

# Fire safety statement

## 4 – 6 Ham Street

Ham, Richmond, TW10 7HT



21<sup>st</sup> April 2022

## Planning design

MUK10017 – Issue 01

# 1. Introduction

## 1.1 General

- 1.1.1 Mu.Studio (UK) Ltd have been commissioned by HCVP Ltd to provide fire safety consultancy services in support of the planning stage design for change of use and refurbishment of an existing public house building at 4 – 6 Ham Street in Ham, Richmond, TW10 7HT. Following refurbishment, the building will feature a vet's practice at Ground floor and a staff flat at First floor.
- 1.1.2 This report may be used in support further detailed design development. It is not intended to portray detailed design information for fire safety systems or construction specifications.
- 1.1.3 Any alternative design solutions suggested within this report are subject to agreement and eventual approval by the relevant authorities having jurisdiction (AHJs).

## 1.2 Legislation and basis of design

- 1.2.1 In support of demonstrating a suitable level of fire safety as expected by the London Plan 2021 [1], this report is developed in cognisance of the fire safety expectations of the Building Regulations 2010 (as amended), namely:
- Schedule 1, Part B1 – Means of warning and escape
  - Schedule 1, Part B2 – Internal fire spread (linings)
  - Schedule 1, Part B3 – Internal fire spread (structure)
  - Schedule 1, Part B4 – External fire spread
  - Schedule 1, Part B5 – Access and facilities for the fire and rescue service
- 1.2.2 The strategy has not been developed to include additional property protection enhancements or to meet the expectation of insurer requirements. Fire safety provisions as required by the Building Regulations will, to some extent, assist with the protection of property in a fire.
- 1.2.3 A suitable level of life safety will be achieved utilising the guidance in Approved Document B Volume 1 [2] and Volume 2 [3] (ADB1 & ADB2), as relevant. Fire engineering principles are employed to support alternative solutions where strict adherence to ADB guidance would conflict with the aspirations of the scheme. Unless otherwise stated, fire safety provisions are expected to be in accordance with the guidance in ADB as appropriate.

## 1.3 Reference information

- 1.3.1 This strategy is based on information provided by the client's representative as listed in Table 1. Additional contradictory information or subsequent design variations to the information supplied may render the findings and recommendations of this report invalid.
- 1.3.2 External references utilised in the generation of this report are summarised in Section 5.

Table 1 – Project documentation referenced

Description	Author	Document	Rev.
Block plan	Achievedesign	202202TW02	02
Proposed Ground floor plan		202203TW03	01
Proposed First floor plan (as existing)		202203TW04	01
Proposed roof plan (as existing)		202203TW05	-
NE, NW, SE & SW Elevations		202202TW07 - 10	-
Ground and First Floors Existing	Philips Tracey Architects	399-A-A-EXP-00	B

## 2. Development summary

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### 2.1 Location

- 2.1.1 The proposed development is for the refurbishment of an existing public house building at 4 – 6 Ham Street, Ham, Richmond, as indicated in Figure 1. Access to the building is from the adjacent Ham Street, available for use by fire service appliances as per the existing situation in this area.
- 2.1.2 The site is bounded by adjacent residential properties on the north, east, and south sides, with Ham Street to the west.

### 2.2 Description of proposal

- 2.2.1 The existing building features a public house at Ground floor and a staff flat at First floor, as indicated in Figure 2. The proposed works will include a remodelling and change of use to a vet's practice at Ground floor, though will retain the First-floor staff flat as existing. The proposed arrangements are included in Figure 3 and Figure 4.
- 2.2.2 Fire safety within the vet's practice is considered with respect to the guidance in ADB2, whereas the First-floor staff flat is considered using ADB1.
- 2.2.3 The staff flat is accessed via a private entrance at Ground floor, leading to an internal stair and hallway serving the bedrooms and living areas. The staff flat also features an external terrace, located on the roof of the Ground floor demise below.
- 2.2.4 The proposed building will not feature a lift, and as such, inclusion of an evacuation lift to meet Policy D5 (B5) of the London Plan 2021 is not expected.



Figure 1 – Existing location with site approximately indicated (image from Google Maps)

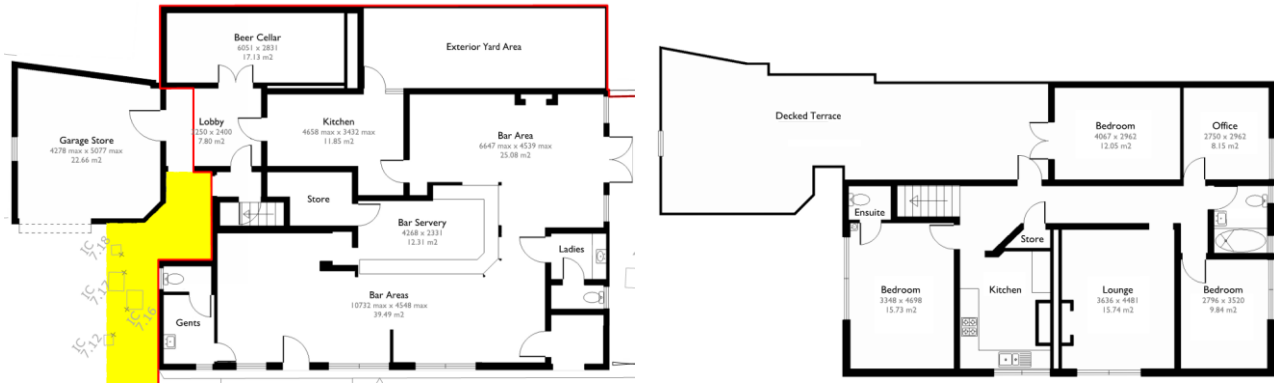


Figure 2 – Existing Ground floor (left) and First floor (right) arrangements

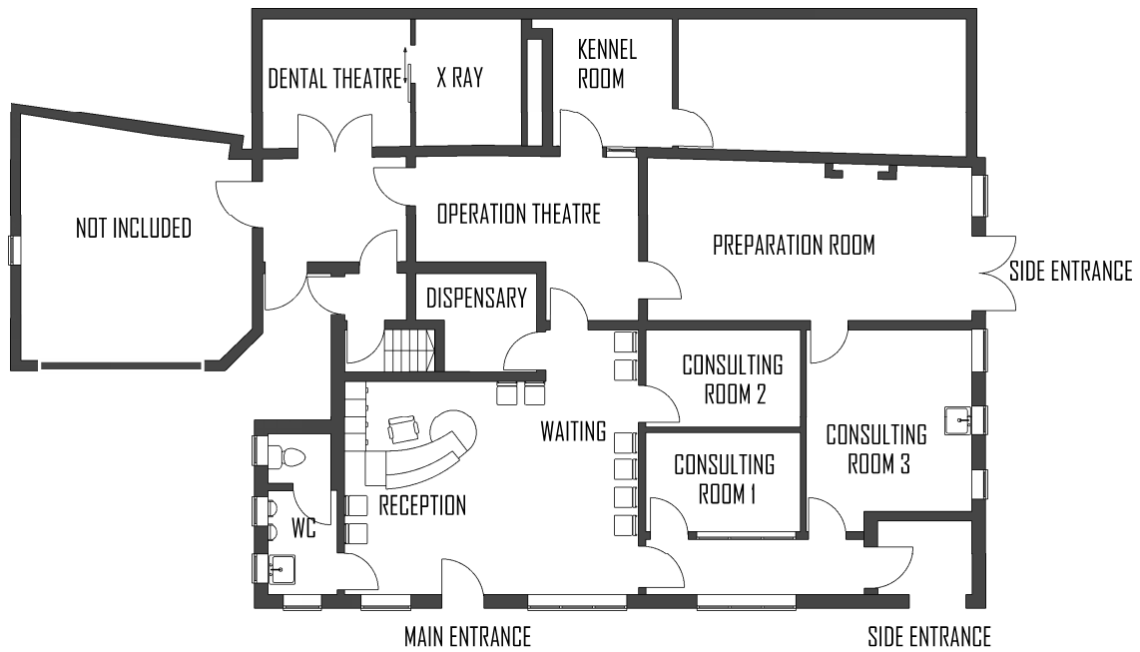


Figure 3 – Proposed Ground Floor plan

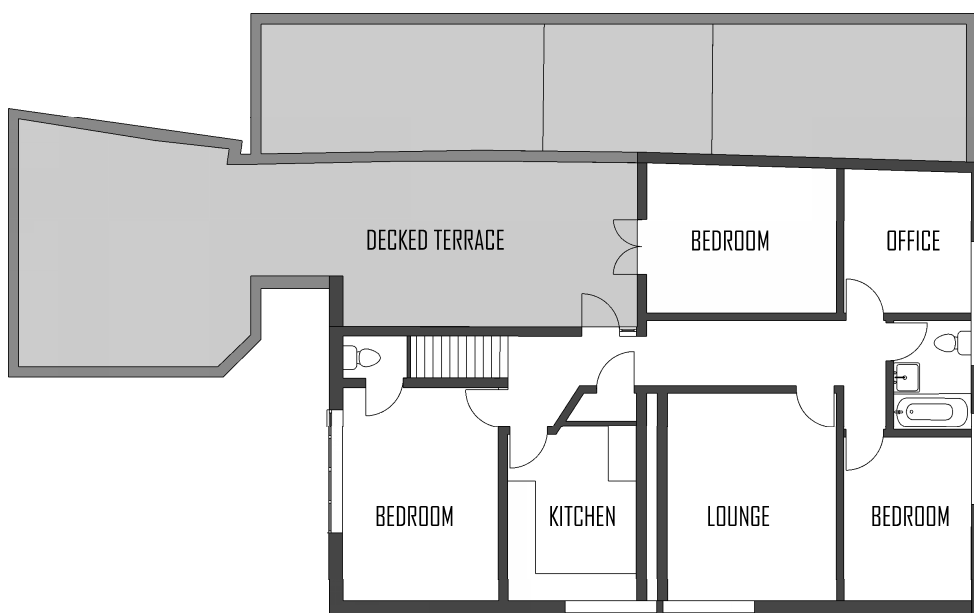


Figure 4 – Proposed First Floor plan (as existing)

## 3. Fire safety provisions

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### 3.1 Means of warning and escape – Staff flat

- 3.1.1 The staff flat is arranged in accordance with the expectations of Section 3.16(a) of ABD1, with all habitable rooms having an emergency escape window meeting the following recommendations:
- Having an unobstructed openable area of at least 0.33 m<sup>2</sup>, and a minimum dimension of 450 mm for both width and height, and the height of the window being no greater than 1,100 mm above the floor level.
  - The windows are capable of remaining open without being held.
  - Onward escape is available from the area below the windows without re-entering the building.
- 3.1.2 It is recommended that a Grade D1 Category LD2 or better detection and alarm system be installed within the staff flat in accordance with BS 5839-6 [4]. This requires smoke detection in the hallway / stair area and principal living spaces, and a heat detector in the kitchen area.
- 3.1.3 Each detector head is to incorporate an alarm sounder. In the event of any one detector head being activated the staff flat, the sounders in all heads in the staff flat should activate immediately.
- 3.1.4 The detector heads should be hardwired in accordance with the expectations of BS 5839-6. A wireless, battery-operated system will not be sufficient to meet contemporary guidance expectations. A Grade D1 system is recommended to allow flexibility for the staff flat to be rented.

### 3.2 Means of warning and escape – Vet's Practice

- 3.2.1 Means of escape from the vet's practice will be available to one of four final exits, having travel distances which do not exceed the limitations of 18 m in a single direction or 45 m where available in multiple directions as recommended in Table 2.1 of ADB2.
- 3.2.2 Inner rooms are proposed within the vet's practice, being Consulting room 2 and the Kennel rooms (where the Dispensary and X-Ray are only expected to be transiently occupied). In support of the proposed arrangement either:
- Vision panels of at least 0.1 m<sup>2</sup> are to be provided within the walls or doors separating the inner room and the associated access room, so people within the inner room could see if a fire starts within the access room; or
  - The access rooms are fitted with automatic detection and alarm, to give warning to occupants of the inner room in the event of a fire within the access room.
- 3.2.3 As a minimum, the vet's practice should be fitted with a Category M (manual) detection and alarm system in accordance with BS 5839-1 [5]. This would feature manual call points at each of the four final exits, to be installed in accordance with BS EN 54-11 Type A [6].

### 3.3 Construction

- 3.3.1 Materials used for the surface linings of internal walls and ceilings should meet the recommended classifications to BS EN 13501-1 [7] given in Section 4 of ADB1 and Section 6 of ADB2 as follows:
- Within the staff flat, small rooms less than 4 m<sup>2</sup> in area have linings of Class D-s3, d2 or better, and that all other locations feature linings of Class C-s3, d2 or better.
  - Within the vet's practice, small rooms less than 30 m<sup>2</sup> in area have linings of Class D-s3, d2 or better, circulation spaces have linings of Class B-s3, d2 or better, and that all other locations feature linings of Class C-s3, d2 or better. In circulation spaces wallcoverings which conform to BS EN 15102 [8] and achieve Class C-s3, d2 or better are also acceptable where these are bonded to a Class A2-s3, d2 or better substrate.

- 3.3.2 In accordance with Table B4 in ADB1 and ADB2, the building is to have a minimum structural fire resistance rating of 30 minutes where featuring no occupied floor greater than 5 m in height.
- 3.3.3 The floor separating the Ground floor vet's practice from the First-floor staff flat should also achieve a minimum fire resistance rating of 30 minutes for exposure from below.
- 3.3.4 In general, the fire resistance of the supporting structural elements and compartment floor be retained as no worse than in the existing condition. However, if the fire resistance rating of any structural or floor elements is reduced during the process of undertaking the refurbishment works, then the above recommendations for fire resistance should be reinstated as part of the works.
- 3.3.5 As the staff flat features window escape from each of habitable rooms, the partitions and doors enclosing the entrance hallway are not expected to be fire-resisting to meet the recommendations of ADB1. However, separation of the staff flat stair from the adjacent vet's practice should achieve a minimum fire resistance rating of 30 minutes, including use of a self-closing FD30S fire door at the existing connecting to the Ground floor areas.
- 3.3.6 Construction separating the garage area from the wider building is recommended to achieve a fire-resistance rating of at least 30 minutes, including a self-closing FD30 fire door.
- 3.3.7 Onward escape will typically be in a direction away from the building. As such, additional fire rated construction in the external walls to support onward escape is not expected. The exception to this is the rear / staff flat exit, which exits via a passageway between the garage and reception area. Fire-resisting construction rated to at least 30 minutes is recommended to be provided to a height of at least 1,100 mm for the external walls in this area, to support escape away from the building.
- 3.3.8 The external walls are to be retained as per the existing condition at the development, with the proposed changes being limited to the internal areas only. The exception to this is in the new kennel area, where an existing external courtyard area is to be enclosed. As such, the external wall of this area which is co-incident with the eastern site boundary is to achieve a fire resistance rating of at least 30 minutes, where exposed from each side separately, to meet the expectations of Table B3 in ADB2.
- 3.3.9 The recommended minimum fire resistance rating for elements of compartmentation are indicated on the mark-ups in Section 4. Manufacturer's guidance, such as the White Book by British Gypsum, should be referred to when selecting floor or drywall build-ups to ensure systems with suitable fire resistance ratings are used.
- 3.3.10 An existing pitched clay tile roof is present at the existing building, with an area of flat roof also present above the garage area and used for the staff flat terrace. These areas of roof shall be retained as no worse than in the existing condition with respect to the fire classification of roof materials present.
- 3.3.11 A new area of roof will be provided to enclose the kennel area. As this is located within 6 m of the site boundary, ADB2 recommends that roof coverings used in this area should achieve Class B<sub>roof</sub>(t4) or better to BS EN 13501-5 [9].

#### 3.4 Fire service access and facilities

- 3.4.1 Fire appliances will continue to be able to use Ham Street as a hardstanding area outside the building. An existing public fire hydrant is present adjacent to the Ham General Store as indicated in Figure 5, being approximately 45 m from the hardstanding area. This will offer a suitable firefighting water supply for use by the pumping appliance, where within the 90 m distance recommended by ADB.
- 3.4.2 As the vet's practice and staff flat are each accessed directly from outside, no internal features to support firefighting (such as firefighting lifts or stairs, smoke extraction, dry rising mains, etc.) are expected by ADB1 or ADB2, nor will be provided.
- 3.4.3 ADB1 recommends that for an unsprinklered dwelling not supported by internal firefighting features, access for a pump appliance should be provided to a location within 45 m of all points inside the dwelling measured along a route suitable for laying hose. This is achieved for the existing staff flat and

will be maintained following refurbishment, with a total hose laying distance of circa 35 m being present as indicated in Figure 6 (with an additional circa 8 m of hose laying to reach the hardstanding area at the public road).

- 3.4.4 Section 15.1(b) of ADB2 recommends that all areas of the footprint of the vet’s practice should be located within a 45 m distance of a pump appliance hardstanding. This is achieved at the existing building and will be maintained at the proposed development where all areas are within circa 20 m of fire appliance access route.

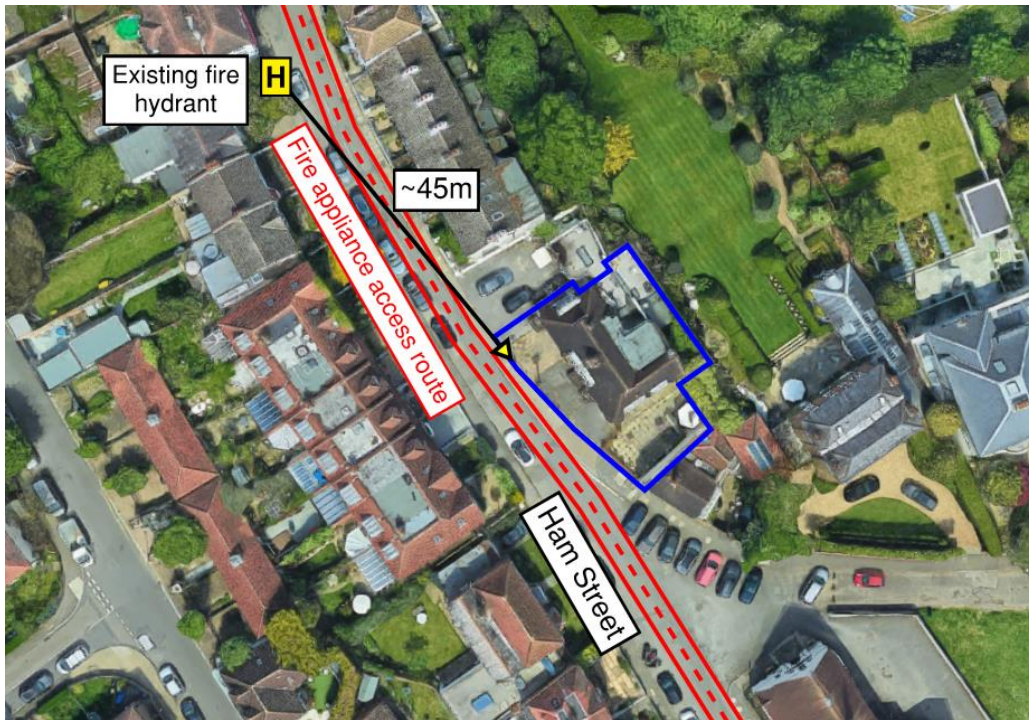


Figure 5 – Firefighting vehicle access and water supplies

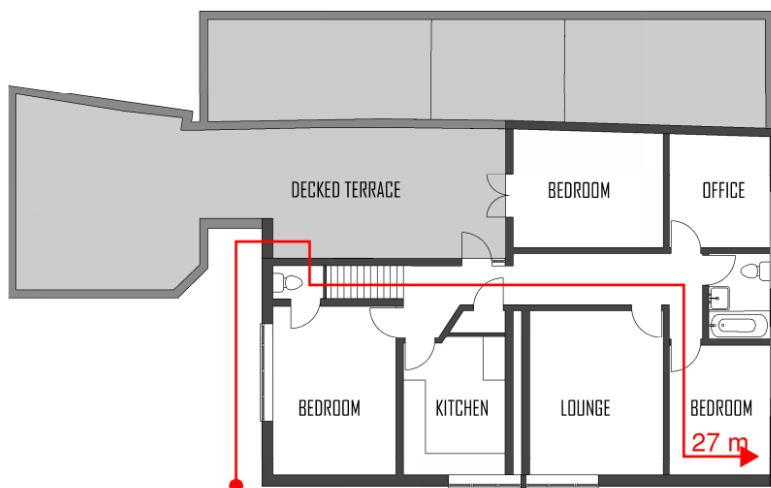


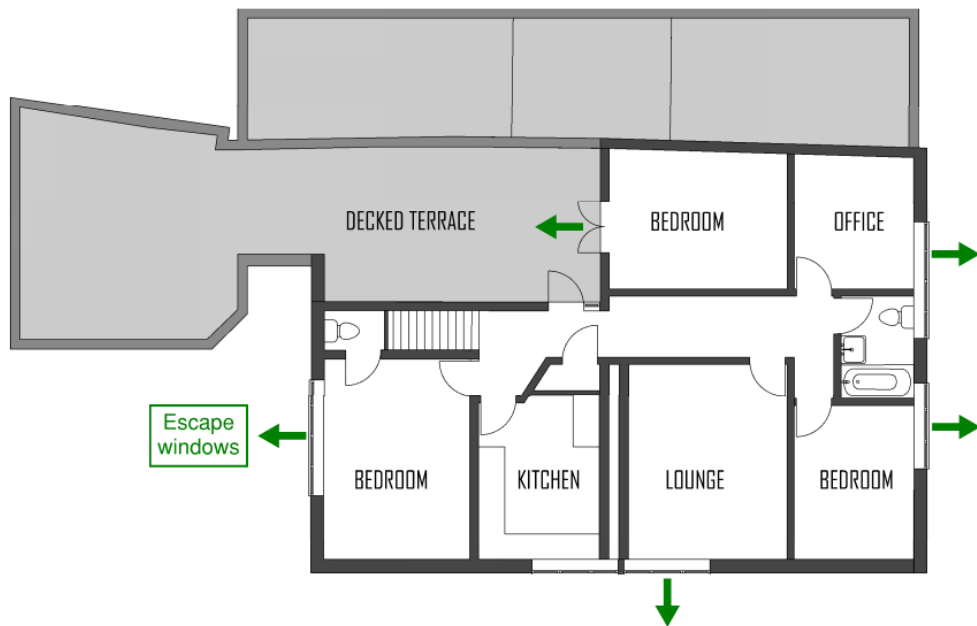
Figure 6 – Hose laying to First floor areas

### 3.5 Automatic suppression systems

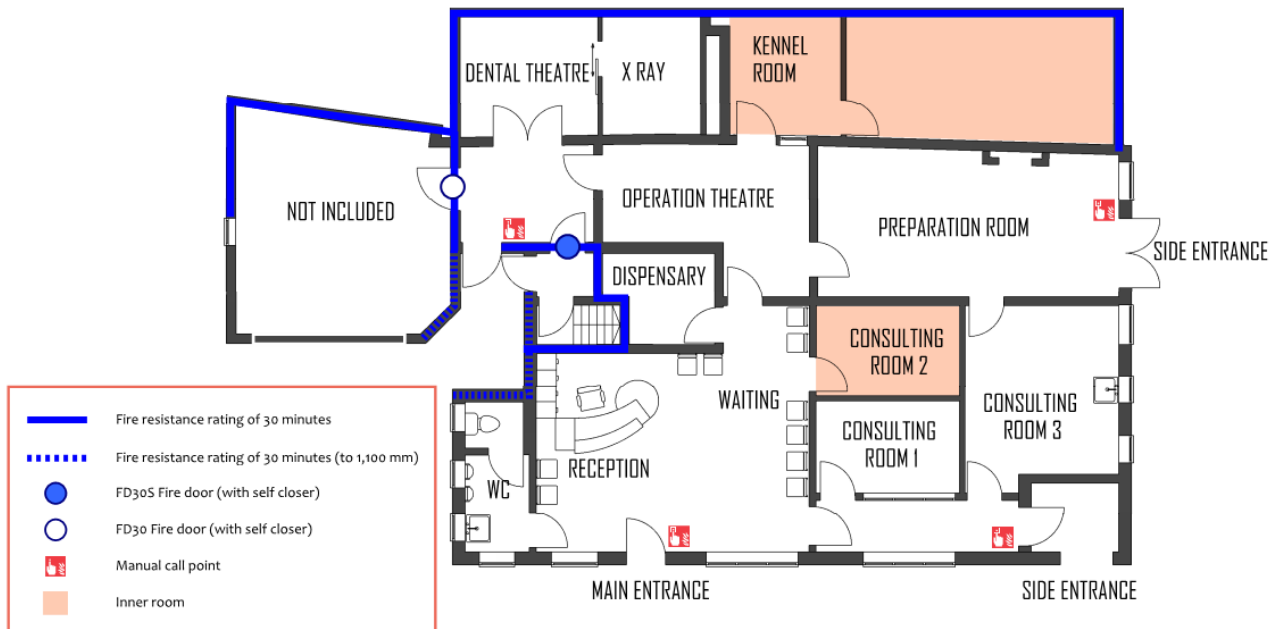
- 3.5.1 Automatic suppression is not expected within the development either to meet the expectations of contemporary guidance or as an additional mitigation measure. As such, automatic suppression is not included as a recommendation within this fire statement report. Future incorporation of an automatic suppression system may be at the discretion of the building owner.

## 4. Fire-resisting construction mark-ups

First floor:



Ground floor:





## 5. External references

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- [1] Mayor of London, "The London Plan," Greater London Authority, London, 2021.
- [2] MHCLG, "Approved Document B Volume 1: Dwellings (2019 Edition incorporating 2020 amendments - for use in England)," Online Version, London, 2020.
- [3] MHCLG, "Approved Document B, Volume 2 - Buildings other than dwellinghouses (incorporating 2020 amendments)," NBS for the Department for Communities and Local Government, London, 2020.
- [4] BSI, BS 5839-6:2019 + A1:2020 Fire detection and fire alarm systems for buildings - Part 6: Code of practice for the design, installation and maintenance of fire detection and fire alarm systems in dwellings, London: British Standards Institution, 2019.
- [5] BSI, "BS 5839-1:2017 Fire detection and fire alarm systems for buildings - Part 1: Code of practice for design, installation, commissioning and maintenance of systems in non-domestic premises," British Standards Institute, London, 2017.
- [6] BSI, "BS EN 54-11:2001+A1:2006 Fire detection and fire alarm systems - Part 11: Manual call points," British Standards Institute, 2006.
- [7] BSI, "BS EN 13501-1:2018 Fire classification of construction products and building elements. Classification using data from reaction to fire tests," British Standards Institute, London, 2018.
- [8] BSI, "BS EN 15102:2007 + A1:2011 Decorative wall coverings. Roll and panel form," British Standards Institution, London, 2007.
- [9] BSI, "BS EN 13501-5:2005 Fire Classification of construction products and building elements - Classification using test data from external fire exposure to roof tests," British Standards Institute, London, 2005.

