

# 85 CONNAUGHT ROAD

RICHMOND UPON THAMES /// LONDON

RENOVATION AND EXTENSION

**Fire Strategy  
Initial Planning Stage  
AUGUST 2021**

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## 1.0 Introduction

This document is an initial planning stage fire strategy for a planning application at 85 Connaught Road. The proposed development includes renovating and extending the existing building to provide 6 self-contained dwellings in total.

## 2.0. Existing building

The existing building is two storeys and contains one flat on each storey served by one common entrance and stair. It is brick faced, with pitched tiled roof and front/rear gardens. Refer to Design and Access Statement for further details.

## 3.0 Proposals

The proposal is to increase the number of dwellings to six with each dwelling served by the same common stair and entrance. The existing roof is to be altered, including adding a new gable to accommodate a residential flat. A side extension is added to the existing outrigger at the rear and the existing basement is extended to the rear to accommodate the lower level of two duplex flats.

## 4.0 Purpose group

The purpose group of each compartment is 1(a) Flat as per the figure below.

Table 0.1 Classification of purpose groups		
Volume 1 purpose groups		
Title	Group	Purpose for which the building or compartment of a building is intended to be used
Residential (dwellings)	1(a) <sup>(1)</sup>	Flat.
	1(b) <sup>(2)</sup>	Dwellinghouse that contains a habitable storey with a floor level a minimum of 4.5m above ground level up to a maximum of 18m. <sup>(3)</sup>
	1(c) <sup>(2)(4)</sup>	Dwellinghouse that does not contain a habitable storey with a floor level a minimum of 4.5m above ground level.

## 5.0 Fire detection and alarm systems (dwellings)

All flats will have a fire detection and alarm system to minimum grade Grade D2 Category LD3 as per the figure below. This will include smoke detectors in internal dwelling hallways and heat detectors in kitchens.

## General provisions

- 1.1** All dwellings should have a fire detection and alarm system, minimum Grade D2 Category LD3 standard, in accordance with the relevant recommendations of **BS 5839-6**.

A higher standard of protection should be considered where occupants of a proposed dwelling would be at special risk from fire. Further advice on this is also given in **BS 5839-6**.

- 1.2** Smoke alarms should be mains operated and conform to **BS EN 14604**.

- 1.3** Heat alarms should be mains operated and conform to **BS 5446-2**.

- 1.4** Smoke and heat alarms should have a standby power supply, such as a battery (rechargeable or non-rechargeable) or capacitor. More information on power supplies is given in clause 15 of **BS 5839-6**.

**NOTE:** The term 'fire alarm system' describes the combination of components for giving an audible and/or other perceptible warning of fire.

### 6.0 Fire detection and alarm systems (communal areas)

Assessment by and coordination with an approved inspector/building control will be carried out to determine if a detection/alarm system is required as per the figure below.

## Blocks of flats

- 1.10** Each flat in a block should have alarms as set out in paragraphs 1.1 to 1.4. With effective compartmentation, a communal fire alarm system is not normally needed. In some buildings, detectors in common parts of the building may need to operate smoke control or other fire protection systems but do not usually sound an audible warning.

### 7.0 Design and installation of systems

The design and installation of the fire alarm is to be carried out to BS 5839 with certification provided.

## Design and installation of systems

- 1.14** Fire detection and alarm systems must be properly designed, installed and maintained. A design, installation and commissioning certificate should be provided for fire detection and alarm systems. Third party certification schemes for fire protection products and related services are an effective means of providing assurances of quality, reliability and safety.

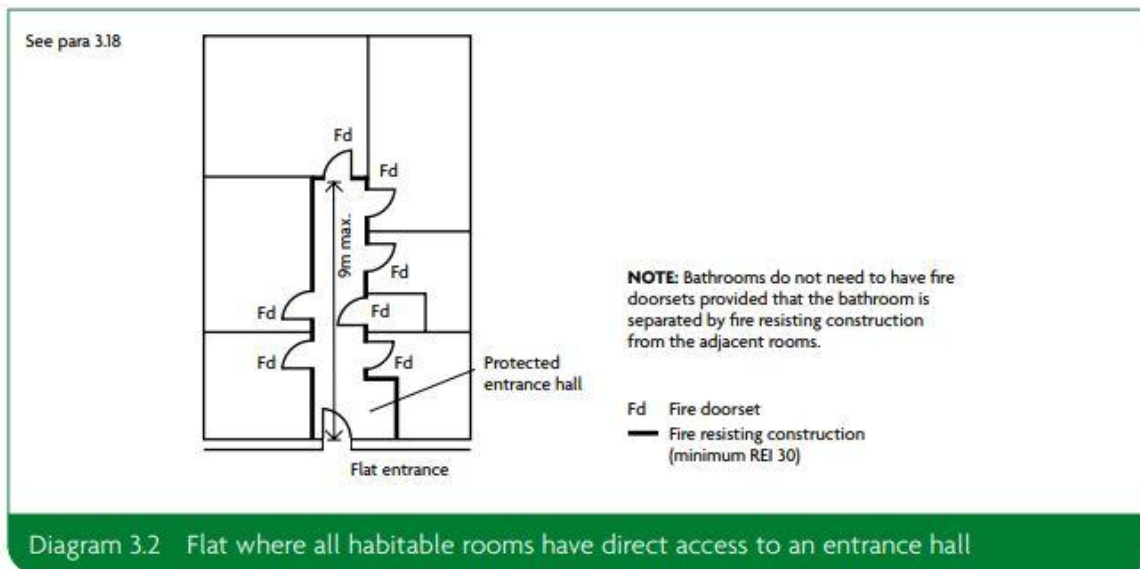
### 8.0 Protected entrance hall

The building has a single stair which serves six flats. The internal layout of each flat is such that the dwelling entrance door leads to a protected entrance hall with a minimum of 30min fire protection. Access to rooms is no more than 9m from the dwelling entrance. All doors shown are to be fire doors. Refer to figure below.

## Flats with storeys more than 4.5m above ground level

### Internal planning of single storey flats

- 3.18** One of the following approaches should be adopted, observing the **inner room** restrictions described in paragraphs 3.7 and 3.8.
- Provide a **protected entrance hall** (minimum REI 30) serving all **habitable rooms** that meets the conditions shown in Diagram 3.2.
  - Plan the **flat** to meet the conditions shown in Diagram 3.3, so that both of the following apply.
    - The **travel distance** from the **flat** entrance door to any point in any **habitable room** is a maximum of 9m.
    - Cooking facilities are remote from the main entrance door and do not impede the **escape route** from anywhere in the **flat**.
  - Provide an **alternative exit** from the **flat** complying with paragraph 3.22.



**Protected entrance hall/landing** A circulation area, consisting of a hall or space in a flat, that is enclosed with fire resisting construction other than an external wall of a building.

### 9.0 Protected stair

The building is designated a 'small single stair building' as the uppermost storey is not more than 11m above ground. The strategy employed can be seen in Diagram 3.9 on the Approved Document B Volume 1 Dwellings. Refer to figure below. As the internal flats have protected entrance halls (see section 8.0 of this document), a lobby between the stair and flat is not required (see highlighted yellow in the figure below). An Automatic Opening Vent is to be provided at the head of the stair (see blue highlighted portion below). The stair is to have a minimum 2m head height with artificial escape lighting conforming to BS 5266-1.



## Small single stair buildings

**3.28** For some low rise buildings, the provisions in paragraphs 3.26 and 3.27 may be modified and the use of a single stair, protected in accordance with Diagram 3.9, may be permitted where all of the following apply.

- The top storey of the building is a maximum of 11m above ground level.
- No more than three storeys are above the ground storey.
- The stair does not connect to a covered car park, unless the car park is open sided (as defined in Section 11 of Approved Document B Volume 2).
- The stair does not serve offices, stores or other ancillary accommodation. If it does, they should be separated from the stair by a protected lobby or protected corridor (minimum REI 30) with a minimum 0.4m<sup>2</sup> of permanent ventilation, or be protected from the ingress of smoke by a mechanical smoke control system.

**NOTE:** For refuse chutes and storage see paragraphs 3.55 to 3.58.

- Either of the following is provided for the fire and rescue service.
  - A high-level openable vent with a free area of at least 1m<sup>2</sup> at each storey.
  - A single openable vent with a free area of at least 1m<sup>2</sup> at the head of the stair, operable remotely at the fire and rescue service access level.

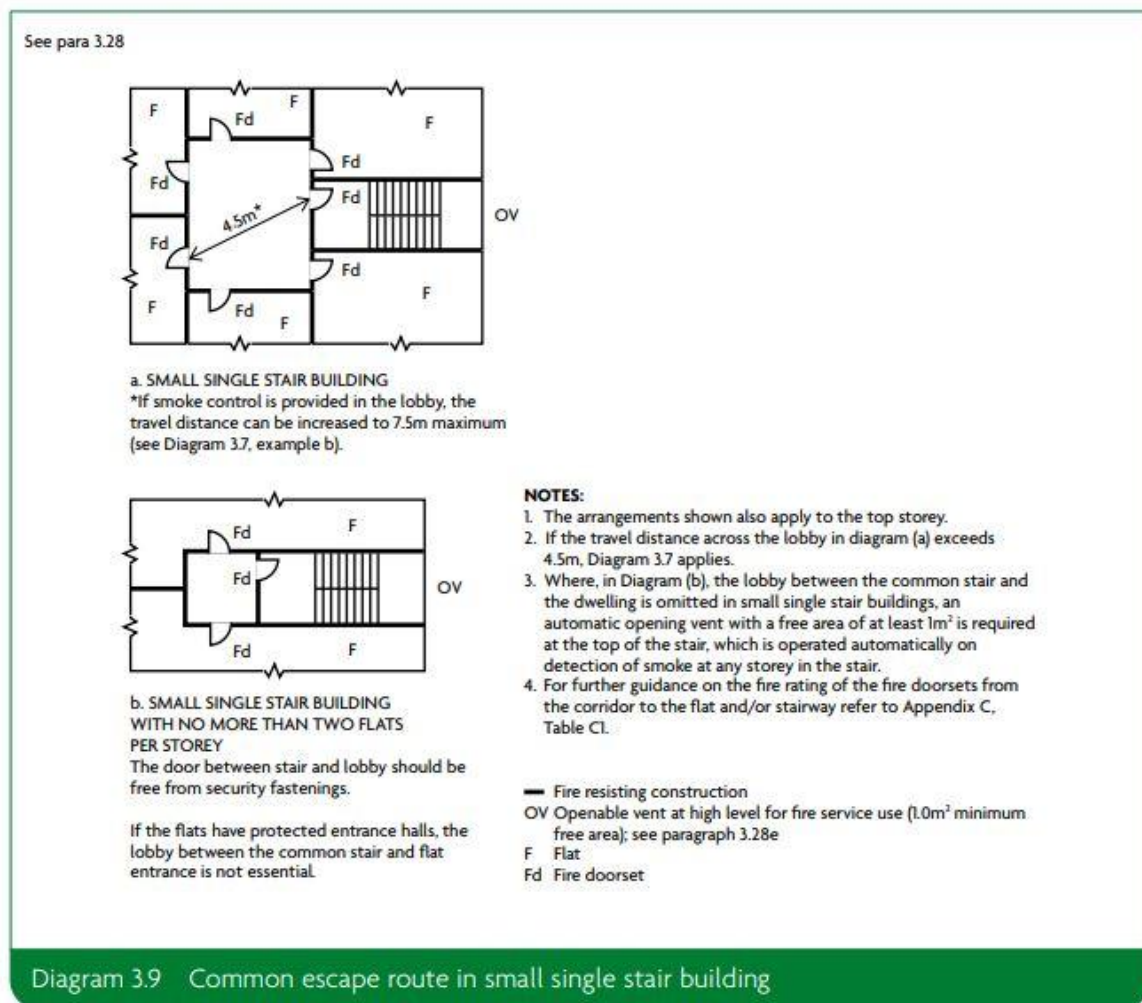


Diagram 3.9 Common escape route in small single stair building

3.34 Common corridors should be **protected corridors**. The wall between each **flat** and the corridor should be a **compartment wall** (minimum REI 30 where the top **storey** is up to 5m above ground level, otherwise REI 60).

### Exits from protected stairways

3.81 Every **protected stairway** should lead to a **final exit**, either directly or via a **protected exit passageway**. Any protected exit corridor or stair should have the same standard of **fire resistance** and lobby protection as the stair it serves.

3.53 In single stair **buildings**, smoke vents on the **storey** where the fire is initiated, and the vent at the head of the stair, should be activated by smoke detectors in the common parts.

## 10.0 Internal fire spread

**Table 4.1 Classification of linings**

Location	Classification
Small rooms of maximum internal floor area of 4m <sup>2</sup>	D-s3, d2
Garages (as part of a dwellinghouse) of maximum internal floor area of 40m <sup>2</sup>	
Other rooms (including garages)	C-s3, d2
Circulation spaces within a dwelling	
Other circulation spaces (including the common areas of blocks of flats)	B-s3, d2 <sup>(1)</sup>

**NOTE:**

1. Wallcoverings which conform to **BS EN 15102**, achieving at least class C-s3, d2 and bonded to a class A2-s3, d2 substrate, will also be acceptable.

## 11.0 Structural protection

6.1 Elements such as structural frames, beams, columns, loadbearing walls (internal and external), floor structures and **gallery** structures should have, as a minimum, the **fire resistance** given in Appendix B, Table B3.

**NOTE:** If one **element of structure** supports or stabilises another, as a minimum the supporting element should have the same **fire resistance** as the other element.

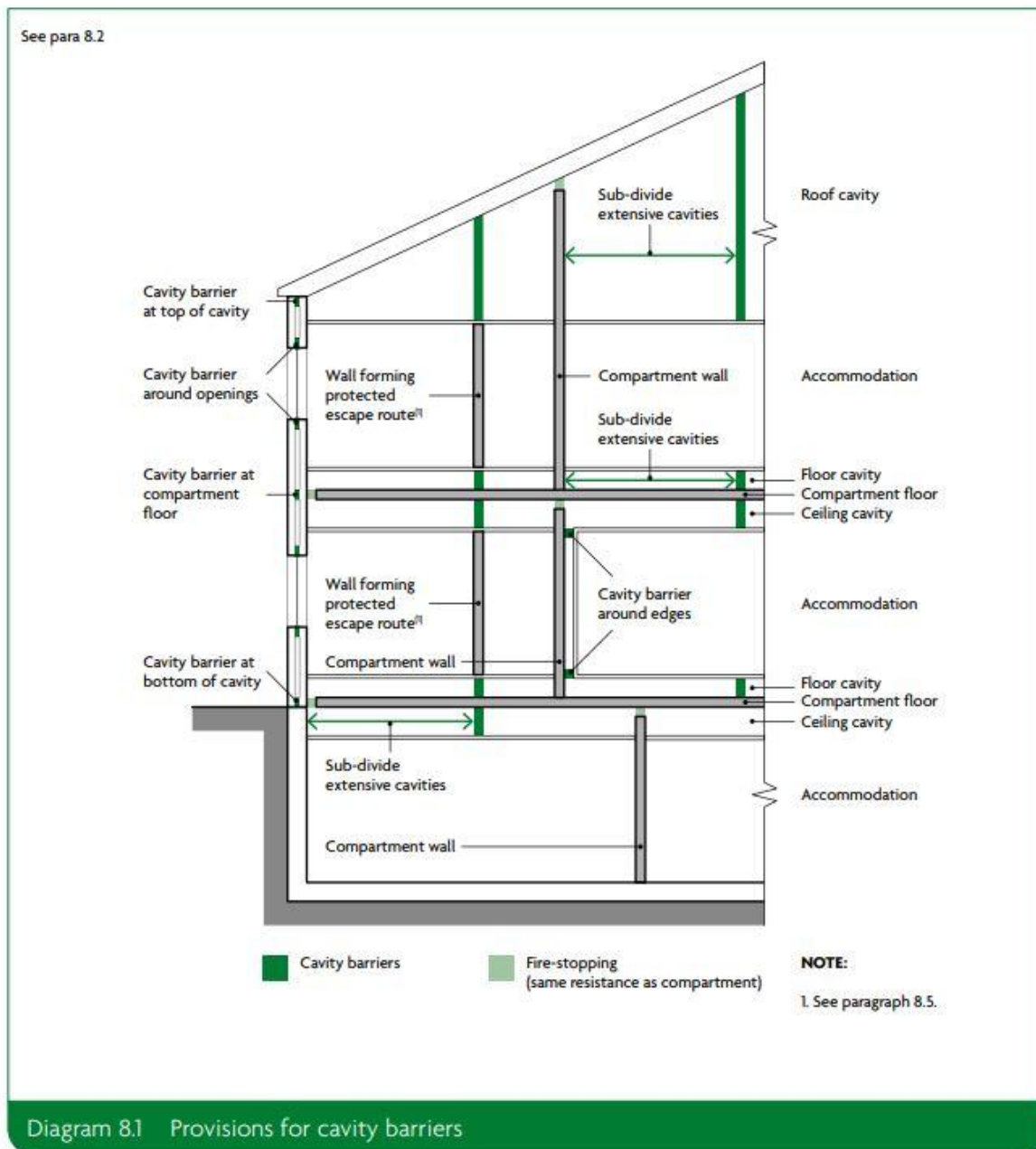
## 12.0 Compartmentation

### Provision of compartmentation

7.1 All of the following should be provided as **compartment walls** and **compartment floors** and should have, as a minimum, the fire resistance given in Appendix B, Table B3.

- Any floor and wall separating a **flat** from another part of the **building**.
- Any wall enclosing a refuse storage chamber.
- Any wall common to two or more **buildings**.

## 13.0 Cavity barriers



- 9.1 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.



## 14.0 External fire spread

### 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.

- 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.
- 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.

**Table 10.1 Reaction to fire performance of external surface of walls**

Building type	Building height	Less than 1000mm from the relevant boundary	1000mm or more from the relevant boundary
'Relevant buildings' as defined in regulation 7(4) (see paragraph 10.10)		Class A2-s1, d0 <sup>(1)</sup> or better	Class A2-s1, d0 <sup>(1)</sup> or better
Assembly and recreation	More than 18m	Class B-s3, d2 <sup>(2)</sup> or better	From ground level to 18m: class C-s3, d2 <sup>(3)</sup> or better From 18m in height and above: class B-s3, d2 <sup>(2)</sup> or better
	18m or less	Class B-s3, d2 <sup>(2)</sup> or better	Up to 10m above ground level: class C-s3, d2 <sup>(3)</sup> or better Up to 10m above a roof or any part of the building to which the public have access: class C-s3, d2 <sup>(3)</sup> or better <sup>(4)</sup> From 10m in height and above: no minimum performance
Any other building	More than 18m	Class B-s3, d2 <sup>(2)</sup> or better	From ground level to 18m: class C-s3, d2 <sup>(3)</sup> or better From 18m in height and above: class B-s3, d2 <sup>(2)</sup> or better
	18m or less	Class B-s3, d2 <sup>(2)</sup> or better	No provisions

**NOTES:**

In addition to the requirements within this table, buildings with a top occupied storey above 18m should also meet the provisions of paragraph 10.6.

In all cases, the advice in paragraph 10.4 should be followed.

- The restrictions for these buildings apply to all the materials used in the external wall and specified attachments (see paragraphs 10.9 to 10.12 for further guidance).
- Profiled or flat steel sheet at least 0.5 mm thick with an organic coating of no more than 0.2mm thickness is also acceptable.
- Timber cladding at least 9mm thick is also acceptable.
- 10m is measured from the top surface of the roof.



## 15.0 Fire appliance access

All points within each dwelling is within 45m of the kerbside along the route of a fire hose.

### Provision and design of access routes and hardstandings

- 13.1 For **dwellinghouses**, access for a pumping appliance should be provided to within 45m of all points inside the **dwellinghouse**.
- 13.2 For **flats**, either of the following provisions should be made.
  - a. Provide access for a pumping appliance to within 45m of all points inside each **flat** of a block, measured along the route of the hose.
  - b. Provide fire mains in accordance with paragraphs 13.5 and 13.6.

## 16.0 Conclusion

All of the above is subject to further detailed design and assessment by an approved inspector/local authority and London Fire Brigade. An approved inspector and/or local authority building control will be engaged to ensure building control compliance. The works are to comply with the Building Regulation Approved Documents, specifically Part B Fire Safety Volume 1 Dwellings. This document is for planning purposes only.