Fire Safety Technical Design Note

12 Park Road,
Hampton Wick, KT1
4AS.

6th February 2023

Introduction

CWB have been requested review the design proposals for 12 Park Road to identify any design risks that may need to be resolved to meet the functional requirements of The Building Regulations 2010 as amended.
This document has been provided after reviewing GA plans issued to CWB in February 2023.

Project description

2 Park Road is an existing three-storey corner plot building on the junction of Park Road and school Road. It is proposed to change the use to residential apartments. There will be five apartments located over the ground, first and second floors. The upper floors will be accessed via a single stairway.

Building Location.

Guidance Documents

Compliance has been assessed by reference to guidance approved and issued by the Secretary of State for the purpose of providing practical guidance with respect to the requirements of Schedule 1 to and regulation 7 of the Building Regulations 2010. [Approved Document B, Volume 1 - 2019 edition incorporating 2020 & 2022 amendments [ADB].
If followed, this document will satisfy the functional requirements of the Building Regulations. The building work should be carried out to comply with the relevant sections of ADB or the relevant supporting British Standards referenced therein.

GA Plans

This report has been produced with reference to GA plans produced by Osel Architecture in July 2021 and issued to CWB in February 2023 (E21-026/PRP000[Rev B], E21-026/PRP001[Rev D], B] & E21-026/PRP002[Rev B]).

B1 - Means of Warning & Escape

Automatic fire detection and alarm system

ADB recommends a minimum automatic fire detection and alarm system of Grade D1, Category LD2 system and BS 5839-6: 2019.

Consideration should be given to providing an enhanced system Category LD1 which would provide automatic detection in all habitable rooms. This enhances system may be considered as a compensatory feature that may allow for flexibility in the design.

An Automatic Opening Vent (AOV) will be required at the head of the stairway. This should be linked to automatic smoke detection in the common areas of a Category L5 designed and installed in accordance with BS 5839-1: 2017. The system in the common points should not incorporate manual call points or sounders as it is provided solely for the purpose of actuating the vent, and not giving a warning to the occupants as this would not support the stay-put evacuation strategy.

Means of escape

Evacuation strategy

The building will be designed for a 'stay-put' evacuation strategy. This means that in the event of a fire within an apartment, only the occupants within the apartment of fire origin will evacuate; all other occupants should be safe to remain and escape only if they wish to do so or are directed to do so by the fire service.

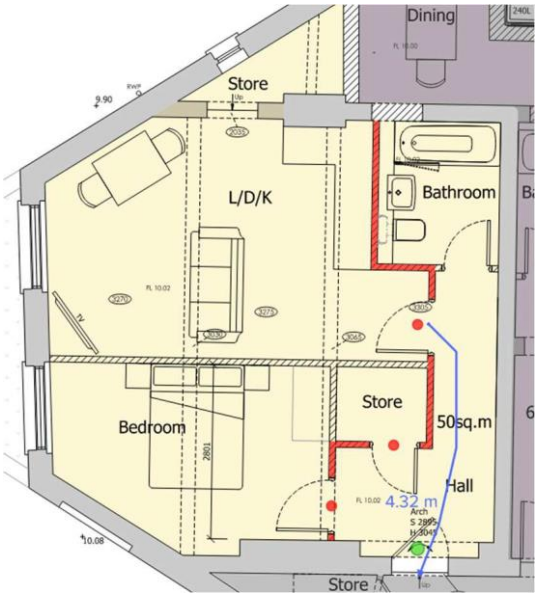
This strategy will be fully supported by the proposed level of compartmentation and the proposed fire warning system.

Means of Escape from apartments

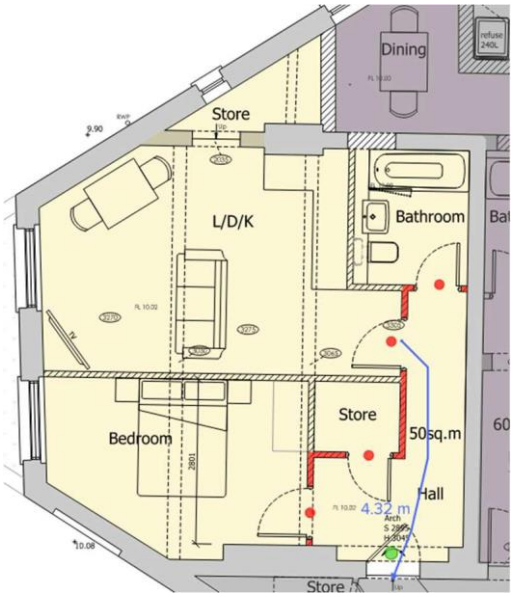
The apartments will be provided with a protected internal hallway serving all rooms, with a maximum travel distance of 9m measured from the door of the furthest habitable room to the apartment front entrance door. As a minimum, each protected internal hallway will be constructed from 30-minute fire-resisting construction with FD20 doors and an FD30S self- closing front entrance door; the FD20 doors in the hallway do not need to be self-closing.

If a Category LD1 system is provided the doors in the hallway could be upgraded to FD 20S doors as the cold smoke seals would not adversely affect the fire warning system.

There are two options for the provision of the protected hallways within the apartments. The bathrooms may be included within the hallway providing a fire resisting wall separates the bathrooms from the lounge/kitchen/diner.



Option 1 Protected internal hallway with bathroom *included*



Option 2 Protected internal hallway with bathroom *separated*

Means of Escape in Common Areas

The building may be considered as a small single stair building complying with diagram xx of ADB diagram 3.9.

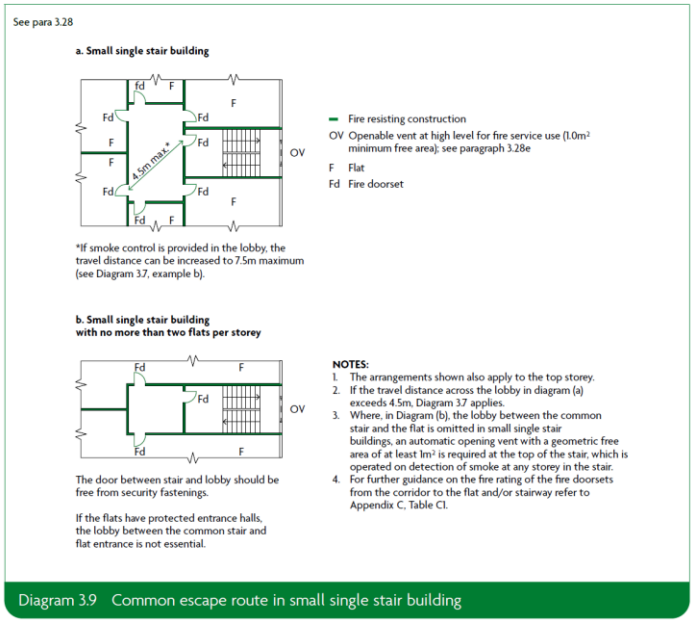


Diagram 3.9 Common escape route in small single stair building

The building may be considered as a 'small single stair building' because:

- The uppermost occupied storey is not more than 11m above the lowest surrounding ground level;
- The building does not have more than three upper-storeys above the ground storey; and
- The stair does not provide access to a covered car park or any ancillary accommodation unless these areas are separated from the stair with a lobby provided with at least 0.4m^2 permanent natural ventilation.

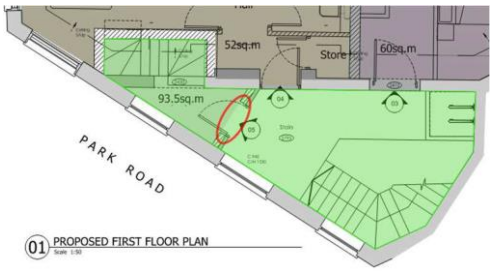
The store room at ground floor and cycle stands at ground and first floor should be removed, accessed externally only, or separated from the staircase by a ventilated lobby(min of 0.4m^2 permanent ventilation}
The cycle stands should be removed.
An AOV should be provided at the head of the stair with a minimum free opening area of at least 1.0m^2.

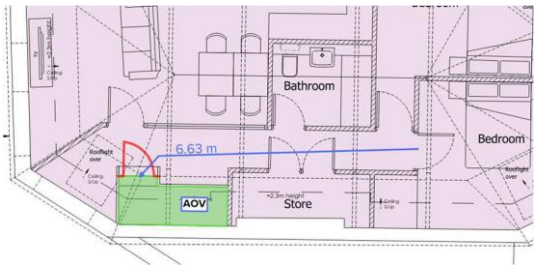
All apartments open directly into the single escape staircase. This is acceptable provided:

- The building is designed under "small single stair" guidance;
- All apartments are provided with protected internal hallways;
- An AOV is provided at the head of the stair with a minimum free opening area of at least 1.0m2 where apartments open directly into the staircase without a stair lobby: and
- There are no more than 2 apartments per storey.

The GA plans currently show an apartment at second-floor level, which is accessed via a short set of steps within the apartment leading to the first-floor of the staircase. This effectively provides the ground floor with 2 apartments and the first-floor with 3 apartments, which is not in accordance with the recommendations of ADB.

It would be possible to reconfigure the design to locate the second-floor apartment on a single floor level accessed directly from the protected staircase at the same level as the apartment.





Design adjustments - first-floor staircase ***Design adjustments - second- floor staircase/apartment***

In the diagrams above, the green shaded area represents the communal protected staircase enclosure, the red circled door in Figure 4 should be removed, the red door in Figure 5 should be added and an AOV should be provided at the head of the stair. uppermost part of the stair.

The red circled door in the diagram should be removed to allow the AOV at the head of the stair to ventilate all areas of the staircase.

The red door in diagram contains the second-floor apartment to the second-floor and allows it to be accessed from that level. This resolves the issue of there being 3 apartments accessed from the first-floor.

Means of Escape from courtyard

The GA plans currently show a courtyard area at ground-floor level served by "Fire Escape Stairs" from a first-floor apartment.
The design team should confirm if the courtyard area is enclosed (i.e., escape is only possible via the first-floor apartment), or if further escape is possible away from the building. If the courtyard is enclosed, it is not considered to be acceptable and the access to it should be removed. If further escape is possible from the courtyard away from the building, it should be considered acceptable for the stairs to remain as currently shown.
It should be clarified that these stairs are assumed to be existing; they are not proposed as a means of escape from this apartment and should not be utilised as such.

Exit widths

All exit widths in the building are above 750mm. To consider inclusive design it is recommended that widths are increased to 850mm. The width of the staircase is acceptable for escape purposes on the basis that it is sufficient for everyday use.

Single escape staircase design

The single escape staircase is designed as a protected staircase in a small single stair building. The stairway will be constructed as a protected route REI 60.
All apartments open directly into the staircase without a stair lobby and therefore an AOV must be provided at the head of the staircase which has a minimum free opening area of 1.0m^2.
The AOV must be located at the highest point of the staircase at second-floor level and be positioned higher than the uppermost edge of the second-floor apartment front entrance door to prevent any smoke build-up.

Final exit

The final exit from the building will be via the main entrance doors at the ground-floor of the staircase leading to the pavement of Park Road, from which point any occupants should be able to move as far away from the building as desired.
There are “Fire Escape Stairs” shown for one of the first-floor apartments, which are not required as part of the means of escape and should not be used as a final exit.

Ancillary accommodation

The building is provided with a refuse store, which is accessed solely from outside from the pavement of School Road. The bin store should be separated from all other areas of the building by REI 60 construction. There is a storeroom shown within the staircase at the ground-floor. This should either be removed, accessed solely from outside, or separated from the staircase by a lobby with at least 0.4m^2 permanent ventilation. If the storeroom is retained in any form, it should be enclosed in fire-resisting construction.

Cycle stands are also shown within the staircase at ground-floor and first-floor level. This is not acceptable as the protected staircase will need to be maintained as a relatively fire-sterile area (free of combustible items or any other hazards). These should be removed from the staircase or located within the storeroom when it is suitably designed in accordance with the previous paragraph.

Conclusion

CWB are of the opinion that the proposed means of escape design in the building is acceptable provided the recommendations of this report are implemented.

CWB will provide a fire strategy document to provide further detail on the Means of Escape provisions for the building, which would be suitable for use as part of a planning application or for submission to the relevant Approval Authorities.