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Draft Fire Strategy Notes for a the Construction of Two new town houses at 134 – 175 Ashburnham Road, Richmond

22nd March 2022 Issue 1 – Initial draft for team Comment (RP)

1.0 Introduction

1.1 Purpose

The purpose of this report is to set out the principles of design in respect of those matters connected to the fire safety aspects of the Building Regulation submission. These principals will be substantiated by detailed drawings, technical information and calculations, all of which, will be submitted with the main application.

The report should be read in conjunction with the following document;

- Ferrymoor Ham site 2 Garages, Design & access statement 10 February 2022: Rev. A.

This document will be used as the basis for the final fire risk assessments (to be carried out of any communal areas), as required by The Regulatory Reform (Fire Safety) Order 2005, carried out by before occupation (A copy will be kept in the fire safety manual.).

This will ensure that the general fire precautions within the building are to a satisfactory standard, as a minimum the following measures will be in place;

- Adequate measures to reduce the risk of fire and fire development are provided.
- Measures to ensure adequate means of escape are available at all times.
- Adequate means for fighting fires are available
- Suitable arrangement are in place for the raising the alarm in the event of fire.
- Suitable arrangements for action to be taken in the event of fire are in place, with occupants and employees provided with appropriate instruction and training.

The Building Regulations also now expect that the management procedures to be adopted are, where known, included as part of the Building Regulation application and accordingly this document refers to these procedures.

This report has been compiled adopting the principles from the Approved Document B Fire safety volume 1, with the development classed as purpose

group 1B.

1.2 Description of Works

The project will involve the demolition of existing garages and the construction of two new 3 storey townhouses. The houses will form single dwellings over three storeys, ground to second floors, with bedrooms over first and second floors and living accommodation on the ground floor.

2.0 Fire Separation

2.1 Construction & Fire Resistance

As a residential development which is over 5m but below under 18m in height the elements of structure are usually 60mins, however this is allowed to be constructed to 30 minutes fire resistance for a three storey dwelling in accordance with point 5 of the Approved document.

Therefore the elements of stricture will be constructed to 30 minutes fire resistance, with the exception of walls separating dwellings (party walls) will be constructed of materials achieving 60 minutes fire resistance.

The walls enclosing all stairs will be constructed of fire resisting materials achieving 30 minutes fire resistance. Doors to stairs will be FD 30. (closing devices will not be provided).

Nb the waste and cycle stores will be enclosed in materials achieving 30minutes fire resistance.

Any duct, which passes through a fire resisting wall or floor, as described above, will be provided with ES dampers which will be operated by automatic detection and have a fire resistance appropriate to the structure. (Services through stairs & escape routes will be avoided) Similarly, any other service penetration of these walls and floors will be suitably fire stopped e.g. electrical trays and conduits. See Appendix 1.

Any door in a compartment wall will have the same fire resistance as the wall, or be provided with a lobby so that the sum of the doors complies. All other new fire doors will have a fire resistance of FD30.

The part of any area or roof within 1500mm of an adjoining party wall between the dwellings (both sides of the wall a total of 3000mm) will be constructed of materials to AA, AB or AC on a deck of limited combustibility or be provided with a wall which extends at least 375mm above roof height.

3.0 Means of Escape

3.1 General

The height of the second floor is believed to be below 7.5m **(heights TBC),** therefore the stair will form a fire resisting shaft achieving 30 minutes fire resistance and automatic detection will be provided throughout the unit (see below). The stair will be provided with a final exit to a place of complete safety.

Should the second floor be above 7.5m each dwellings will be provided with a fire suppression system in accordance with BS 9251:2014.

3.2 Inner rooms

Inner rooms will be dealt with by the provision of smoke detection in access rooms.

Note inner rooms are not permitted on the second floor, they may be provided on the first floor provided they are provided with escape windows which meets the following criteria;

Escape windows should have an unobstructed openable area that complies with all of the following;

- A minimum area of 0.33m^2.
- 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).

- 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.
- Windows should be capable of remaining open without being held.

4.0 Smoke Control

Smoke control provision is not required for building regulations.

5.0 Fire Alarm

Each House will be provided with a fire alarm system to an LD 2 standard in accordance with BS 5839 Part 6, with automatic detectors in all circulation spaces that form part of the escape routes from the dwelling, and in all rooms or areas that present a high fire risk to occupant, kitchen, living rooms bedrooms etc.

All detection is to be powered by the mains electrical supply and provided with a secondary power supply. The mains power supply is to be taken off a commonly used local lighting circuit.

The system will provide a means of alerting occupants of a fire within their dwelling, where upon they will evacuate and alert the Fire Service.

6.0 Sprinklers

It is noted that sprinklers are not required for building regulations. However noting the comment above regarding the height of the premises, should the storey height of the second floor be in excess of 7.5m, a fire suppression system will be provided throughout the dwelling as follows.

An automatic sprinkler provision designed and installed to the recommendations in British Standard BS 9251:2014 (Fire sprinkler systems for domestic and residential occupancies). Will be provided as per the above comments, noting the system will be a designed for life safety.

7.0 Lighting and Power

7.1 Primary Lighting

Adequate artificial Lighting will be provided throughout and in particular to those escape routes not in everyday use. The lighting will be of a sufficient standard to enable persons to safely negotiate the escape routes.

8.0 Cavity Barriers

Cavity barriers will be provided where necessary, to ensure the escape stair enclosure achieves 30 minutes fire separation from surrounding area, within cavities.

9.0 Surface Spread of Flame

The surface spread of flame rating for all circulation areas and other rooms will be will be Class 1 (euro codes C-s3, d2), note small rooms with a maximum internal floor area of 4m^2 may use materials not lower than Class 3 (Euro codes D-s3, d2)

NB parts of walls in rooms may be of lower performance, but no worse than class D-s3, d2 in any one room, the total area of lower performance wall lining should be less than an area equivalent to half of the room's floor area, up to a maximum of 20m^2 of wall lining.

If used, thermoplastic lighting diffusers, which form part of the ceiling will be either a classification TP (a) or if TP (b) then the limitations indicated in table 4.2 and diagrams 4.2 & 4.3 of Approved Document 'B' are incorporated.

10.0 Signage

As the houses will form single dwellings fire exit signage will not be provided.

11.0 Fire Fighting Equipment

Any portable firefighting equipment will be provided by residents.

12.0 Fire Fighting

12.1 Access

Fire Service vehicle access will be provided by the existing roads which are shown on the following picture & diagram;

Diagram 1 showing Fire Service vehicle access from Riverside Drive & Croft Way to Ferrymoor. The red rectangle shows the location of the new Development. (Taken from Report Ferrymoor Ham site 2 Garages, Design & access statement 10 February 2022: Rev. A)

Picture 2 showing Fire service vehicle access from Riverside Drive & Croft Way to Ferrymoor.

(Taken from Report Ferrymoor Ham site 2 Garages, Design & access statement 10 February 2022: Rev. A)

12. 2 Fire Fighting Facilities

An existing fire hydrant is located as shown on the picture 3 below, which is within 90m of the proposed new entrances to the dwellings.

Picture 3 showing nearest fire hydrant location (taken from google earth 24.03.20222)

All areas of the dwellings will be within 45m hoses distances from fire service building access point.

13.0 Unprotected Areas

Unprotected area calculations will be provided and inserted within this report.

External façade

It is advised that any external insulation is non-combustible, which will be discussed with the authorities.

14.0 Building Regulations

The proposals outlined in this document demonstrate a satisfactory level of fire safety has been applied and therefore, satisfies the functional requirements of the Building Regulations.

Contractor works

The contractor will generally follow the guidance contained in:

- The Joint Code of Practice document on the protection from fire of construction
  sites and buildings undergoing renovation, ‘Fire Prevention on Construction Sites’ 9th Edition: October 2015
- The Regulatory Reform (Fire Safety) Order 2005.
- HSG 168 Fire Safety in Construction
- The CDM Regulations 2015.

1.0 Appendix Fire Stopping

Fire-stopping and sealing will be provided appropriate to the level of fire resistance.

Joints between elements that serve as a barrier to the passage of fire should be fire-stopped and all openings for pipes, ducts, conduits or cables to pass through any part of an element that serves as a barrier to the passage of fire should be:

a) Kept as few in number as possible;

b) Kept as small as practicable; and

c) Fire-stopped (which in the case of a flue or duct, should allow thermal movement).

Proprietary fire-stopping and sealing systems may be used provided that they achieve the appropriate level of fire resistance when tested in accordance with BS 476-22 or BS EN 1366-3 or BS EN 13501-2.

In the case where minimum differential movement is anticipated and where the gap does not exceed 25 mm, the following fire-stopping materials may be used without specific test evidence:

a) Cement mortar;

b) Gypsum-based plaster;

c) Cement or gypsum-based vermiculite/perlite mixes.

To maintain the physical integrity of fire-stopping, it should be reinforced with (or supported by) non-combustible materials, or materials of limited combustibility, in the following circumstances:

1) In all cases where the gap between elements that need to be fire-stopped is greater than 100 mm; and

2) In any other case where non-rigid or flexible materials are used