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Fire Strategy Report

Title / Client	Felix DB Ltd
Address	19 White Hart Lane, SW13 0PX
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RELEVANT INFORMATION

This report is prepared for the exclusive use of Felix DB Ltd and a third party shall not rely upon the information that it contains. Fire Risk Assessments Ltd will not accept any responsibility for matters arising because of use by a third party. The recommendations within this report should not be applied to any other building and may not be relevant if there are significant changes from the plans at the end of this document.

The submission of this assessment report constitutes neither a warranty of future results by Fire Risk Assessment Ltd, nor an assurance against risk. The report represents only the best judgement of the consultant involved in its preparation, and is based, in part, on information provided by others. No liability whatsoever is accepted for the accuracy of such information.

The contents of this assessment report are confidential and privileged, and all parties are required to keep information received by them confidential and any "Report" (includes written or verbal, formal or informal) and its recommendations are without prejudice to all parties' obligations under the legal agreements existing between them.

INTRODUCTION

SCOPE 1.0 Fire Risk Assessments Ltd has been appointed to produce a Fire Strategy report for the project known as 19 White Hart Lane. The development plan is to convert an existing dwelling into two individual flats being lower ground and ground floor - 1st flat and 1st and 2nd floors - 2nd flat. The Fire Strategy is intended for discussion between the Design Team and to assist the Design Team in gaining approval in principle from the Building Control Body. This report is based on the guidance in the Approved Document B 2019 incorporating 2020 amendments. The report follows the main sections in Approved Document B, however, in some specific areas fire engineering has been used to demonstrate deviations from the guidance. Such deviations are explained in each section as appropriate. These deviations are risk issues until accepted by the Building Control Body. The design team should ensure the contents of this report are incorporated in the building design and this report should form part of the information handed over to the end user. 1.1 PRIMARY LEGISLATION The primary fire legislation applicable to this development is: • Approved Document B 2019 incorporating 2020 amendments, (pre-occupation); • The Regulatory Reform (Fire Safety) Order 2005 (post-occupation). 1.1.1 APPROVED DOCUMENT B 2019 incorporating 2020 amendments. The Approved Document B gives recommendations and guidance on the design, management and use of residential buildings so that they attain reasonable standards of fire safety for all the people who are in and around them. Responsibility for deciding if the requirements of the Regulations have been met rests with the Building Control body (the Local Authority Building Control or an Approved Inspector company). 1.1.2 **REGULATORY REFORM (Fire Safety) ORDER 2005** The Regulatory Reform (Fire Safety) Order (FSO) is a primary piece of legislation relating to fire safety in existing, non-domestic premises and the common areas of residential buildings and is enforced by the local fire authority. The duty of ensuring that the requirements of the Order are met rests with the 'Responsible Person', who must undertake (or cause to undertake) a risk assessment for the purpose of identifying the fire precautions they need to take. **CONSTRUCTION, DESIGN and MANAGEMENT REGULATIONS 2015** 1.1.3 UK projects are subject to the requirements of the Construction (Design and Management) Regulations 2015 (CDM). Where any conclusions or recommendations contained within this report specify materials, products or forms of construction these will have been assessed, in accordance with CDM Regulations 11 and 18 (duties for designers). If these involve significant residual risks or health and safety critical assumptions, this information will be made available to the Principal Designer. Where the architect or other consultants use all or part of this report to specify works, they are understood to be competent in alerting the Client, Principal Designer, Designers, Contractors and Building Occupier of issues arising under the CDM Regulations. 1.1.4 STATUTORY CONSULTATION During the Building Regulations application process, the Building Control body is required by law to consult with the Fire Authority. The purpose of this consultation is to give the Fire Authority an opportunity to make observations with respect to The Building Regulations 2019 and to provide an opportunity to make the applicant aware of action that may have to be taken to meet the requirements of the FSO (this generally will be in the form of the communal areas fire risk assessment)

If the Fire Authority require physical changes to be made to the building to meet the requirements of the FSO, the Building Control body has a legal responsibility to pass on all comments and recommendations to the applicant/responsible person. The applicant should take note of all comments and where necessary implement these into the buildings design.

1.2 FIRE SAFETY OBJECTIVES

This report aims to satisfy the following statutory fire safety objectives:

- Occupants life safety: The occupants must be able to escape the building without being exposed to hazardous or untenable conditions. This shall be satisfied by meeting the Requirements B1 to B3 of The Building Regulations 2019
- Protection of adjoining buildings: Structures must not collapse onto adjacent property and fire spread by radiation shall not occur. This shall be satisfied by meeting the Requirement B4 of The Building Regulations 2019;
- Firefighters life safety: Firefighters must be given a reasonable time to rescue any remaining occupants before hazardous conditions develop or structure collapse occurs. This shall be satisfied by meeting the Requirement B5 of The Building Regulations 2019

1.3 SOURCES OF INFORMATION

The report is based on information gained from the below proposed drawings dated 16.04.21:

- FDB–19WH–A201-4 Proposed lower ground floor.
- FDB-19WH-A202-4 Proposed ground floor.
- FDB-19WH-A203-4 Proposed 1st floor.
- FDB-19WH-A204-4 Proposed 2nd floor.
- FDB-19WH-A304-4 Proposed roof.
- FDB–19WH–A305-4 Proposed front elevation.
- FDB-19WH-A402-4 Proposed rear elevation Section AA
- FDB–19WH–A402-4 Proposed rear elevation Section BB

1.4 LIMITATIONS AND ASSUMPTIONS

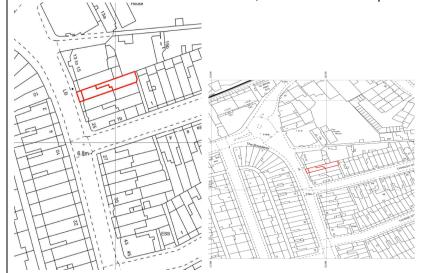
This report is based on the following assumptions and limitations:

The basis of the report is upon the information provided by the drawings referenced in section 1.3 The description of the works which have been covered by the report are listed in Section 1.1 (the scope);

- It has been assumed that all other parts of the building design are in accordance with The Approved Document B and especially those sections that could affect the fire strategy;
- It is required as part of this strategy that the completed building will be used as defined
 under the specific purpose groups and level of fire risk attached to these uses. Any
 change to the use or level of fire risk within the building and its surroundings will require a
 further assessment and potentially a new fire strategy to achieve compliance;
- The building is to be managed, operated and maintained in accordance with the guidance provided in each relevant section of this report.
- The fire strategy does not include for the design layout of any passive and active measures such as fire detection and sprinkler or alike, load bearing calculations or fire engineering such as FDS / CFD modelling.

2.0 PRINCIPLE BUILDING CHARASTICS

The site is located at 19 White Hart Lane, as shown in the maps below.



2.1 BUILDING DESCRIPTION

The re-development of the existing dwelling house comprises of two individual flats that span from lower ground to 2^{nd} floor level.

Proposed variations to the current layout include the following:

- L shape roof extension dormer
- Single storey rear and side extension
- Single storey front bay window
- Enlarged basement floor with a basement front lightwell and bay window.

The main entrances to both flats can be found at ground floor level.

3.0	VARIATIONS TO GUIDANCE
	The guidance notes listed within the report below highlights any deviations from the guidance of
	the Approved Document B, in addition to the analysis methodology proposed for the fire
	engineering justification. It should be noted that the guidance notes highlighted in red are a risk
	until agreed with the Approving Authorities.

4.0	A COPOCA AND EACH ITIES FOR THE FIRE OFFICE
4.0	ACCESS AND FACILITIES FOR THE FIRE SERVICE
	Provisions covering access and facilities for the fire service are to safeguard the health and
	safety of people in and around the buildings. Their extent depends on the size and use of the
	buildings. Most firefighting is carried out within the building. This can be met by achieving all of
	the following.
	 External access enabling fire appliances to be used near the building.
	 Access into and within the building for firefighting personnel to both:
	i. Search for and rescue people
	ii. Fight fire
	 Provision for internal fire facilities for firefighters to complete their tasks.
	If an alternative approach is taken to providing the means of escape, outside the scope of this
	approved document, additional provisions for firefighting access may be required. Where
	deviating from the general guidance, it is advisable to seek advice from the fire and rescue
	service as early as possible (even if there is no statutory duty to consult).
4.1	VEHICLE ACCESS
4.1.1	Vehicle access will be provided at the front of the building and considered acceptable.
4.1.2	Dead-end access routes longer than 20m require turning facilities.
4.1.3	Typical fire and rescue service vehicle access route specification (as per table 13.1 of Approved
	Document B).
	Vehicle Type – PUMP
	Minimum width of road between kerbs = 3.7m
	Minimum width of gateways = 3.1m
	Minimum turning circle between kerbs = 16.8m
	Minimum clearance height = 3.7m
	Minimum carrying capacity = 12.5 tonnes.
4.2	PROVISION OF PRIVATE HYDRANTS
	As per Approved Document B a building
	For buildings not provided with fire mains – hydrants should be both of the following.
	i. Within 90m of an entrance to the building.
	ii. A maximum of 90m apart.
	Each fire hydrant should be clearly indicated by a plate, fixed nearby in a conspicuous position,
	in accordance with BS3251.
4.0	Guidance on the aspects of the provision and siting if private fire hydrants is given in BS9990.
4.3	Guidance Notes
4.3.1	The existing local authority hydrants should be located within the required distance and should
	be located on White Hart Lane to the front of the property. The distance should be checked to
	ensure compliance.

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5.0	MEANS OF ESCAPE
5.1	Individual Flats
5.1.1	As per Approved Document B section 3, escape from upper storeys of more than 4.5m above ground level where served by one stair all habitable rooms (excluding kitchens) should have either of the following.
	Direct access to a protected stairway, a stair separated by fire resisting construction
	(minimum REI 30) at all storeys, that complies with one of the following.
	i. Extends to a final exit.
	ii. Gives access to a minimum of two ground level final exits that are separated from each other by fire resisting construction (minimum REI 30) and fire doorsets (FD30s).
	Cavity barriers of a fire resisting ceiling (minimum El 30) should be provided above a protected stairway enclosure.
	Alternative escape route – a top storey separated from lower storey by fire resisting
	construction (minimum REI 30) and with an alternative route leading to its own final exit.
5.1.2	Limitations on travel distance in common areas of flats
	Maximum travel distance from flat entrance door to common stair or stair lobby.
	Escape in one direction – 7.5m
	Escape in more than one direction – 30m
	NOTES:
	1. If travel distance is measured to a stair lobby, the lobby must not provide direct access to any storage room, flat or other space containing a fire hazard.
	2. In the case of a small single stair building, this is reduced to 4.5m.
	3. Does not apply if all flats on a storey have independent alternative means of escape.
5.2	GENERAL PROVISIONS
5.2.1	Emergency Escape Windows
	Windows providing emergency escape should comply with all of the following.
	i. A minimum area of 0.33m2.
	ii. A minimum height of 450mm and a minimum width of 450mm (the route through
	the window may be at an angle rather than straight through).
	iii. The bottom of the openable area is a maximum of 1100mm above the floor.
	 People escaping should be able to reach a place free from danger from fire.
	 Locks (with or without removable keys) and opening stays (with child-resistant release
	catches) may be fitted to escape windows.
	Windows should be capable of remaining open without being held.
5.3	Emergency Lighting
	Lighting of common escape routes
	All escape routes should have adequate artificial lighting. If the mains electricity power supply
- 4	fails, escape lighting should illuminate the route. Escape lighting should conform to BS 5266-1.
5.4	Fire Exit Signage Every doorway or other exit providing access to a means of escape, other than exits in ordinary
	use (e.g. main entrances), should be distinctively and conspicuously marked by an exit sign in
	accordance with BS ISO 3864-1 and BS 5499-4 .
	For this reason, blocks of flats with a single stair in regular use would not usually require any fire
	exit signage.
5.5	Guidance notes
	As per the drawings inspected there was no information on travel distances. These should be
	checked to ensure that compliance to 5.1.2.
	Flat 1 - Lower Ground / Ground Floor
	From the drawings inspected for this report they show that the lower ground floor has two means
	1 From the drawings inspected for this report they show that the lower ground hoof has two means

of escape, one from bedroom 2 direct to fresh air with the other from the protected staircase leading to ground floor and directly to the main entrance of the flat leading to the protected communal lobby and through the communal entrance / exit door to fresh air.

The ground floor also shows two means escape one being from the main entrance of the flat leading to the protected communal lobby and through the communal entrance / exit door to fresh air with the alternative exit being through the folding doors that can be found to rear of the open plan kitchen / lounge / dining area leading to the rear garden and the exit at the rear of the garden adjacent to the home office space also located away from the flat at the rear of the garden.

1st / 2nd Floor

From the drawings inspected for this report they show that there is one means of escape for this flat being the main entrance to the flat.

There is not an alternative means of exiting and therefor the recommendation of 5.2.1 is applicable.

To justify the aforementioned deviation, the following measures will be included in the design.

- Both flats will be provided with a fire alarm and warning system, designed in accordance with BS5839-6 to an LD1 Standard. (section 6)
- Windows should have an unobstructed openable area as listed within section 5.2.1.

6.0 **MEANS OF GIVING WARNING** 6.1 **AUTOMATIC FIRE DECTECTION** This section specifically deals with ASET (available safe escape time) through the minimum fire package including life safety system such as fire alarm(s) . Time line 1 (fire): fire, heat and effluent development . Time line 2 (occupants): means of escape . 3 Ignition . 4 Detection . 5 Occupants become aware of fire . 6 Alarm . 7 Occupants begin life safety strategy . 8 Life safety strategy complete . 9 Tenability limits reached (i.e. danger to life and possibility of secondary ignition) . 10 Fire growth . 11 Time Further to the above, The major stages of occupant response that should be taken into account in determining the provision of means of escape are: . a) time to detect a fire and sound an alarm; . b) pre-movement time which consists of the recognition time and the response time; . c) travel time, including queuing, to a place of relative safety; . d) movement within a place of relative safety (e.g. protected stair or adjacent compartment) Based on the above calculations, the fire alarm and smoke detection system within the residential accommodation will be designed in accordance with BS5839-Part 6 to a category LD1 Standard. LD1 standard consists of smoke detection being installed within every habitable room with heat detection being installed within the kitchen area. These can be wireless but also interlinked.

6.2	Guidance Notes
	If installed to the standard as mentioned above in section 6.1 this will give sufficient early
	warning to occupants for a safe evacuation.

7.0 FIRE BARRIERS / COMPARTMENTATION 7.1 For the purpose of explanation, each flat is classed as a fire compartment which should resist fire for the time period as shown below. All compartment walls and compartment floors should achieve both of the following. a. Form a complete barrier to fire between the compartments they separate. b. Have the appropriate fire resistance as per below extracts from Table B3 and B4 of the Approved Document B. Any part beside an external escape route – REI 30 (30 minutes fire protection) Compartment walls (means of escape, throughfares and corridors separating a flat from any other part of the building – REI 60 (60 minutes fire protection) Enclosure (that does not form part of a compartment wall or a protected shaft to a protected stairway – REI 30 (30 minutes fire protection) All compartment walls and compartment floors should achieve both of the following. Form a complete barrier to fire between the compartments they separate. Have the appropriate fire resistance of a minimum of 30 minutes. Timber beams, joists, purlins and rafters may be built into or carried through a masonry or concrete compartment wall if the openings for them are both of the following. As small as practicable. Fire-stopped. Junction of compartment roof wall. A compartment wall should achieve both of the following. Meet the underside of the roof covering or deck, with fire-stopping to maintain the continuity of fire resistance. Be continued across any eaves. To reduce the risk of fire spreading over the roof from one compartment to another, a 1500mm wide zone of the roof, either side of the wall, should have a covering able to resist fire for a minimum of 30 minutes. The DPC must be of a non-combustible material to inhibit fire spread and development. 7.2 Cavities in the construction of a building provide a ready route for the spread of smoke and flame, which can present a greater danger as any spread is concealed. For the purpose of this document, a cavity is considered to be any concealed space. 7.2.1 **CAVITY BARRIERS** To reduce the potential for fire spread, cavity barriers should be provided for both of the following. To divide cavities. To close the edges of cavities. Cavity barriers should not be confused with fire-stopping. Cavity barriers should be provided at all of the following locations. At the edges of cavities, including around openings (such as windows, doors and exit/entry points for services). At the junction between an external cavity wall and every compartment floor and compartment wall. At the junction between an internal cavity wall and every compartment floor,

compartment wall or other wall or door assembly forming a fire resisting barrier.

It is not appropriate to complete a line of compartment walls by fitting cavity barriers above them. The compartment wall should be extended to the underside of the floor or roof above.

Construction and Fixings for Cavity Barriers.

Cavity barriers, tested from each side separately, should provide a minimum of both of the following:

- 30 minutes' integrity (E 30)
- 15 minutes' insulation (I 15).

They may be formed by a construction provided for another purpose if it achieves the same performance.

Cavity barriers in a stud wall or partition, or provided around openings, may be formed of any of the following. a. Steel, a minimum of 0.5mm thick.

- b. Timber, a minimum of 38mm thick.
- c. Polythene-sleeved mineral wool, or mineral wool slab, under compression when installed in the cavity.
- d. Calcium silicate, cement-based or gypsum-based boards, a minimum of 12mm thick.

Cavity barriers should be tightly fitted to a rigid construction and mechanically fixed in position. If this is not possible (e.g. where a cavity barrier joins to slates, tiles, corrugated sheeting or similar materials) the junction should be fire-stopped.

Cavity barriers should be fixed so their performance is unlikely to be made ineffective by any of the following.

- Movement of the building due to subsidence, shrinkage or temperature change, and movement of the external envelope due to wind.
- During a fire, collapse of services penetrating the cavity barriers, either by the failure of the supporting system or through degradation of the service itself (e.g. by melting or burning).
- During a fire, failure of the cavity barrier fixings. (In roof spaces, where cavity barriers
 are fixed to roof members, there is no expectation of fire resistance from roof members
 provided for the purpose of support.)
- During a fire, failure of any material or construction to which cavity barriers abut. (For example, a suspended ceiling that continues over a fire resisting wall or partition collapses, and the cavity barrier fails prematurely because the ceiling was not designed to provide a minimum fire resistance of EI 30.)

7.3 FIRE STOPPING

Every room should be a fire compartment to with-hold fire and smoke spread.

Holes and penetrations provide a pathway for fire and smoke to spread throughout the property. The performance of a fire-separating element should not be impaired. Every joint, imperfect fit and opening for services should be sealed.

Fire-stopping delays the spread of fire and, generally, the spread of smoke as well.

If you are in doubt of the choice of fire stopping, please consult a third party that are accredited to ASFP. Expanding foam is not a fire stopping product and should not be used as the final fire stopping material.

General acceptable fire stopping materials include:

- Fire bat
- Intumescent mastic or sealant
- Plaster

Plasterboard with joins sealed. Intumescent fire stop block Mortar 7.4 **LOAD BEARINGS** Premature failure of the structure can be prevented by provisions for loadbearing elements of structure to have a minimum standard of fire resistance, in terms of resistance to collapse or failure of loadbearing capacity. The Load bearing for the property is unknown, a structural engineer would provide guidance. 7.6 **Doors** Flat entrance doors are required to be 30 minute fire rated (FD30S) All room within flats should be FD30s fire doors and fitted with self-closers. These include: Kitchens **Bedrooms** Bathrooms. For maximum efficiency fire doors should close unaided by a overhead closer not be lockable from the inside have at least 1/2" door stop have 3 fire rated hinges be signed as fire door have maximum 3mm gaps between door and frame and a maximum gap under the door of 10mm have smoke seals/intumescent strip fitted Intumescent fire door seals should be fitted to the stiles and head of all the fire-resisting door sets. These seals are fitted into grooves cut into the door or the frame, or alternatively, can be surface mounted. As smoke spread can be a significant threat to life and property the fire doors should also be fitted with a 'cold smoke' seal to prevent the ingress of smoke around the door edges. Combined smoke and intumescent seals are available. It is highly recommended that doors complete with ironmongery and is manufactured as door set. This provides the assurance that the door(s) are as 'manufactured' and can be returned as a whole if damage is found. 7.7 **Balconies** Balcony materials should be constructed from European Classification (Euroclass) of at least A2-s1, d0 or better. 7.8 **Guidance notes** No information was found within the drawings inspected. The premises appear to be constructed from brick, the internal construction materials separating floor and partitions are unknown. The DPC course should be of a non combustible material to inhibit fire spread and development. The cavities within the dwelling should be compliant to Approved Document as listed above this can be achieved by using noncombustible insulation such as rockwool.

Compartmentation can be achieved internally by ensuring that fire lined Gyproc is used to cover

all walls and ceiling with all joins being sealed with a noncombustible material such as plaster or sealant. (not expanding foam)

Fire stopping can be achieved by using collars on pipework, non-combustible sealant on small holes, fire lined plasterboard on larger holes. These should all have a fire resistance of a minimum of 30 minutes.

Guidance on fire stopping is provided in section 7.3

8.0 EXTERNAL FIRE SPREAD

8.1 Resisting fire spread over external walls

The external envelope of a building should not contribute to undue fire spread from one part of a building to another part. This intention can be met by constructing external walls so that both of the following are satisfied.

- a. The risk of ignition by an external source to the outside surface of the building and spread of fire over the outside surface is restricted.
- b. The materials used to construct external walls, and attachments to them, and how they are assembled do not contribute to the rate of fire spread up the outside of the building.

Cladding systems should be installed in accordance with the British Standards as listed below:

BS 8414 Fire performance of external cladding systems

BS 8414-1 Test method for non-loadbearing external cladding systems applied to the masonry face of a building [2015 + A1 2017]

BS 8414-2 Test method for non-loadbearing external cladding systems fixed to and supported by a structural steel frame [2015 + A1 2017]

8.2 Guidance Notes

As per the drawings inspected there was no information on the external building materials and it presumed that there will be no external cladding present.

9.0 Regulation 38

To satisfy Regulation 38 of The Building Regulations 2010 it is proposed that a full package of building design information is passed to the end user.

It is proposed that the following relevant information is provided to the end users:

- This fire strategy report;
- Any management information proposed in addition to that contained in this strategy;
- Details of all passive fire safety measures (including compartmentation, cavity barriers, fire doors, self-closers, and duct dampers);
- Details of the fire alarm and detection systems, emergency lighting, emergency signage, access controls, door hold open devices;
- Details of all active fire safety measures (where applicable)
- Details of the dry risers and fire hydrants (where applicable);
- Any high-risk rooms and equipment present;
- · As built plans for the building;
- Fire strategy drawings of every floor level within the building.
- O&M Manuals for the building systems, including commissioning information and certification.

This information will be transferred as a package of information by the main contractor at handover of the building.