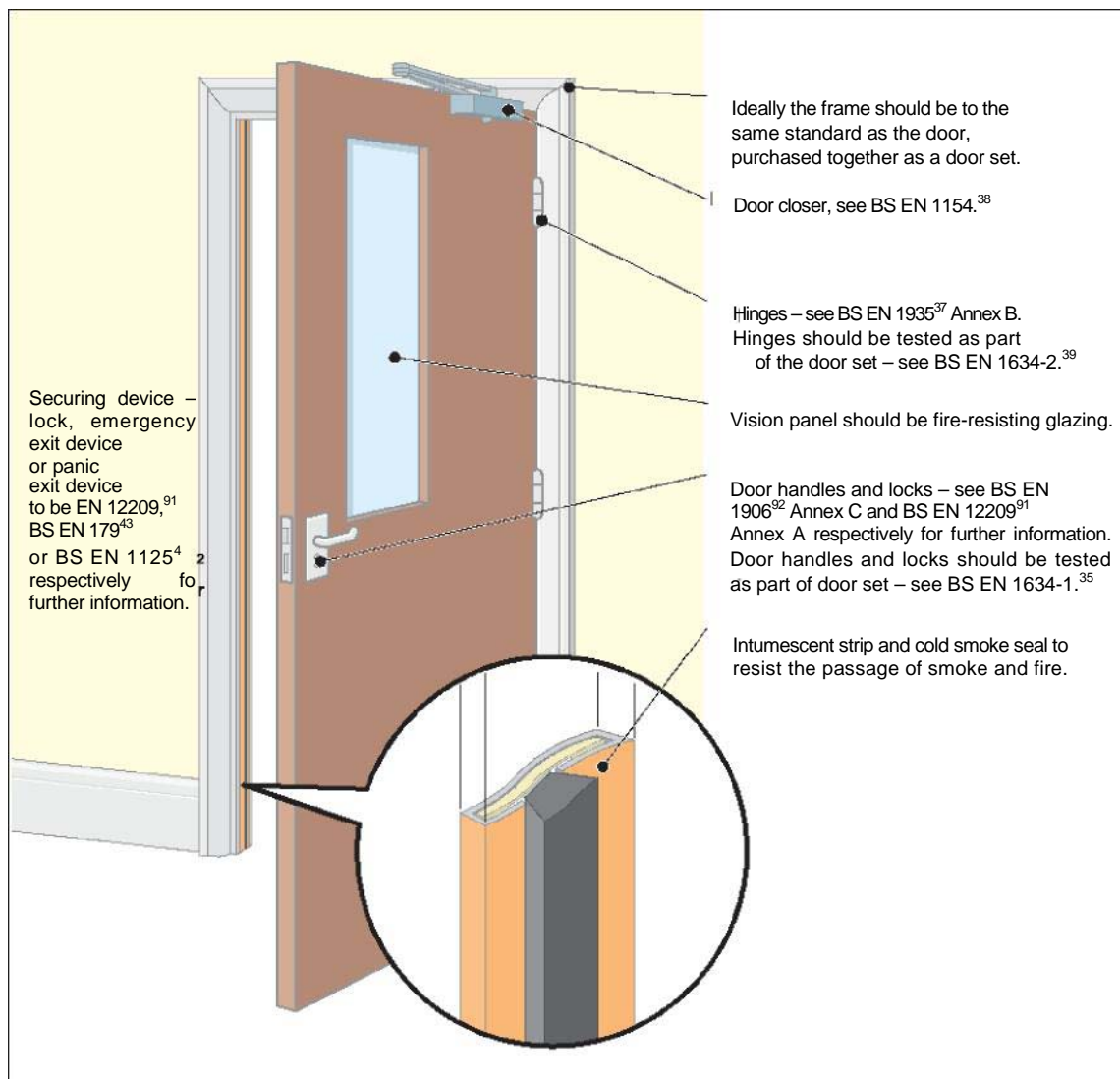
Since the greatest risk is from hot works, particularly in unoccupied flats and, most seriously, after the contractors have finished their working day, these works should only be carried out under a Hot Works Permit. Not only will this specify the works to be undertaken, the method of so doing and the precautions to be taken, it will ensure that the hot work is completed sufficiently early in the working day to ensure that a final inspection can be undertaken just prior to the contractors going home to confirm that there are no remaining hot spots or smouldering materials.

Recommendation 14

The recommendation of the May 2007 Risk Assessment was to:

“Ensure all fire doors received safety checks as described in the Fire Safety Order

2005.” Generally, a fire door should appear as shown below:



On inspection, the Escape Fire Doors between each level of corridor to the flats and the staircore could be FD30's due to their 44mm construction, but are clearly unmarked as Fire Doors. There are no 3rd party plugs or tamper proof labels and no face-fixed Fire Door signage. None of these white painted doors shows any kind of evidence of intumescent or smoke seals, in either the door leaf or the door frame. There could possibly be some intumescent contained under the door lipping, but nothing is obvious on sight. It is doubtful, therefore, whether the doors are fire doors.

The doors do have closers and vision panels. Generally, the condition of most of the doors is sound and some renovation and upgrading might be possible, provided that they can be readily removed from their hinges without causing damage to their structure.

Whilst this would not be the recommended course of action, a self adhesive smoke seal could be retrospectively fitted to the perimeter of the door frame, onto the door stop using Lorient UK's Batwing IS1212 seal. This would offer the residents protection from smoke across all of the temperature bands. This would require removal of the door, fixing the seal onto the doorframe, adjusting the door size and re-hanging it to ensure correct fitting with the seal.

Some of the doors have had face-fixed door closers installed to replace the original concealed closers. The large rebates in both door and frame which accommodated the original closers will need to be filled with hardwood inserts. Some closers have been face-fixed onto the wrong side of the doors and have impact damaged the adjacent wall.



Not all original closers have been removed, thus some doors have 2 closers attached.



The doors have a glazed vision panel at high level which is neither compliant with Part M of the Building Regulations nor with BS8300. To achieve compliance a second panel will be required at low level. Cutting an additional panel into the old door of doubtful provenance could further compromise its fire integrity.



Most of the existing glazed panels are of Georgian wired glass held in by timber beads. There is no evidence of any intumescent sealing around the glass. Some glass panels have clearly been replaced, and in one instance the Georgian wired glass has been replaced by a thin sheet of clear plastic.

Where original closers have been removed there are rebates in both the tops of doors and in the heads of doorframes. Some of these have been inexpertly filled, others left

and, in at least one instance, part of the door closer remains in the top of the door. In any renovation of the doors, these rebates will need to be made good.



In all, an upgrade of the doors will be laborious, will not provide a door and frame which can be certified and may not actually provide adequate resistance in the case of a fire.



Between the bottom of the stairs and the lift lobby is a set of double opening doors. These are in serviceable condition but it is unlikely that they will provide fire or smoke protection to the escape route. They can be upgraded by the fitting of smoke seals but, as with the lobby/stair doors; no guarantee of performance can be given. These doors should, therefore, also be considered for replacement by a new doorset.

On the escape route between the bottom of the stairs and the rear exits are single panel, single swing doors with double vision panels which similarly have no obvious fire or smoke retaining properties. These should be either upgraded as described above or, better still, replaced by fire rated and certified, complete doorsets.



The final exit fire door at Bush Court has a missing bottom glazing panel; this must be replaced to maintain protection against fire and smoke entering the building from the Bin Store and Service Yard

The glazing in the door to the Caretaker's Room/Store adjacent the rear exit is not fire rated. This should also be replaced to protect the escape route in the event of a fire starting within the Store.

Doors open from the staircase to a walkway which leads to the lift lobby serving the Amenity Deck. These doors, which open out from the staircore, are usually kept locked shut. The doors do not appear to currently offer protection to the escape stairs in the event of a fire and need to be upgraded.

Consideration should be given to the possible usefulness of these doors in the event of a fire; could they be used to escape onto the Amenity Deck, and thence to the other Court, if there is a fire at the bottom of the stairs thereby preventing flight to a place of safety or, could the walkway and door to the staircore offer safe escape from the Amenity Deck in the event of a fire starting there?



Presently the doors offer no such use in an emergency and do not prevent the passage of smoke or flames. When upgrading these doors, it would be useful to consider how their use could help Residents in the event of a fire and then fit the appropriate ironmongery, taking into account the best direction of door-opening, to facilitate their use.

There have been particular concerns expressed by fire safety advisors to Lorient UK who have looked at the overall layout of the towers and the fire protection measures provided. There is a suggestion that the doors to the stairs should be uprated to provide 60 or even 90 minutes protection combined with flat entry doors with 30 minute resistance, together with a fire detection and alarm system.

The recommendation is to replace the doors between lobby corridors and staircore with fully certified doorsets to minimum FD30s standard with smoke seals. The doorsets must include vision panels compliant with Part M of the Building Regulations and BS8300 and have door closers, compatible with the size of door and adjustable for speed of closing, fitted.

Additionally, all fire doors in escape corridors at Ground Floor level should be upgraded as noted above or replaced. Similarly, doors to Stores, Electrical Intake Rooms and to the Amenity Deck should be uprated or replaced.

It is recommended that the doors be ordered primed for on-site painting and that two small vision panels be provided rather than one large one. It is anticipated that this will offer the lowest long term lifecycle cost.

After new doors have been fitted a regime of regular checking and maintenance should be implemented.

Recommendation 15

The recommendation of the May 2007 Risk Assessment was to:

"Ensure all persons responsible for the building and staff are provided with the correct level of training at recommended intervals. All records of training need to be placed with the fire log book."

In support of this recommendation, extracts from The Guide are reproduced below:

4.4 Fire Safety Training

You must provide adequate fire safety training for your staff. The type of training should be based on the particular features of your premises including any ancillary accommodation and should:

- take account of the findings of the fire risk assessment;
- explain your emergency procedures;
- take account of the work activity and explain the duties and responsibilities of staff;
- take place during normal working hours and be repeated periodically where appropriate;
- be easily understandable by your staff and other people who may be present;
- address the roles of staff and others (guest, residents); and
- be tested by fire drills.

In simple premises, e.g. small hostel, this may be no more than showing new staff and long term residents the fire exits and giving basic training on what to do if there is a fire. In complex premises, such as hotels with a high staff turnover and shift patterns, the organisation of fire safety training will need to be more formal, e.g. by an induction course.

Your staff training should include the following:

- what to do on discovering a fire;
- how to raise the alarm and what happens then;
- what to do upon hearing the fire alarm;
- the procedures for alerting guest, residents and visitors including, where appropriate, directing them to exits;
- the arrangements for calling the fire and rescue service;
- the evacuation procedures for everyone to reach an assembly point at a place of total safety
- the location and, when appropriate, the use of firefighting equipment
- the location of escape routes, especially those not in regular use;
- how to open all emergency exit doors; the importance of keeping fire doors closed to prevent the spread of fire, heat and smoke;
- where appropriate, how to stop machines and processes and isolate power supplies in the event of a fire;
- the reason for not using lifts
- the safe use of and risks from storing or working with highly flammable and explosive substances; and
- the importance of general fire safety, which includes good housekeeping.

All the staff identified in your emergency plan that have a supervisory role if there is a fire (e.g. heads of department, fire marshals or wardens and, in complex premises, fire parties or teams), should be given details of your fire risk assessment and receive additional training.

The recommendation is to ensure that all persons responsible for the building are provided with the correct level of training at recommended intervals.

Recommendation 16

The recommendation of the May 2007 Risk Assessment was to:

"Identify if existing emergency lighting complies with BS 6266 requirements and ensure it is maintained and tested in accordance with Fire Safety Order Guidance 2005."

Whilst approval has not yet been given to undertake a thorough examination of the emergency lighting installation by a Building Services Engineer it is apparent that emergency lighting is fitted and, to an extent working.

There was a power failure during the survey of the building and emergency lights continued to illuminate the stair core and the two sections of escape corridor outside the lifts and outside the door to the stairs.

The other two legs of the corridor were not illuminated and it appears, from the physical differences between the luminaries fitted, that only two of the four lengths of escape corridor are fitted with emergency lighting.

At night, and with smoke in the building, the non illuminated sections of corridor would be very dark.

The recommendation is to inspect the existing system to see whether it complies with BS 6266 and is being regularly maintained and tested. Whether or not the system is within strict compliance, consideration should be given to ensuring that the whole length of the escape corridors are illuminated in the event of a fire emergency and loss of electrical power.

Recommendation 17

The recommendation of the May 2007 Risk Assessment was to:

“Ensure all fire fighting equipment is receiving regular safety checks to ensure it is in working order.”

During the current survey, fire extinguishers were noted in one of the rooftop Tank Rooms and both Lift Motor Rooms.:



All three extinguishers show no evidence of having been checked within the last year; the dates of last checking shown on the extinguishers being 19th June 2000, 2nd November 2005 and 6th March 2007.

Furthermore, the extinguisher in the Lift Motor Room in Shepherds Court appeared to be empty.



There are instruction signs for use of the carbon dioxide extinguishers on the walls in the vicinity of the extinguishers but one of these, in the Tank Room at Shepherds Court, has been mostly obscured by the later fitting of a mounting board for satellite receiving equipment.

The recommendation is to (as previously recommended in Recommendation 5) initiate procedures for ensuring that fire extinguishers are annually serviced and then regularly checked to ensure that they are still present and fully able to function.

Additionally, signs for instruction in their correct use should be prominently displayed adjacent to the fire extinguishers which need to be fixed on proprietary mounting brackets to the wall and not left standing on the floor.

Recommendation 19

The recommendation of the May 2007 Risk Assessment was that:

“Consideration should be given to fitting gas detection where gas is in use.”

During the May2007 Risk Assessment gas pipes were found on the landings of Shepherds Court “suggesting it is in use in the building”.

Gas is in use in Shepherds Court, as it is in all four towers on the estate. The difference at Shepherds Court is that weaknesses and dangerous corrosion of the originally installed system were recently discovered which resulted in the replacement of the distribution pipework within the building.

In order to carry out this work quickly, and with the least amount of disruption to Residents, the pipework was run through the lobbies and corridors rather than being buried within walls and risers.

Thus the gas pipework is on show – and possibly vulnerable to vandalism or arson - and less protected from the effects of a fire in a corridor.



The recommendation is to seek guidance from a Fire Engineer, or the LFB, as to the safety implications of having exposed gas pipework, albeit relatively new and installed in accordance with modern standards, in escape corridors and to follow whatever advice they give.

Recommendation 21

The recommendation of the May 2007 Risk Assessment was:

“www.firekills.gov.uk/highriseescape/02.htm - a free leaflet is available from this website”.

This fire safety literature is for residents in high rise accommodation and is predicated on the buildings being fully compliant with latest building regulations, built to modern standards and having high levels of conformity and maintenance.

These towers clearly do not have high levels of conformity and there are a number of issues surrounding both the overall design of the buildings, the fire protection measures provided and the level of maintenance.

Residents would be better served by being informed how they should individually react in the case of a fire breaking out. A fully fit and ambulant individual living on the third floor may be offered advice which differs to that given to an elderly person with impaired mobility living on an upper floor or to a single parent with very young children.

During the current survey, two Residents were asked how they would react in the event of a fire being discovered in their tower. They both, one young lady and an elderly gentleman in different courts and living at different levels, stated that they would get out as quickly as possible – the gentleman adding that, of course, he would use the stairs and not the lift.

The recommendation is to provide fire safety education and advice to residents appropriate to their situation and location within the building and to bring the building to a standard by which generic fire safety advice will be applicable to all residents.

Recommendation 22

The recommendation of the May 2007 Risk Assessment was that:

“All fire related records must be placed with the fire log book that must remain on site”

Examples of a Fire Safety Maintenance Checklist and a Form for Recording Significant Findings are appended in the Guide. Checklists for Operation and Maintenance of Fire Doors are also readily available. These, together with records of testing and maintenance of other fire safety systems and equipment should be kept centrally for update and inspection.

If some of the simple checks on the Fire Safety Maintenance Checklist had been carried out, many of the current deficiencies would have been reported and corrected.

The recommendation is to compile a schedule of all appropriate tests and inspections that need to be carried out, and records that must be kept, and ensure that compliance with this is agreed to be the personal responsibility of one or more named, competent individuals

Recommendation 23

The recommendation of the May 2007 Risk Assessment was to:

“Set up a regime where all lights are regularly checked and replace where necessary.”

During the survey for this report, a few lights were found to be not working. These tended to be in the less accessible parts of the buildings such as Tank Rooms and at the top of the stairs by the access to the roof.

No defective lights were discovered within the communal areas of the upper levels.

The recommendation is to replace all currently defective lamps and ensure that when daily and weekly fire safety checks are being carried out that note is also made of lights which are not working such that they may be repaired or replaced without delay.

Recommendation 25

The recommendation of the May 2007 Risk Assessment was that:

“Plans should be in place to aid fire management of the building.”

The hazard identified is that there are no plans of the buildings identifying where fire safety equipment and emergency lighting is fitted. In view of the fact that very little fire safety equipment is provided – an occasional fire extinguisher in the roof top tank room, electric intake room and lift motor room – a plan showing the location would not greatly aid fire management of the building.

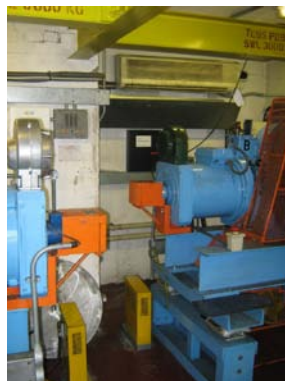
The recommendation is to incorporate a plan of the location of fire safety equipment within the general procedures document and checklist/maintenance schedule such that the equipment can be checked for presence during inspections

Recommendation 26

The recommendation of the May 2007 Risk Assessment was to:

“Provide fire detection in high risk areas and remove all rubbish from roof.”

At the time of this inspection there was very little rubbish on the roof merely some old conduit and lengths of timber.



There is no fire detection within the lift motor rooms, but the rooms were both tidy and clean with rubber mats on the floor in front of electrical equipment. They were let down by the lack of serviced fire extinguishers and by the open cabinet to Lift A in Bush Court.

As a general policy, remote, high risk areas should be considered for fire detection when determining whether a system is to be installed within the building.

What is not mentioned in the original Risk Assessment is the condition of the Tank Rooms above the staircores. Within these rooms is the installation for satellite TV reception, and for transmission of data by radio, and large quantities of rubbish with other flammable and combustible materials scattered about.



Access to the roof is gained via a door at the top of the internal staircore leading to a small lobby from which a cat ladder provides entry to the Tank Room. In both Courts, this lobby was full of packaging, odd materials and rubbish.



The doors leading out from the each Tank Room to the roof were poorly fitting and not fire proof. Both should be replaced and fitted with appropriate safety signage to ensure that they are not locked or obstructed in the case of an emergency.



The doors to the lift motor rooms should have safety signage attached to ensure that personnel working within them can escape quickly, the door from the roof should have similar signage indicating both that it is a fire exit route and that it should be kept clear on the inside.



The door leading from the cat ladder to the stair lobby also has no signs indicating that it is a fire escape and thus should be kept clear.

The recommendation is to consider fire detection within the lift motor room and to ensure that the roof is completely cleared of all materials and rubbish.











All rubbish must be cleared from the tank rooms and the doors from tank room to the roof should be replaced with properly fitting doors and appropriate signage provided.

Lift Engineers should ensure that all cabinets within the motor room are secured shut.







All fire exit doors must have appropriate signs displayed

11 Schedules of Works








Schedules of Signage Required

Sign Type	Graphic	From Schedule No.						Total
		1	2	3	4	5	6	
1		76		1		2		79
2		76	1	1		4	2	84
3		38	7	7	4	2	10	68
4		38			2			40
5		76	6	6				88
6		152						152
7		76	10	10				96
8			3	4	4		10	21
9								
10								






Schedules of Signage Required (continued)

Sign Type	Graphic	From Schedule No.						Total
		1	2	3	4	5	6	
11								
12								
13					6		6	12
14					4		4	8
15					2			2
16						2		2







Schedule 1 - Stairs and Residential Floor Levels (per Court)

Sign Type	Graphic	Number / Floor	Total
1		2	38
2		2	38
3		1	19
4		1	19
5		2	38
6		4	76
7		2	38








Schedule 2 - Bottom of Stairs and Ground Floor (Shepherds Court)

Sign Type	Graphic	Number / Floor	Total
2		1	1
3		7	7
5		2	6
7		8+2	10
8		3	3

Schedule 3 - Bottom of Stairs and Ground Floor (Bush Court)





Sign Type	Graphic	Number / Floor	Total
1		1	1
2		1	1
3		7	7
5		2	6
7		8+2	10
8		4	4

Schedule 4 - Roof, Level 19 Door to Roof Access, Tank Room and Lift Motor Room







Sign Type	Graphic	Number / Court	Total
3		2	4
4		1	2
8	 	2	4
13		3	6
14		2	4
15		1	2

Schedule 5 – Lobby and Walkway to Amenity Deck

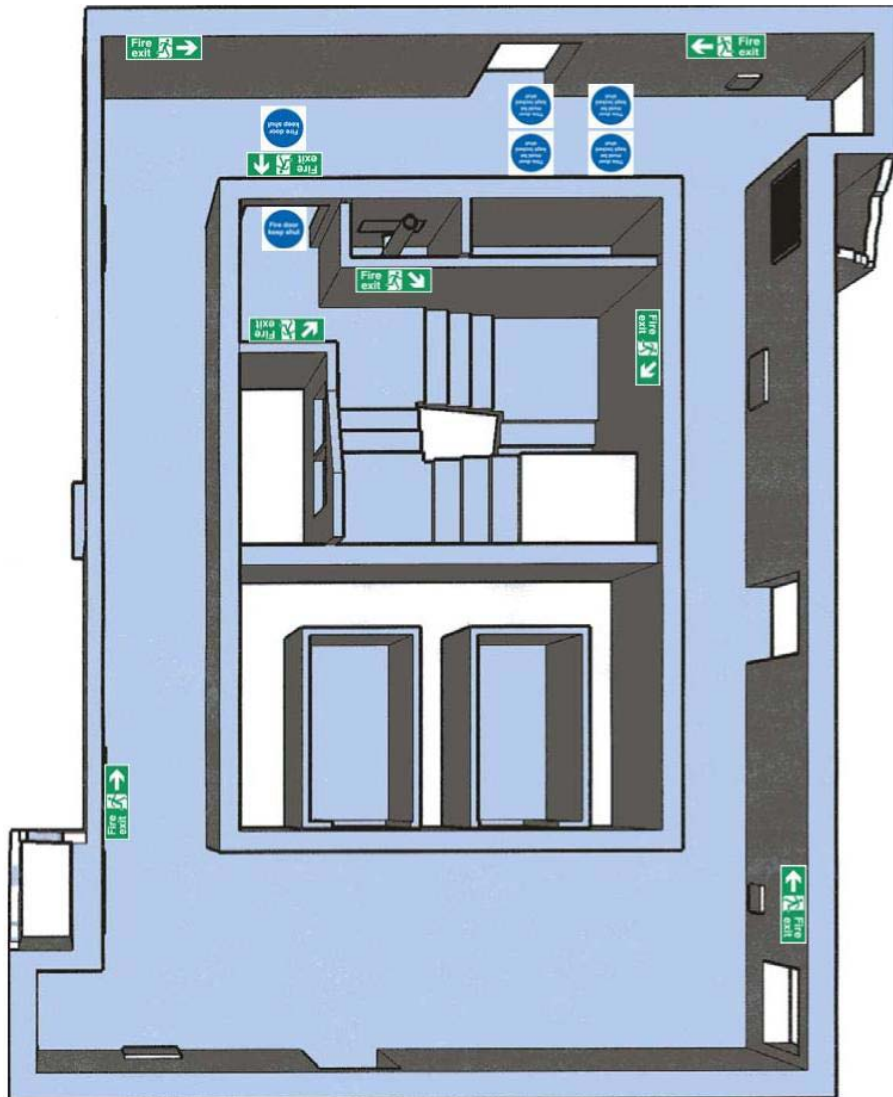
NOTE: The Fire Exit signs to be placed only after door to staircore has been changed to Escape Door

Sign Type	Graphic	Number / Court	Total
1		1	2
2		2	4
3		1	2
16		1	2

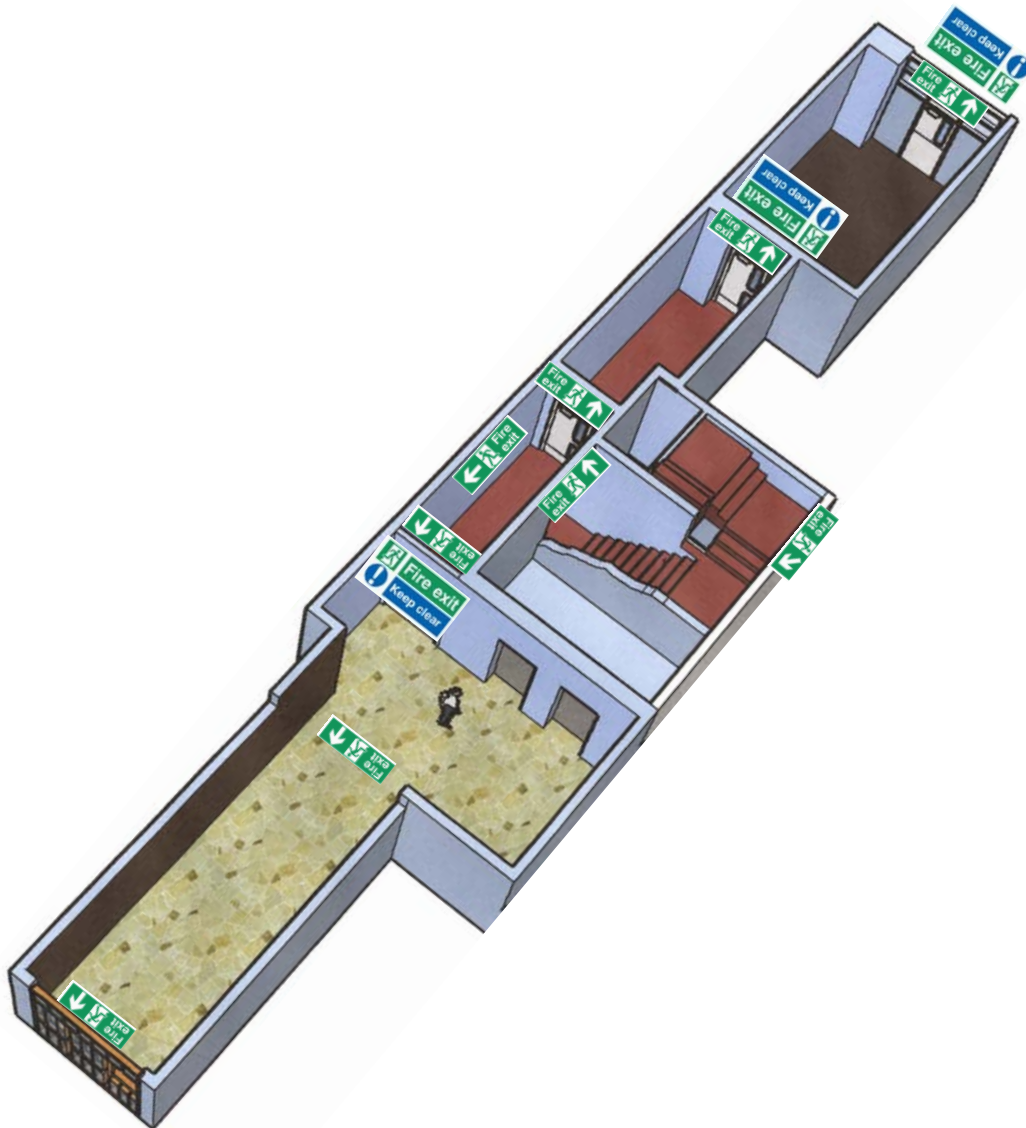
Schedule 6 - Stores & Electric Rooms

Sign Type	Graphic	Number / Court	Total
2		1	2
3		5	10
8	 	5	10
13		3	6
14		2	4

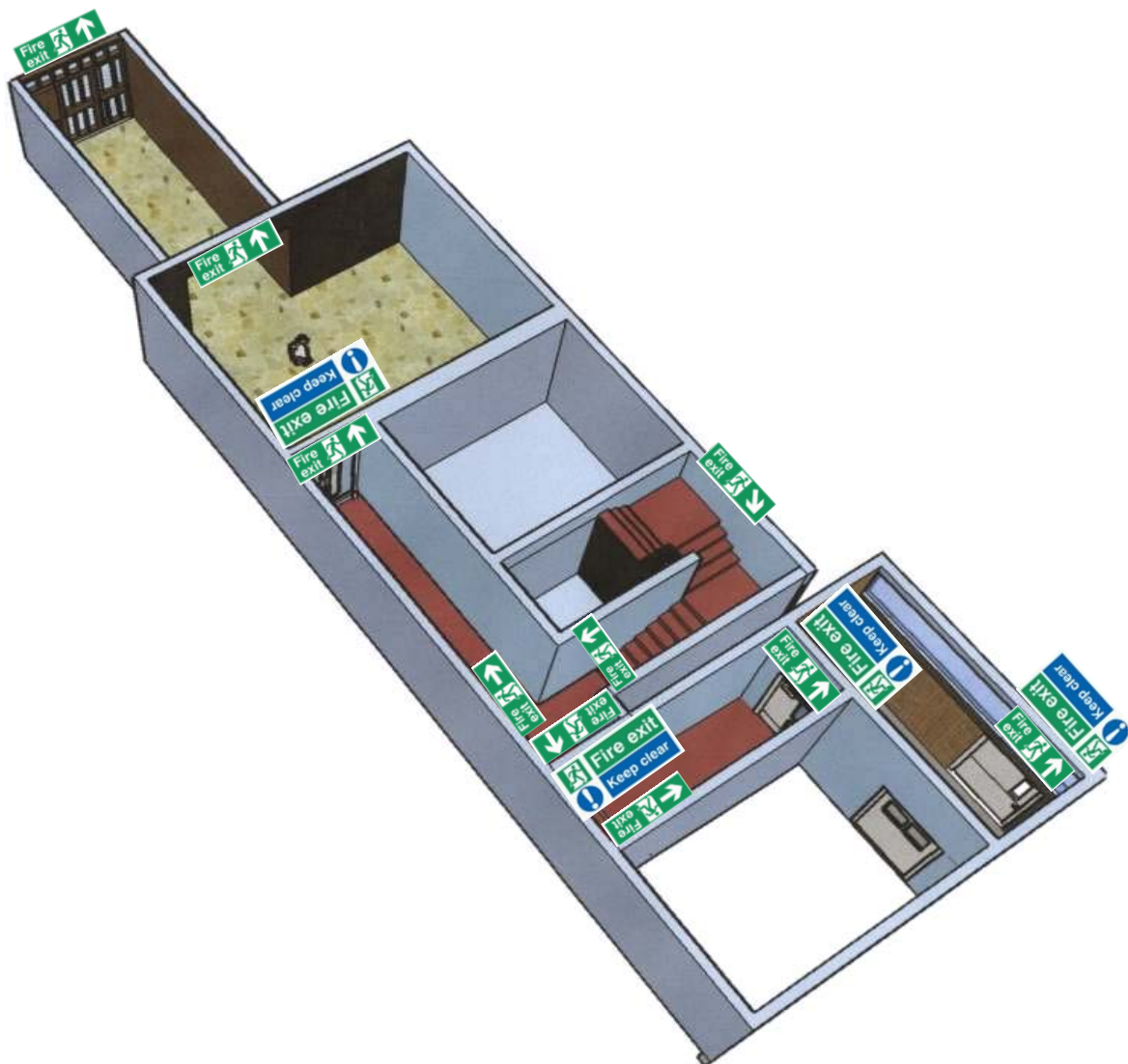
**Sign Location at Stairs & Residential Floor Levels
(Refer to Schedule 1)**



**Sign Location at Bottom of Stairs and at Ground Floor of Shepherds Court
(Refer to Schedule 2)**



**Sign Location at Bottom of Stairs and at Ground Floor of Bush Court
(Refer to Schedule 3)**



Doors Schedule

Removing Doors / Preparation

Bill	Page	Item	Description	Quantity	Units	Rate	Value
1	1	A	Remove 1 No Timber Door, 2050mm x 910mm x 44mm, fitted with door closer at head, secured by 3 No steel hinges. Carefully set aside for refurbishment	42	No		
1	1	B	Allow for removing paint from screw heads	1	Item		
1	1	C	Allow for extracting screws with damaged heads	1	Item		
1	1	D	Remove internal door closer from door, and dispose	20	No		
1	1	E	Remove external door closer (Briton 2000 Series) from door and set aside for possible re-use	29	No		
1	1	F	Allow for removing pull handles, push plates, and kick plates and set aside for reuse	42	No		
1	1	G	Allow for removing strengthening plates of thin steel plate or MDF board, approx 910mm x 250mm x 3mm, from face of door	5	No		

Renovating Doors

Bill	Page	Item	Description	Quantity	Units	Rate	Value
1	2	A	Make good head of door by insertion of hardwood insert	34	Item		
1	2	B	Make good edges of doors by insertion of hardwood insert, approx 300mm x 35mm x 20mm	2	No		
1	2	C	Make good minor damage to door face caused by fitment of external door closers	21	No		
1	2	D	Inspect vision panel in door, approx 440mm x 300mm. If not of Georgian wired glass, remove beading and panel, replace panel with fire rated Georgian glass, replace beads, resealing with intumescent mastic	1	No		
1	2	E	Inspect vision panel in door, approx 440mm x 300mm. If Georgian wired glass is secured with putty, remove and replace with fire hardwood beads sealing with intumescent mastic	2	No		
1	2	F	Decoration, allow to prime, knot and stop, all new timber, and repairs, thoroughly prepare all previously painted surfaces, apply 2 undercoats and 1 gloss finishing coat	34	No		

Renovate Frames, Adhere Smoke Seals

Bill	Page	Item	Description	Quantity	Units	Rate	Value
1	3	A	Make good head of timber frame by insertion of hardwood insert, approx 300mm x 35mm x 20mm	34	Item		
1	3	B	Allow for making good minor damage to door frame caused by previous repairs	6	Item		
1	3	C	Thoroughly prepare the door stops to allow adhesion of 10mm smoke seals	40	No		
1	3	D	Install Batwing Smoke Seal, Lorient UK reference "IS1010 Batwing" to full extent of door stops in accordance with manufacturer's instructions. Or similar approved by CA	205	m		
1	3	E	Install Batwing Smoke Seal, Lorient UK reference "IS1010 Batwing" to full extent of door edge of one leaf of double door in accordance with manufacturer's instructions. Or similar approved by CA	5	m		

Rehang Doors in Existing Frames

Bill	Page	Item	Description	Quantity	Units	Rate	Value
1	4	A	Adjust door size to ensure good fit into smoke seals	42	No		
1	4	B	Re-hang doors, using original hinges wherever possible. Pack and adjust doors to ensure smooth operation and good fit into smoke seals	42	No		
1	4	C	Allow for replacing pull handle, push plate and kick plates	42	No		
1	4	D	Install new, adjustable, external door closers of type and grade suitable for the width and weight of door to the push face of the door (Briton 2003V, or similar)	42	No		
1	4	E	Make final adjustments to door closer, and hanging of door, to ensure smooth operation	42	No		

Contingency (Provision Sums)

Bill	Page	Item	Description	Quantity	Units	Rate	Value
1	5	A	Allow for all works associated with total replacement of door and frame with FD30S door set (supply of door set excluded) if existing is determined to be unserviceable after removal. Allow for removal of frame, disposal of frame, door and ancillaries, complying with manufacturer's instructions and for possible modifications to the structural opening, making good of walls and redecoration	6	No		
1	5	B	Supply FD30S door set for installation	6	No		
1	5	C	Allow for replacement by steel hinges of those determined to be unserviceable after removal of doors	40	No		
1	5	D	Allow to supply and fit replacement of push plates, approx 380mm x 100mm	10	No		
1	5	E	Allow to supply and fit replacement of kick plates, approx 910mm x 240mm	10	No		
1	5	F	Allow to supply replacement of pull handles, 210mm x 50mm x 15mm diameter	10	No		

Schedule of Works Identified in the Recommendations

Bill	Page	Item	Description	Quantity	Units	Rate	Value
2	1	A	Recommendation 1 Clear all external areas at rear exits to flats of large items of waste and other rubbish. Advise Residents of their obligations to keep these areas clear of rubbish.	1	Item		
2	1	B	Recommendation 2a Engage services of approved Fire Detection installer and obtain quote for a system which will be compliant with current legislation, BS and Codes of Practice	1	Item		
2	1	C	Recommendation 2b Advise Residents of their obligation to maintain all lobbies, corridors and other escape routes free from obstructions.	1	Item		
2	1	D	Recommendation 3 Arrange Meeting with all Concierge and Caretaking staff, invite local Fire Protection Officer and discuss Housekeeping within Store Areas with them	1	Item		
2	1	E	Assist H&FH in writing procedures for checking contractors' works prior to them leaving site to ensure that the workmanlike standards have been achieved and that the building is being left in a safe and tidy condition.	1	Item		
2	1	F	Recommendation 4 Install signage as scheduled	1	Item		
2	1	G	Recommendation 5 Have Electrical Intake Rooms examined by a Building Services Engineer and carry out remedial actions as suggested by him.	1	Item		
2	1	H	Assist H&FH in writing procedures for ensuring that fire extinguishers are annually serviced and then regularly checked to ensure that they are still present and fully able to function.	1	Item		

Bill	Page	Item	Description	Quantity	Units	Rate	Value
2	2	A	Recommendation 6 Remove build up of paint from locks and hinges of metal access doors to gas meter viewing windows and free up the doors such that they may be locked shut and accessed to read meters when required	203	No		
2	2	B	Replace metal access doors, complete with locks, as above, where these have been broken off and are missing. Make good and decorate to match existing	1	No		
2	2	C	Replace locks to metal access doors, as above, where these have been broken off and are missing. Make good and decorate to match existing	4	No		
2	2	D	Replace Georgian wired glass to gas meter viewing windows as above. Remove temporary packing.	9	No		
2	2	E	Remove timber board covers and timber framework to riser access door covers. Replace with similar covers of non-combustible material (Supalux or similar)	204	No		
2	2	F	Engage a Fire Engineer to advise the requirements for protecting the transfer grilles between bathrooms and extract shaft	1	Item		
2	2	G	Recommendation 7 Carry out recommendations of the Meter Cupboard Survey Report of 2 nd September 2009	1	Item		
2	2	H	Recommendation 8d Engage a Fire Engineer to advise on the requirement for Fire Detection within the Lift Shaft	1	Item		
2	2	I	Engage services of approved Fire Detection installer and obtain quote for a system which will be compliant with current legislation, BS and Codes of Practice	1	Item		

Bill	Page	Item	Description	Quantity	Units	Rate	Value
2	3	A	Recommendation 10 Engage C.F. Brailey Ltd to upgrade Lightning Protection system	1	Item		
2	3	B	BWIC and attendance on Lightning Protection upgrade as advised by C F Brailey	1	Item		
2	3	C	Recommendation 12 Arrange for, and attend, Fire Safety Checks to be carried out within the flats by the LFB.	1	Item		
2	3	D	Recommendation 13 Assist H&FH in writing a "Safe Procedures for Work" document for use by individual contractors or those carrying out short-term works	1	Item		
2	3	E	Recommendation 14 Modifications to Doors as scheduled elsewhere	1	Item		
2	3	F	Recommendation 15 Provide Training to Concierge and Caretaking staff	1	Item		
2	3	G	Recommendation 16 Engage Electrical Engineer to examine the Emergency Lighting system for compliance	1	Item		
2	3	H	Carry out any rectification required by the Electrical Engineer	1	Item		
2	3	I	Recommendation 17 Provide 5kg CO2 fire extinguisher complete with wall bracket, fire safety signage and instructions. Fix to walls in Electric Riser Rooms, Caretaker's Stores, Tank Rooms and Lift Motor Rooms	8	No		
2	3	J	Recommendation 19 Obtain guidance from a Fire Engineer, or the LFB, as to the safety implications of having exposed gas pipework in escape corridors	1	Item		
2	3	K	Carry out any rectification required by the Fire Engineer or LFB	1	Item		

Bill	Page	Item	Description	Quantity	Units	Rate	Value
2	4	A	Recommendation 21 Issue Residents with a copy of the Information Leaflet "Escaping from High Rise" and provide fire safety education and advice to residents appropriate to their situation and location within the building	1	Item		
2	4	B	Recommendation 22 Assist H&FH management with compiling an Inspection and Maintenance Schedule and Checklist	1	Item		
2	4	C	Recommendation 23 (Provision Sum) Check all luminaries and replace defective lamps	20	No		
2	4	D	Recommendation 25 Allow for including a plan of the buildings showing location of fire protection equipment in the Inspection and Maintenance Checklist of Recommendation 22	1	Item		
2	4	E	Recommendation 26 Clear rubbish from roof access cat ladder room at top of stairs, tank room and roof (2 No each)	1	Item		
2	4	F	Engage a Fire Engineer to advise on the requirement for Fire Detection within the Lift Motor Room	1	Item		
2	4	G	If required, engage services of approved Fire Detection installer and obtain quote for a system which will be compliant with current legislation, BS and Codes of Practice	1	Item		
2	4	H	Provision Sum Allow for removing and disposing of complete exit door and frame from opening between tank room to roof, providing and installing new steel fire-rated external door complete with ironmongery, including any structural alterations, all making good and decorations.	2	No		

