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Townsend Yard, London N6 5JF

Fire Strategy

Client: Executec Ltd 28 Manchester Street London W1U 7LF

July 2023 – Revision 2.0

Notice

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This report is formulated on the basis that the information and experience available at the time of preparation. It is applicable to Townsend Yard, London N6 5JF project only in accordance with the Client's instructions. It is only valid provided no other modifications are made, other than those for which a formal opinion has been sought and given by the FireRA Limited.

Document history

Revision	Purpose description	Author	Checked	Authorised	Date
1.0	Draft for comment	GM	KW	KW	16/05/2023
2.0	Option of removing sprinkler subject to Fire Pump Swept Path acceptance. Proposal of a passage from Townsend Yard to the cottage rear garden.	GM	KW	KW	21/07/2023

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Executive Summary

FireRA limited has been appointed by Executec Ltd to assist and provide advice with regards to the fire safety design of Townsend Yard, London N6 5JF. The project consists of a redevelopment of an existing hardstanding and small block of garages off Townsend Yard, north of Highgate High Street, to provide 7 new residential units. The proposed scheme will comprise of a new residential development, including 4no. three-bedroom, three storey townhouses, 2no. two-bedroom, two storey townhouses and 1no. one bedroom, two storey townhouses.

It is intended that this report assists the client and design team in progressing the detailed fire safety provisions for the project.

This fire safety strategy has been developed to satisfy the life safety requirements with respect to fire under the Building Regulations 2010 (including amendments). This has been achieved through compliance with the prescriptive recommendations for life safety of BS 9991. In line with the objectives set by the client, the strategy has not been developed to include any additional specific measures for the protection of property. However, features that are included for life safety will contribute to some extent to property protection and business continuity.

The height of the top-most storey four 3-stories dwellinghouses is less than 7.5m above ground floor level whilst the height of the top-most three stories dwellinghouses is less than 7.5m above ground floor level. Each house will be accessed directly from the street and will feature a single protected stair core that will be used as means of escape.

A 'defend-in-place' evacuation regime will be adopted, whereby only the occupants within the dwelling of fire origin will be signalled to escape upon detection of a fire. Occupants elsewhere in the complex may escape on their own accord, on becoming aware of a fire, or under the direction of the fire and rescue service if deemed necessary.

The building is provided with a high degree of compartmentation, separating all dwellings, and giving protection to the means of escape.

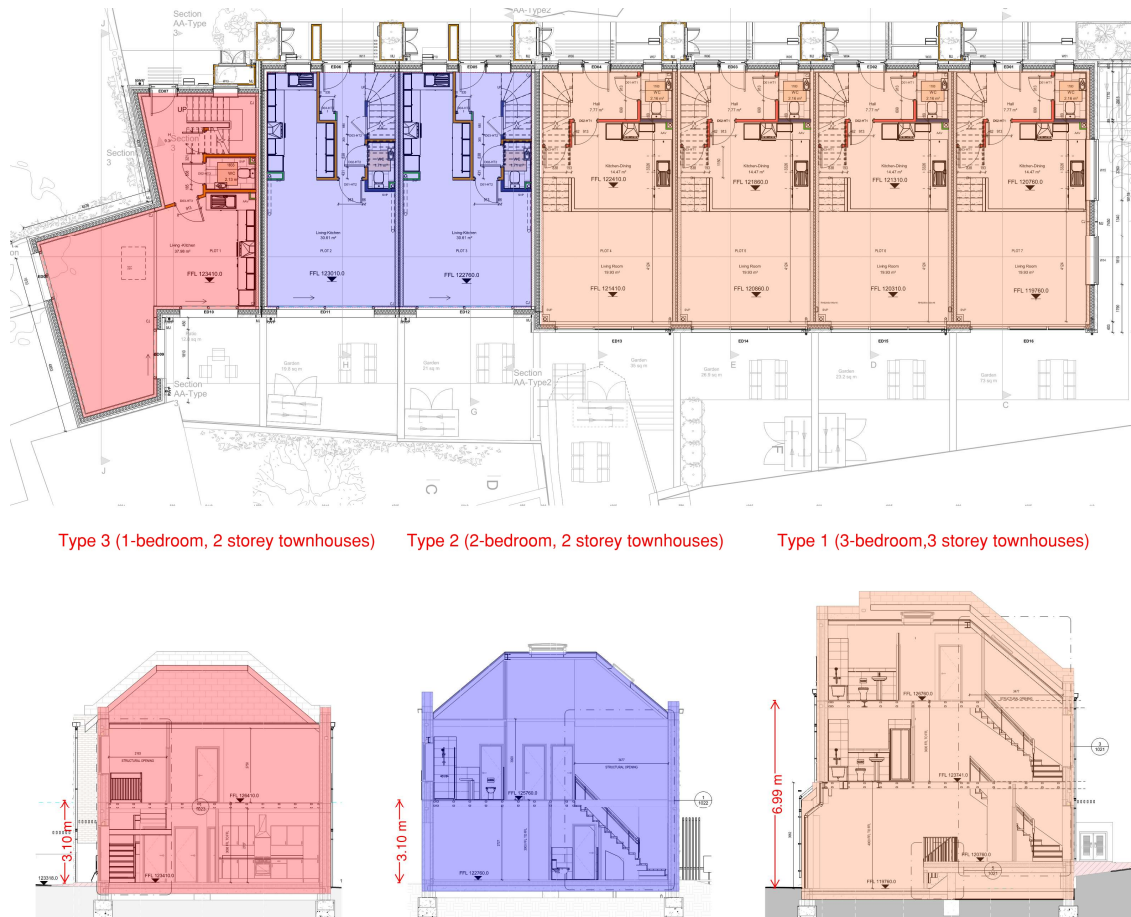
Fire-fighting operations will be carried out through a combination of vehicle access and fire-fighter dwellings internal access via protected stairs. Suitable water supplies will be provided to the site via the public fire hydrant network (exact location to be further confirmed). Any internal point of any dwellinghouse will be reached within 45m hose distance. If fire pump swept path described in Chapter 12 is considered not suitable and the Fire Pump Tender is able to reverse only 20m into Townsend Yard, an automatic sprinkler system designed in accordance with BS 9251:2021 will be provided in dwellings which do not meet the 45m hose distance criteria. A passage, accessible by fire brigade key and kept clear at all time, will be available to fire personnel to reach the rear of the listed Cottage.

Non-exhaustive guidance has been provided within the appendices of this report relating to management issues. Under CDM legislation and Regulation 38 of the Building Regulations, this report should be provided to tendering contractors and building management to assist with the ongoing provision of fire safety within the development.

1 Introduction and Building Description

- 1.1 FireRA limited has been appointed by Executec Ltd to produce a Fire Strategy for seven new townhouses located in Townsend Yard, London N6 5JF.
- 1.2 Townsend Yard, London N6 5JF consists of redevelopment of an existing hardstanding and small block of garages off Townsend Yard, north of Highgate High Street, to provide 7 new residential units. The proposed scheme will comprise a new residential development, including 4no. three-bedroom, three storey townhouses, 2no. two-bedroom, two storey townhouses and 1no. one bedroom, two storey townhouses.
- 1.3 According with AB:B Volume 1, the three storey townhouse, labelled as Type 1 in Figure 1, are dwellinghouse with one storey more than 4.5m above ground level, and the two storey townhouses, labelled as Type 2 & 3 in Figure 1, are dwellinghouse with upper storeys no more than 4.5m above ground level.

Figure 1 – Height of the building



2 Aim and objectives

- 2.1 This report is intended to document the strategic design rather than provide detailed construction and specification information. The wider project documentation (prepared by other members of the design team) should be consulted to obtain the detailed information necessary to establish how this strategy has been implemented.

3 Legislation

- 3.1 Fire safety in buildings is governed by two pieces of legislation in the UK. The Building Regulations 2010, Part B, Fire Safety applies to building design, whilst for fire safety management in buildings, compliance with the Regulatory Reform (Fire Safety) Order 2005 (FSO) is needed.

Building Regulations 2010

- 3.2 The conversion works will be subject to the operation of the Building Regulations 2010. It will be necessary, therefore, for the fit-out works to meet the functional requirements of Part B of Schedule 1 of those Regulations. The strategy has been developed to satisfy the requirements for fire safety under the Building Regulations 2010, namely:

- B1 – Means of warning and escape
- B2 – Internal fire spread (linings)
- B3 – Internal fire spread (structure)
- B4 – External fire spread
- B5 – Access and facilities for the fire and rescue service

- 3.3 Compliance with these requirements will be based on the guidance contained within ADB:2019 Edition including 2020 amendments. Where it is not possible to achieve compliance with standard guidance, solutions based on engineered approaches are permissible.

Construction (Design and Management) Regulations 2015

- 3.4 Construction projects undertaken in Great Britain and Northern Ireland are subject to the requirements of the **Construction (Design and Management) Regulations 2015** (CDM Regulations).
- 3.5 The objective of the CDM Regulations is to reduce risk to health and safety during construction and maintenance of construction sites and occupied buildings. To fulfil their duties under CDM Regulation 29, contractors should ensure, as far as reasonably practicable, that the early installation and operation of fire protection measures contained within this report and any others required as part of the contractor's construction phase fire safety plan.
- 3.6 Where any conclusions or recommendations are arrived at which specify materials, products or forms of construction that result in significant or unusual risks during the construction, operation, maintenance, or refurbishment of the building, these should be assessed in accordance with CDM Regulations 9 and 11 (duties for designers).

Regulatory Reform (Fire Safety) Order 2005

- 3.7 The **Regulatory Reform (Fire Safety) Order 2005** (RRFSO) places a general duty of fire safety care on employers, occupiers, and owners (Responsible persons) of defined premises and requires them to take such fire precautions as may be reasonably required to ensure that premises are safe for the occupants and those in the immediate vicinity (Relevant persons).

- 3.8 The responsible person has a duty of conducting a fire risk assessment which should focus on the safety in case of fire for all relevant persons. The risk assessment should pay attention to those considered especially at risk, such as the disabled and those with special needs and should include consideration of any dangerous substance likely to be on the premises.
- 3.9 Regulation 38 of the Building Regulations and the FSO have been drafted to ensure coordination between design and operation phases of buildings. Ideally, the design should reflect the operational intent. Therefore, although compliance with the Building Regulations ensures the minimum standard of safety, additional or alternative measures may be necessary to enable the operational intent and compliance with the FSO. Therefore, where known or foreseeable, the operational intent has been incorporated into the design.
- 3.10 This fire safety strategy report should form part of the fire safety information, as required by the FSO, and should be handed to the responsible person in accordance with Regulation 38 of the Building Regulations. In addition, the final detailed fire strategy document should be used to form the initial stage of a fire risk assessment for the occupied premises as it details the key fire safety design objectives and provisions provided in the building.
- 3.11 The local fire and rescue service may inspect the premises once occupied, as the enforcing authority for the FSO, but they do not carry out a fire risk assessment, they audit and inspect the premises and will expect that a fire risk assessment has been done.
- 3.12 The responsible person is required to undertake and continually review a fire risk assessment to ensure that no relevant persons are not placed at risk from a fire within the premises. FireRA has not been appointed to undertake a fire risk assessment for the premises but can provide this service for an additional fee.
- 3.13 It should be noted that a fire risk assessment should be undertaken on occupation of the premises and updated, as necessary, should significant alterations be made to the layout of the building, use of the building, or changes in occupancy numbers above those originally identified.

4 Drawings and assumptions

- 4.1 This report has been developed based on the information produced by Stephen Davy Peter Smith Architects & Powarchitect listed in Table 1 below.
- 4.2 Any revision made to the documents listed in Table 1 may invalidate the fire safety solutions proposed in this report and should be discussed with a competent fire safety professional to determine what impact the changes may have on the fire safety strategy for the building.

Table 1 **Reference documents**

Document title	Document reference	Revision	Date
Existing Site Plan	TSY-DS-01-ZZ-DR-A-P010-S2	P1	28/05/20
Location Plan	TSY-DS-01-ZZ-DR-A-P000-S2	P0	28/05/20
Proposed Site Plan	TSY-DS-01-ZZ-DR-A-P010-S2	P4	17/08/20
Proposed East & West Elevations	TSY-DS-01-ZZ-DR-A-P210-S2	P2	29/05/20
Proposed Section II	TSY-DS-01-ZZ-DR-A-P306-S2	P0	01/10/20
Ground Floor Plan	1003	C5	October 21
First Floor Plan	1004	C1	October 21
Second Floor Plan	1005	C1	10/07/21
Elevation-Front-West	1006	C1	March 20
Elevation-Rear-East	1007	C1	07/21/22
Side Elevations	1008	C1	07/21/22
Section AA	1010	C1	04/0621
Section BB	1011	C1	March 20
Sections Survey Levels	1012	C1	16/05/22
Roof Plan	1020	C1	March 20
Swept Path Assessment-Servicing	2012/07	N/A	Sept 2020

5 Design guidance

- 5.1 The fire safety design approach adopted in this strategy is to comply with the recommendation given in ADB:2019, to achieve a reasonable standard of fire safety.
- 5.2 For any fire safety issue under consideration that is not specifically addressed in ADB:2019, the guidance given in BS 9991:2015, or a fire engineering design solution, has been used to demonstrate compliance with the Building Regulations.
- 5.3 This fire safety strategy details the provisions proposed for the development to meet the functional life safety requirements contained within B1 to B5 of the Building Regulations 2010 (as amended).

6 Limitations

- 6.1 The building design proposals detailed within this report relate to Townsend Yard - project only and should not be used for any other purposes.

- 6.2 Building control approval for the townhouses has not yet been granted and some of the proposals within this fire safety strategy report may require further discussions with the building control body to gain their formal approval.

7 Means of warning and escape

Evacuation overview

- 7.1 The general philosophy for means of escape is that the occupants of a building should be able to turn their back on a fire and escape via the nearest exit without additional assistance from other occupants or fire fighters. In the first instance, this is achieved by limiting travel distances and providing sufficient exit widths. If necessary, alternative escape routes and escape routes with a specified period of fire resistance should also be considered.

Fire evacuation strategy

- 7.2 The design of residential accommodation is not led by the number of occupants. The residential accommodation strategy is premised upon a defend-in-place procedure. Therefore, occupants in the residential dwellinghouse (other than the dwellinghouse of fire origin) may escape at their own pace.

Fire detection and alarm systems

- 7.3 In accordance with BS 5839-6:2017 a Grade D2 Category LD2 should be installed inside each dwellinghouse. Grade D2 is a system of one or more mains-powered detectors, each with an integral standby supply consisting of a user-replaceable battery or batteries. Category LD2, a system incorporating detectors in all circulation areas that form part of the escape routes from the premises, and in all specified rooms or areas that present a high fire risk to occupants, including any kitchen and the principal habitable room.
- 7.4 Heat detectors should be installed in every kitchen. A smoke detector should be installed in the principal habitable room. Where more than one room might be used as the principal habitable room, a smoke detector should be installed in each of these rooms. The detector in the principal habitable room (but not the kitchen) may alternatively be a carbon monoxide fire detector. However, consideration needs to be given to the potential for false alarms from a smoke detector in the lounge if a kitchen opens directly into, or is combined with, the lounge.

Internal planning of the houses

- 7.5 Guidance for houses above 4.5m has been followed for the Type 1 units and guidance for houses below 4.5m has been followed for Type 2 & 3 units.

Escape from upper storeys a maximum of 4.5m above ground level

- 7.6 In accordance with Diagram 2.1 (b) of AD:B (see Figure 2), all habitable rooms (excluding kitchens) should have either of the following:
- An emergency escape window or external door
 - Direct access to a protected stairway
- 7.7 As the rear windows are leading to an enclosed space with exit only possible through other buildings (e.g. a courtyard or back garden), with the length of the enclosed space less than the height of the dwellinghouse above ground level, a protected stair case is provided (see Figure 3). A protected stairway is separated from the rest of the house by fire resisting construction (minimum REI 30) at all storeys and extend to a final exit.
- 7.8 Cavity barriers or a fire resisting ceiling (minimum EI 30) should be provided above a protected stairway enclosure.

Figure 2 - Means of escape from dwellinghouses with upper floor less than 4.5m

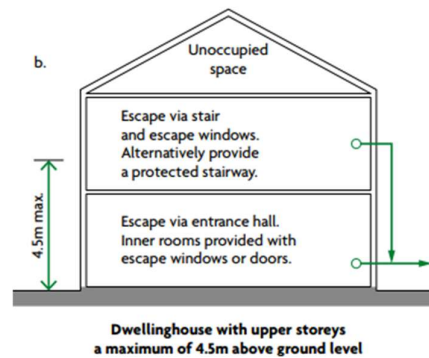
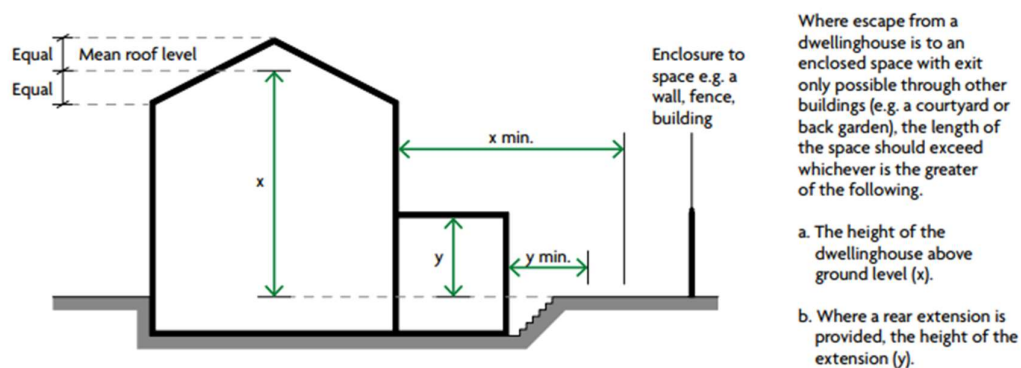


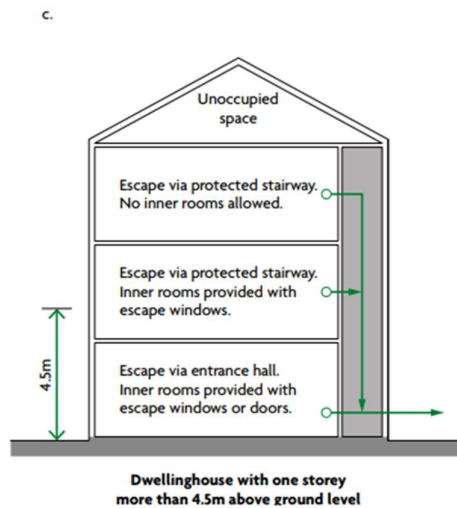
Figure 3 - Storey exit into an enclosed space



Escape from upper storeys more than 4.5m above ground level

- 7.9 Dwellinghouses with one storey more than 4.5m above ground level are provided with a protected staircase. A protected stairway is separated from the rest of the house by fire resisting construction (minimum REI 30) at all storeys and extends to a final exit.
- 7.10 Cavity barriers or a fire resisting ceiling (minimum EI 30) should be provided above a protected stairway enclosure.

Figure 4 - Means of escape from dwellinghouses with upper floor more than 4.5m



- 7.11 Where the kitchen are not enclosed from the adjacent living area separation of cooking facilities from escape routes should not be less than 1800mm measured from the centre of the hob. In type 1 dwellinghouses this will be achieved interchanging the position of the hob with the position of the sink.

8 Internal Fire Spread

Wall and ceiling linings

- 8.1 The wall and ceiling linings within the units shall meet the following classifications for flame spread and heat release rate characteristics:
- The internal circulation areas within units and any room with an area greater than 4m² will have linings with a minimum class of C-s3, d2 rating for surface spread of flame.
 - Small rooms of maximum internal floor area of 4m² will have linings with a minimum class of D-s3, d2, for surface spread of flame.

Loadbearing elements of structure

- 8.2 In dwellinghouse of 3 stories or less elements of structure should be minimum R 30.
- 8.3 Any structure that only supports a roof does not require any fire protection.

Compartmentation

- 8.4 Every floor should be designed as a compartmented floor and will provide a minimum of 30 minutes fire resistance (R30) and 15 minutes insulation (EI15).
- 8.5 The protected stairs, and service risers should be provided with a minimum of 30 minutes fire resistance (REI 30).
- 8.6 Each unit should be provided with a minimum of 60 minutes fire resisting construction (REI 60) between adjacent units and the common corridor.
- 8.7 The bin stores at ground level will be provided with a minimum of 60 minutes fire resisting construction (REI 60)
- 8.8 Table 2 gives the recommended levels of fire compartmentation in accordance with ADB:2019, Tables B3 and B4.

Table 2 Compartmentation

Floor / wall Location	Fire rating
Structural frame, beam, or column and Loadbearing walls	R 30
Compartment wall between houses	REI 60
External wall >1m from boundary	RE 60/REI 15
Internal floors	RE 30/REI 15
Internal Protected stairway/service riser	REI 30
Cavity barrier	E 30/EI 15
Door Forming Part of enclosure to a protected stairway	E20

Concealed Spaces

- 8.9 To remove a route for smoke and flame spread through concealed spaces within the building, fire resisting barriers will be placed at regular intervals and at joints within construction where there is the potential for unseen fire spread (this includes floor and ceiling voids). The maximum dimensions of cavities should not exceed those specified in the following Table 3 below:

Table 3 Maximum Dimensions of Cavity

Location	Class of Surface Exposed	Max. Dimension
Between a roof & a ceiling	Any Class	20m
Any other Cavity	Class 0 or Class 1	20m
	Not Class 0 or Class 1	10m

- 8.10 This will be achieved through utilisation of 30-minute fire resistant elements (i.e., 30 minutes integrity and 15 minutes insulation) which have been tested in accordance with the relevant part of BS 476.

Openings for Pipes

- 8.11 Any service breaching the compartmented walls and fire resisting elements will be appropriately fire stopped around the perimeter of the pipe or duct to the same level of protection as the wall or floor being breached.
- 8.12 For pipes breaching fire resisting construction, they will either be of a restricted diameter as shown in Table 4 below, or alternatively provided with a proprietary fire sealing system such as intumescent fire collars or other suitable rigid intumescent sealant (Figure 5).

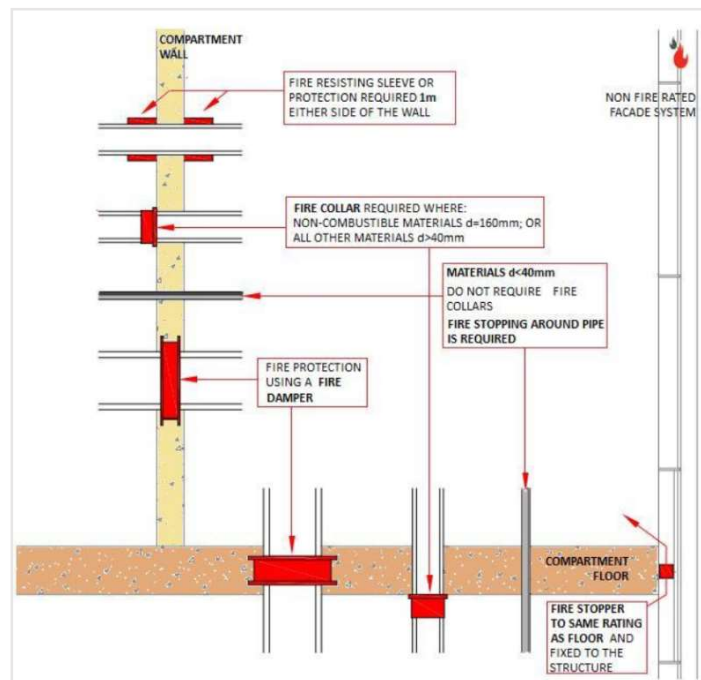
Table 4 Restricted Pipe Diameters

Situation	Non-combustible Material	Lead, Al, Al alloy, UPVC [Note], Fibre Cement	Any Other Material
Structure enclosing a protected shaft	160mm	110mm	40mm
Any other situation	160mm	40mm	40mm

Note: UPVC pipes complying with BS 4514:2001 and UPVC pipes complying with BS 5255:1989

- 8.13 In accordance with AD: B, where ventilation ductwork breaches the fire rated enclosures or protected escape routes (excluding stairs, which will require smoke dampers), fire dampers activated by thermal release mechanisms will be required.
- 8.14 Fire dampers should be tested to BS EN 1366: Part 2 and be classified to BS EN 13501: Part 3 and have an ES classification equal to or greater than 60 minutes.

Figure 5 Fire Stopping

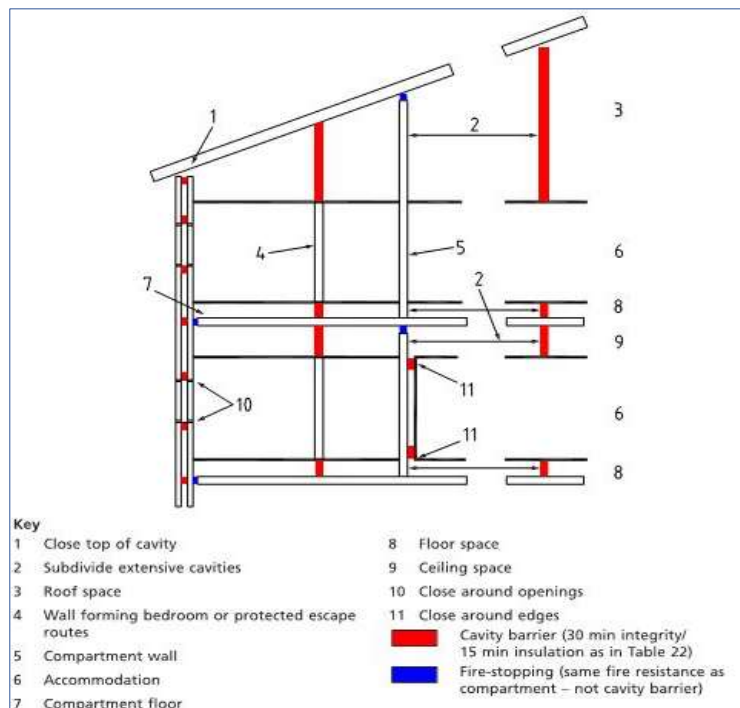


- 8.15 Where air handling ducts pass through fire resisting walls, the integrity of the separation should be maintained. This can be achieved using dampers, fire resisting enclosures, or fire resisting ductwork.
- 8.16 Kitchen extract ducts should be protected using fire resisting ductwork.
- 8.17 Smoke dampers serving duct work that breaches an escape route should be actuated by smoke detector-controlled automatic release mechanisms, in addition to being actuated by thermally actuated devices.
- 8.18 Where possible, it may therefore be advantageous to run the ductwork through the units rather than across escape routes.

Cavities

- 8.19 The concealed spaces in the walls, floors, ceilings, and roofs of a building provide a potential route for smoke and flame to spread without being detected, the provision of cavity barriers in these spaces will restrict this unseen spread.
- 8.20 Cavity barriers should be provided within any large cavity with the potential for extensive unseen fire spread. The key areas where cavity barriers should be provided are as follows:
- At the junction between an external cavity wall and a compartment wall that separates buildings and at the top of such an external cavity wall.
 - At the junction between an external cavity wall and every compartmented floor and compartmented wall.
 - At the junction between a cavity wall and every compartment floor, compartment wall, or other wall or door assembly that forms a fire resisting barrier.
 - In a protected escape route, above and below any fire resisting construction because the construction is not carried to full storey height or, in the case of a top storey, to the underside of the roof covering.
 - Where the corridor will be sub-divided to prevent fire or smoke affecting two alternative escape routes simultaneously.
 - Within the void behind the external face of rain-screen cladding at every floor level, and on the line of compartment walls abutting the external wall of buildings.
 - At the edges of cavities (including around openings including windows).
- 8.21 The cavity barriers should provide a minimum of 30 minutes fire resistance for integrity (E30) and a minimum of 15 minutes fire resistance for insulation (EI 15).

Figure 6 Locations of cavity barriers and fire-stopping



9 External Fire Spread

Resisting fire spread over external walls

- 9.1 The external walls and specified attachments should be constructed using materials which will be able to achieve the European classification A2-s1, d0, or better (i.e., non-combustible), when tested in accordance with BS EN 13501-1:201814.
- 9.2 The surfaces of the external walls will be able to achieve a minimum of European class A2-s1, d0.

Resisting fire spread from one building to another

- 9.3 An assessment has been carried out in accordance with BR 187:2014 to determine the amount of fire-resistant construction required on the external facade to prevent fire spread to neighbouring buildings.
- 9.4 Townsend Yard building's West elevation face onto a road. The relevant boundary has been assumed halfway across the road, in accordance with BR 187 and BS 9999. On the South, North, and East elevations, Townsend Yard faces neighbouring buildings, the external fire spread calculation is based on limiting the received radiation on the notional boundaries to 12.6kW/m².
- 9.5 Locations of notional boundaries used for the assessment are illustrated in Figure 7.

Figure 7 Notional boundaries used for the external fire spread assessment



Assumptions

- 9.6 The heat flux of the emitter is input as 84kW/m^2 which is considered appropriate for residential areas based on the recommendations in BS 9999. A heat flux of 42kW/m^2 is considered for dwellinghouses protected by a sprinkler system.

Results

- 9.7 Results from the assessment are summarised in Table 5.

Table 5 Minimum Required Boundary Distance

Building	Elevation	Relevant boundary (m)	Heat flux (kW/m^2)	Sprinklered condition	Width (m)	Height (m)	Allowable unprotected area (%)	Required protected area (%)
Townsend Yard	N	2.78	84	No	2.7	3	100%	0%
	W	5.34	84	No	4.8	8	100%	0%
	E	4.11	84	No	4.8	8	100%	0%
	S	3.39	84	Yes	8.5	8	95%	5%

Resisting fire spread over roof coverings

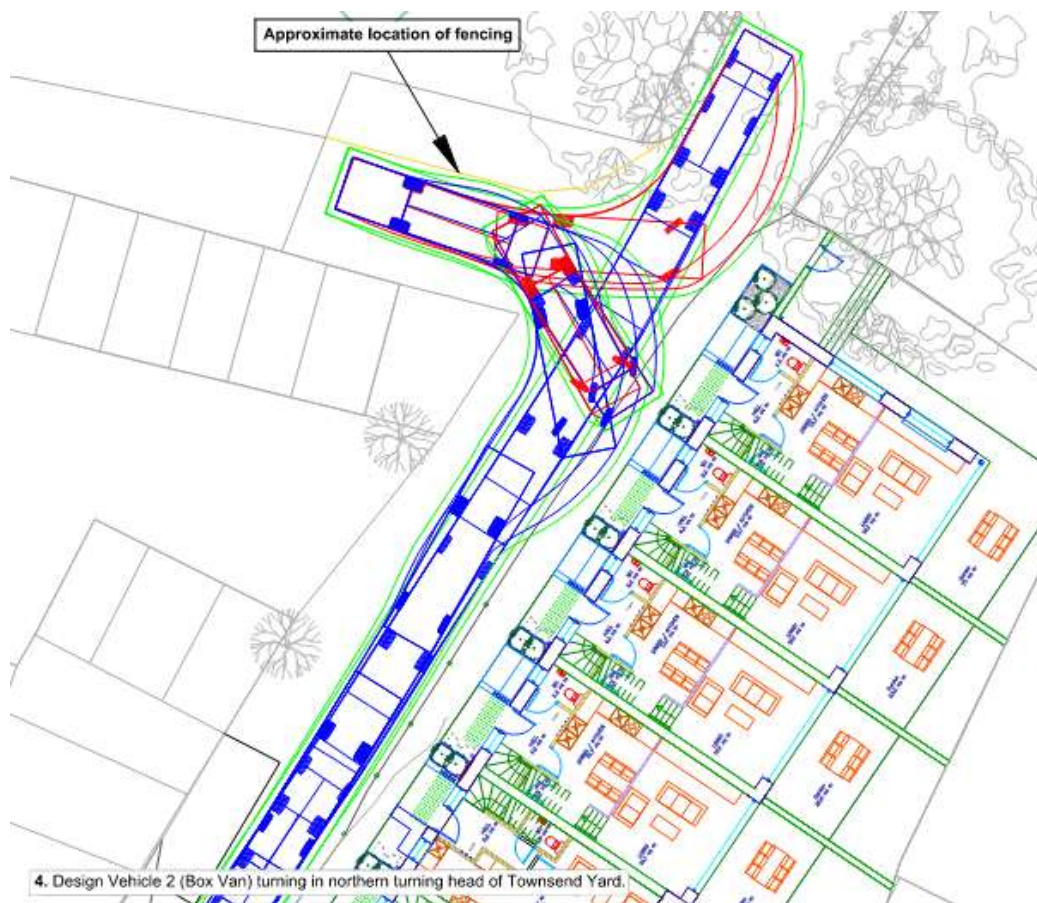
- 9.8 Where the distance of the roof to any point on a relevant boundary is less than 6m, the roof covering should be designated as AA, AB or AC [$B_{\text{roof}(t_4)}$].
- 9.9 Whereas, if the distance is less than 12m, the roof covering should be designated as AA, AB or AC [$B_{\text{roof}(t_4)}$]; BA, BB or BC [$C_{\text{roof}(t_4)}$]; AD or BD [$E_{\text{roof}(t_4)}$].
- 9.10 The roof coverings should be tested to *BS 476-3 Fire tests on building materials and structures. Classification and method of test for external fire exposure to roofs.*

10 Access and facilities for the fire service

Vehicle access

- 10.1 It has been assumed that Townsend Yard - London N6 5JF will meet the fire service access route specifications given in Table 7, as it is an existing public highway. It has been established that the fire tender is able access entirely Townsend yard (See Chapter12). A swept path assessment has verify that a fire tender is able to reverse into Townsend Yard using the manoeuvring space at the end of the close. The fire tender swept path assessment demonstrates that the fire tender can park adjacent to any dwelling. During previous conversation held with Building control FireRA has understood that this is satisfactory even if part of the manoeuvring is over a private road as fire brigade have the right to pass over private land under Section 44. Figure 8 shows an extract of the proposed Fire Pump Swept Path Assessment extensively described in section 12.

Figure 8 - Fire Tender Swept Path Assessment



- 10.2 The fire tender swept path assessment is based on the passage of the fire tender over private land which is allowed in accordance with Section 44, if this is not acceptable than the fire pump appliance is able to reverse only 20m from the High Steet tee junction as indicated in in Diagram 13.1 of AD:B (see Figure 9), and the provision of sprinkler become necessary in the most remote dwellings.

Figure 9 – Fire and rescue vehicle turning facility

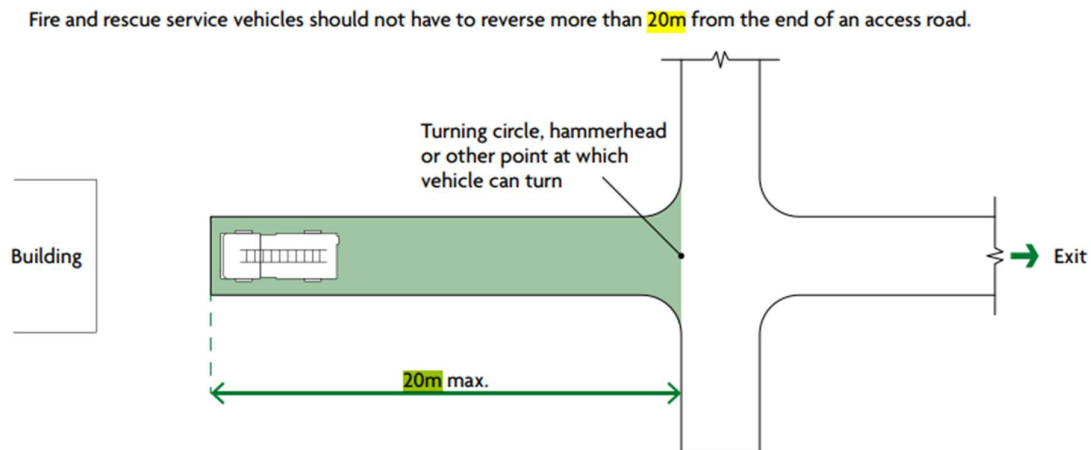


Table 6 Fire service access route specifications

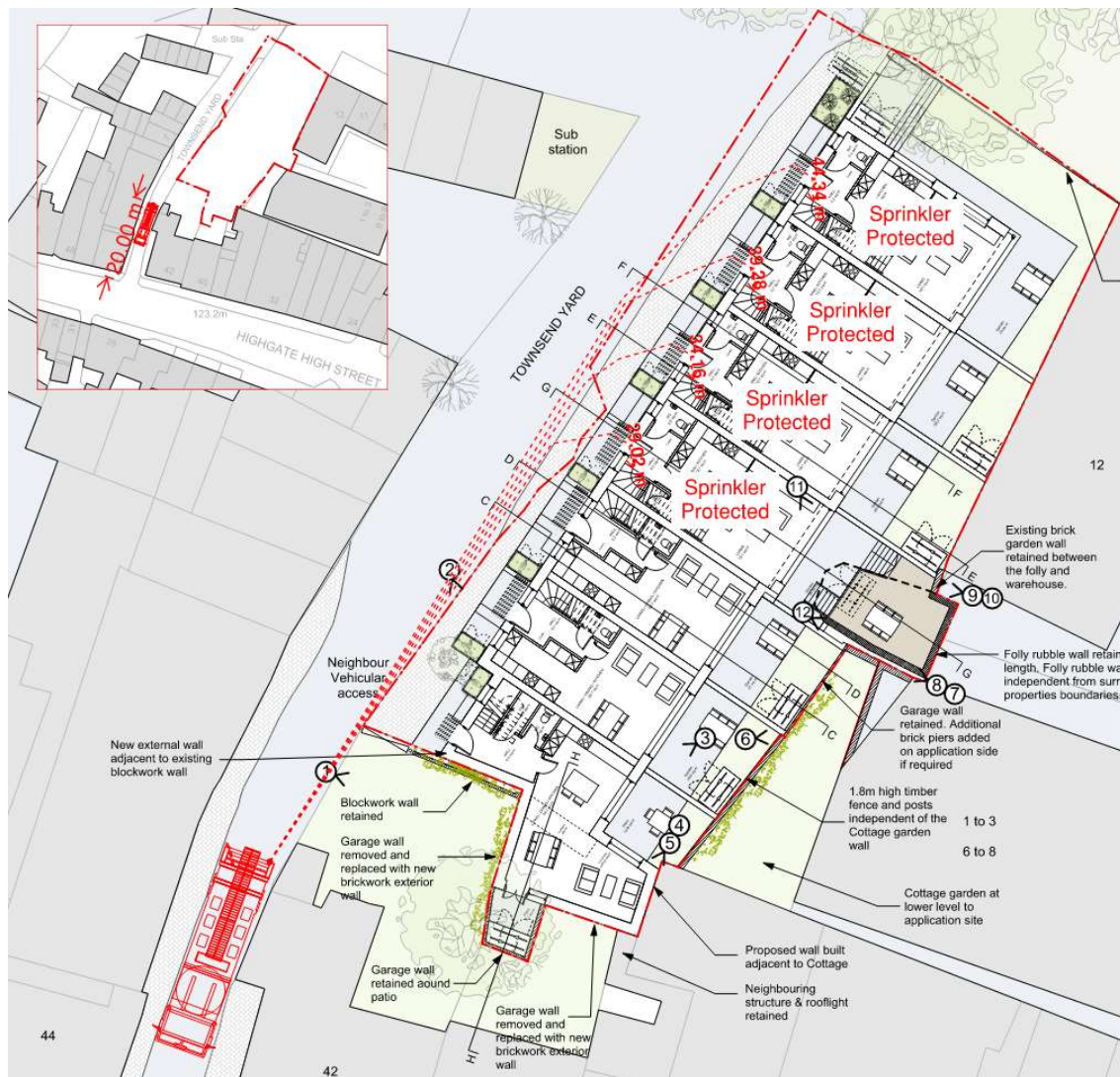
Appliance type	Minimum width of road between kerbs (m)	Minimum width of gateways (m)	Minimum turning circle between kerbs (m)	Minimum turning circle between walls (m)	Minimum clearance height (m)	Minimum carrying capacity (tonnes)
Pump	3.7	3.1	16.8	19.2	3.7	12.5
High reach	3.7	3.1	26.0	29.0	4.0	17.0

Fire Brigade Access

- 10.3 AD:B requires that the distance, a route suitable for laying a hose, from the fire tender pump to the most remote location inside the dwelling is within 45m. In Townsend Yard the hose distance is within 45m if the fire tender is able to fully access manoeuvring inside the close. In case it is established that the tender is not able to reverse sprinkler in the 4 most remote dwellings are required in order to extend the hose distance.
- 10.4 AD:B is a prescriptive code which does not take into consideration the fire risk nor the fire mitigation measures, then the AD:B requirements are based on the worst possible scenario. AD:B requires access for a pumping appliance to be within 45m of all points inside the dwellinghouse. The 45m requirement for ADB is simply based on the fact that maximum two 25m long fire hoses should be connected together to avoid excessive pressure drop along the hoses. The AD:B hose distance approach does not consider the actual elevation of the building nor the size of the fire. BS:9991 takes into consideration the actual risk and the mitigation measures. In Townsend Yard there are four dwellinghouses from which the fire hose distance follows behind the 45m criteria. The dwellinghouses in question are the ones that are further away from the fire tender parking position. In order to mitigate the risk, a sprinkler system in accordance with BS:9251 will be provided to control the fire size. Once the fire size is controlled, less water will be required for fire brigade to put down the fire, this situation could occur when the fire hose is quite long.
- 10.5 Where sprinklers in accordance with BS 9251:2014 or BS EN are fitted throughout a house, chapter 50.1.2 of BS:9251-2015 allows the hose distance between the fire and rescue service pumping appliance and any point within the house to be extended up to 75 m in

houses having one floor more than 4.5 m above ground level. In the typical Type 1 house, the internal total hose distance is of 21.52m (7.62m at GF+ 7.9m at 1stF + 6m elevation change) adding the external hose distance illustrated in Figure 10 it is assessed that sprinkler will be required in the four 3-bedrooms dwelling house. In the Type 1 dwellinghouses, hose distance will be less than 75m for the dwelling that are sprinkler protected, in the other Dwellinghouses (Type 2 and Type3) the house fire hose distance will be below 45m and therefore sprinklers are not required.

Figure 10 – Vehicle Access and External Hose Distance (in case sprinklers are required)



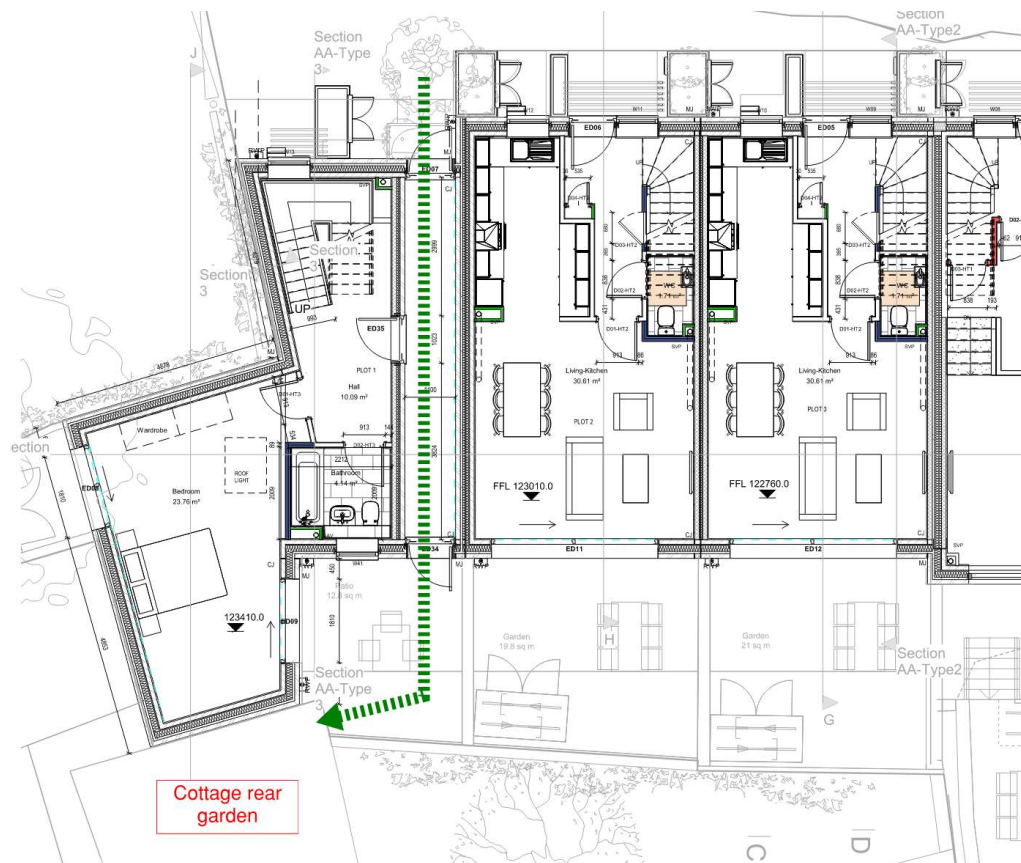
10.6 Hydrants should be provided within 90 m of an entry point to the building and not more than 90 m apart.

Fire Brigade Access to the Cottage

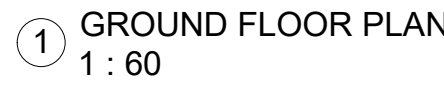
- 10.7 During initial consultations LFB has expressed concern about the access to a Listed Cottage along the High Street which access is currently via the site land. Fire Brigade access to the Listed Cottage should be assumed from the front of the property through the main entrance on the High Street and from the existing passage in the rear of the building parallel to the high street.

However an alleyway will be provided in the first dwelling to allow the passage of fire brigade personnel to the rear of the cottage. The alleyway will be gated, it will be accessible by fire brigade using fire brigade key. The deed of the dwelling which host the alleyway will state that the alleyway need to be left clear at all time.

Figure 11 – Fire brigade access to the cottage via alleyway



11 Fire Safety Mark-up



CONSTRUCTION

Mark-up Legend

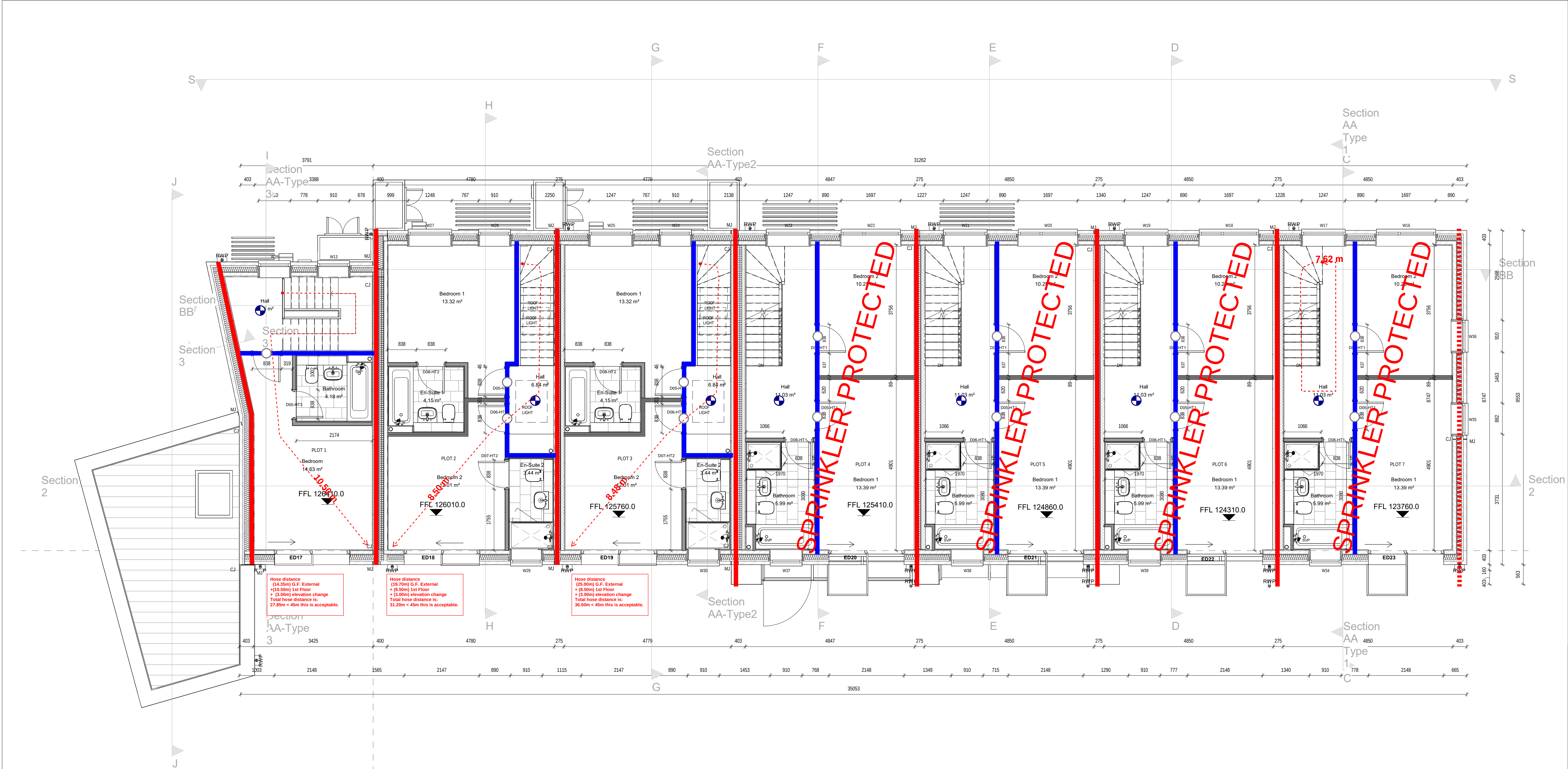
SERVICES BOXING LEGEND
SVP and boxing shown as thus to be full height unless AAV. To consist of 38 x 38mm SW timber batten framed construction and finished with:
Green = 2No layers of plasterboard
SVP to always be wrapped with 25mm insulation quilt.

SVP - SOIL VENT PIPE AAV - AIR ADMITTANCE VALVE
SS- STUBSTACK DC - DIRECT CONNECTION



Project:	Townsend Yard		
Title:	Fire Safety Mark-ups Ground Plan		
Revision:	Issue 2.0	Scale:	1:60 @
Prepared by:	G. Marinuzzi	Date:	21/07/22
Checked by:	K. Wala	Date:	21/07/22

NOTE . SVP, AAV DC AND WATER ENTRY POINT LOCATIONS ARE PROVISIONAL



① FIRST FLOOR PLAN
1 : 60

- General Notes:
1. POW Architects retain full copyright of the design and of the content of this drawing.
 2. Do not scale drawings. Dimensions govern.
 3. All dimensions are in millimetres unless noted otherwise.
 4. All dimensions shall be verified on site before proceeding with the work.
 5. POW Architects shall be notified in writing of any discrepancies.
 6. Contractor/builder to carry out their own survey work prior to quantification and construction.

CONSTRUCTION

Mark-up Legend

- 60 minutes fire resistance
- 30 minutes fire resistance
- FD60S Fire door
- FD30S Fire door Self-Closing
- FD30 Fire door
- FD20 Fire door Not Self - Closing
- Travel distance
- Hose distance
- Heat Detectors
- Smoke Detectors

WALL CONSTRUCTION LEGEND

- W1-EXTERNAL CAVITY WALL - BRICK**
103mm FACING BRICKWORK OUTER LEAF 'YELLOW LONDON STOCK'
200mm CAVITY CONTAINING 150mm Rockwool insulation
100mm thick 'Hemelle' Standard Lightweight Blockwork (7.3N/m² strength and 140kg/m³ density) INNER LEAF
FINISHED WITH 12.5mm PLASTERBOARD ON 10 mm DABS ON 8mm RENDER SCRATCH COAT WITH 3mm PLASTER SKIN FINISH
- W2-INTERNAL PARTY WALL - BETWEEN DWELLINGS**
2 No. LEAVES OF BLOCKWORK - 100mm thick each 'Hemelle' Standard Lightweight Blockwork (7.3N/m² strength and 140kg/m³ density)
200mm CAVITY CONTAINING FULL FILL KNAUF SUPAFIL PARTY WALL BLOWN FIBRE
WITH 12.5mm KNAUF WALLBOARD ON 12.5mm DABS ON 8mm RENDER SCRATCH COAT WITH 3mm PLASTER SKIN FINISH EACH SIDE. TO BE IN STRICT ACCORDANCE WITH ROBUST STANDARD DETAIL E-WM-32
- W3-INTERNAL PARTY WALL - BETWEEN DWELLINGS**
2 No. LEAVES OF BLOCKWORK - 100mm thick each 'Hemelle' Standard Lightweight Blockwork (7.3N/m² strength and 140kg/m³ density)
75mm CAVITY CONTAINING FULL FILL KNAUF SUPAFIL PARTY WALL BLOWN FIBRE
WITH 12.5mm KNAUF WALLBOARD ON 12.5mm DABS ON 8mm RENDER SCRATCH COAT WITH 3mm PLASTER SKIN FINISH EACH SIDE. TO BE IN STRICT ACCORDANCE WITH ROBUST STANDARD DETAIL E-WM-32
- INTERNAL NON-LOADBEARING PARTITION - TIMBER STUD**
38x89mm TIMBER STUDS AT MAX. 600mm CENTRES UNLESS OTHERWISE INDICATED
FINISHED WITH 12.5mm PLASTERBOARD, all joints finished with TAPE & JOINT REINFORCEMENT FRAMING
- INTERNAL NON-LOADBEARING PARTITION - TIMBER STUD - SOUND INSULATED**
38x89mm TIMBER STUDS AT MAX. 600mm CENTRES UNLESS OTHERWISE INDICATED
CAVITY FILLED WITH 50mm KNAUF EARTHWOOL ACOUSTIC ROLL (MIN. 16kg/m³)
FINISHED WITH 12.5mm PLASTERBOARD, all joints finished with TAPE & JOINT REINFORCEMENT FRAMING
- INTERNAL NON-LOADBEARING PARTITION - TIMBER STUD - FIRE RESISTANT**
38x89mm TIMBER STUDS AT MAX. 600mm CENTRES UNLESS OTHERWISE INDICATED
CAVITY FILLED WITH 50mm KNAUF EARTHWOOL ACOUSTIC ROLL (MIN. 16kg/m³)
FINISHED WITH 12.5mm PLASTERBOARD FIRE RESISTANT, all joints finished with TAPE & JOINT REINFORCEMENT FRAMING
- 12.5mm MOISTURE PANEL IN REPLACEMENT OF THE 12.5mm KNAUF WALLBOARD

SERVICES BOXING LEGEND
SVP and boxing shown as thus to be full height unless AAV. To consist of 38 x 38mm SW timber batten framed construction and finished with:
Green = 2No layers of plasterboard
SVP to always be wrapped with 25mm insulation quilt

SVP - SOIL VENT PIPE AAV - AIR ADMITTANCE VALVE
SS - STUBSTACK DC - DIRECT CONNECTION

RISK SCHEDULE

ITEM	DESCRIPTION OF RISK & ACTION
Activity: Ceiling Mounted Cooler Hood Installation	Activity: Ceiling Mounted Cooler Hood Installation
Activity: Kitchen Appliance Installation	Activity: Kitchen Appliance Installation
Activity: Carport/Perch/Window Roof Installation	Activity: Carport/Perch/Window Roof Installation
Activity: Large Ceiling Installation	Activity: Large Ceiling Installation
Activity: Large Ceiling Installation	Activity: Large Ceiling Installation



Project: Townsend Yard

Title: Fire Safety Mark-ups First Floor Plan

Revision: Issue 1.0 Scale: 1:60 @ A1

Prepared by: G. Marnotti Date: 15/05/23

Checked by: K. Walls Date: 15/05/23

1 SECOND FLOOR PLAN
1 : 60



change this too
KNAUF
DRITHERM®
CAVITY SLAB 32

WALL CONSTRUCTION LEGEND	
	W1-EXTERNAL CAVITY WALL - BRICK 103mm FACING BRICKWORK OUTER LEAF 'YELLOW LONDON STOCK' 200mm CAVITY CONTAINING 150mm Rockwool insulation 100mm thick 'Hemelle' Standard Lightweight Blockwork (7.30nm² strength and 140kg/m³ density) 100mm thick 'Hemelle' Standard Lightweight Blockwork (7.30nm² strength and 140kg/m³ density) INNER LEAF FINISHED WITH 12.5mm PLASTERBOARD ON 10mm DABS ON 8mm RENDER SCRATCH COAT WITH 3mm PLASTER SKIN FINISH
	W2-INTERNAL PARTY WALL - BETWEEN DWELLINGS 2 No. LEAVES OF BLOCKWORK - 100mm thick each 'Hemelle' Standard Lightweight Blockwork (7.30nm² strength and 140kg/m³ density) 200mm CAVITY CONTAINING FULL FILL KNAUF SUPAFIL PARTY WALL BLOWN FIBRE WITH 12.5mm KNAUF WALLBOARD ON 12.5mm DABS ON 8mm RENDER SCRATCH COAT WITH 3mm PLASTER SKIN FINISH EACH SIDE. TO BE IN STRICT ACCORDANCE WITH ROBUST STANDARD DETAIL E-WM-32
	W3-INTERNAL PARTY WALL - BETWEEN DWELLINGS 2 No. LEAVES OF BLOCKWORK - 100mm thick each 'Hemelle' Standard Lightweight Blockwork (7.30nm² strength and 140kg/m³ density) 75mm CAVITY CONTAINING FULL FILL KNAUF SUPAFIL PARTY WALL BLOWN FIBRE WITH 12.5mm KNAUF WALLBOARD ON 12.5mm DABS ON 8mm RENDER SCRATCH COAT WITH 3mm PLASTER SKIN FINISH EACH SIDE. TO BE IN STRICT ACCORDANCE WITH ROBUST STANDARD DETAIL E-WM-32
	INTERNAL NON-LOADBEARING PARTITION - TIMBER STUD 38x89mm TIMBER STUDS AT MAX. 600mm CENTRES UNLESS OTHERWISE INDICATED FINISHED WITH 12.5mm PLASTERBOARD, all joints finished with TAPE & JOINT REINFORCEMENT FRAMING
	INTERNAL NON-LOADBEARING PARTITION - TIMBER STUD - SOUND INSULATED 38x89mm TIMBER STUDS AT MAX. 600mm CENTRES UNLESS OTHERWISE INDICATED CAVITY FILLED WITH 50mm KNAUF EARTHWOOL ACOUSTIC ROLL (MIN. 16kg/m³) FINISHED WITH 12.5mm PLASTERBOARD, all joints finished with TAPE & JOINT REINFORCEMENT FRAMING
	INTERNAL NON-LOADBEARING PARTITION - TIMBER STUD - FIRE RESISTANT 38x89mm TIMBER STUDS AT MAX. 600mm CENTRES UNLESS OTHERWISE INDICATED CAVITY FILLED WITH 50mm KNAUF EARTHWOOL ACOUSTIC ROLL (MIN. 16kg/m³) FINISHED WITH 12.5mm PLASTERBOARD FIRE RESISTANT, all joints finished with TAPE & JOINT REINFORCEMENT FRAMING
	12.5mm MOISTURE PANEL IN REPLACEMENT OF THE 12.5mm KNAUF WALLBOARD

SERVICES BOXING LEGEND	
	SVP - SOIL VENT PIPE AAV - AIR ADMITTANCE VALVE SS-STUBSTACK DC - DIRECT CONNECTION

RISK SCHEDULE	
ITEM	DESCRIPTION OF RISK & ACTION
	Activity: Ceiling Mounted Cooler Hood Installation Risk: Injury due to fall from height, incorrect handling, falling objects Activity: Canopy/Perch/Window Roof Installation Risk: Injury due to fall from height, incorrect handling, falling objects, crushing

- General Notes:
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 - All dimensions shall be verified on site before proceeding with the work.
 - POW Architects shall be notified in writing of any discrepancies.
 - Contractor/builder to carry out their own survey work prior to quantification and construction.

CONSTRUCTION

Mark-up Legend

- 60 minutes fire resistance
- 30 minutes fire resistance
- FD60S Fire door
- FD30S Fire door Self-Closing
- FD30 Fire door
- FD20 Fire door Not Self - Closing
- Travel distance
- Hose distance
- Heat Detectors
- Smoke Detectors

FRA

Project: Townsend Yard

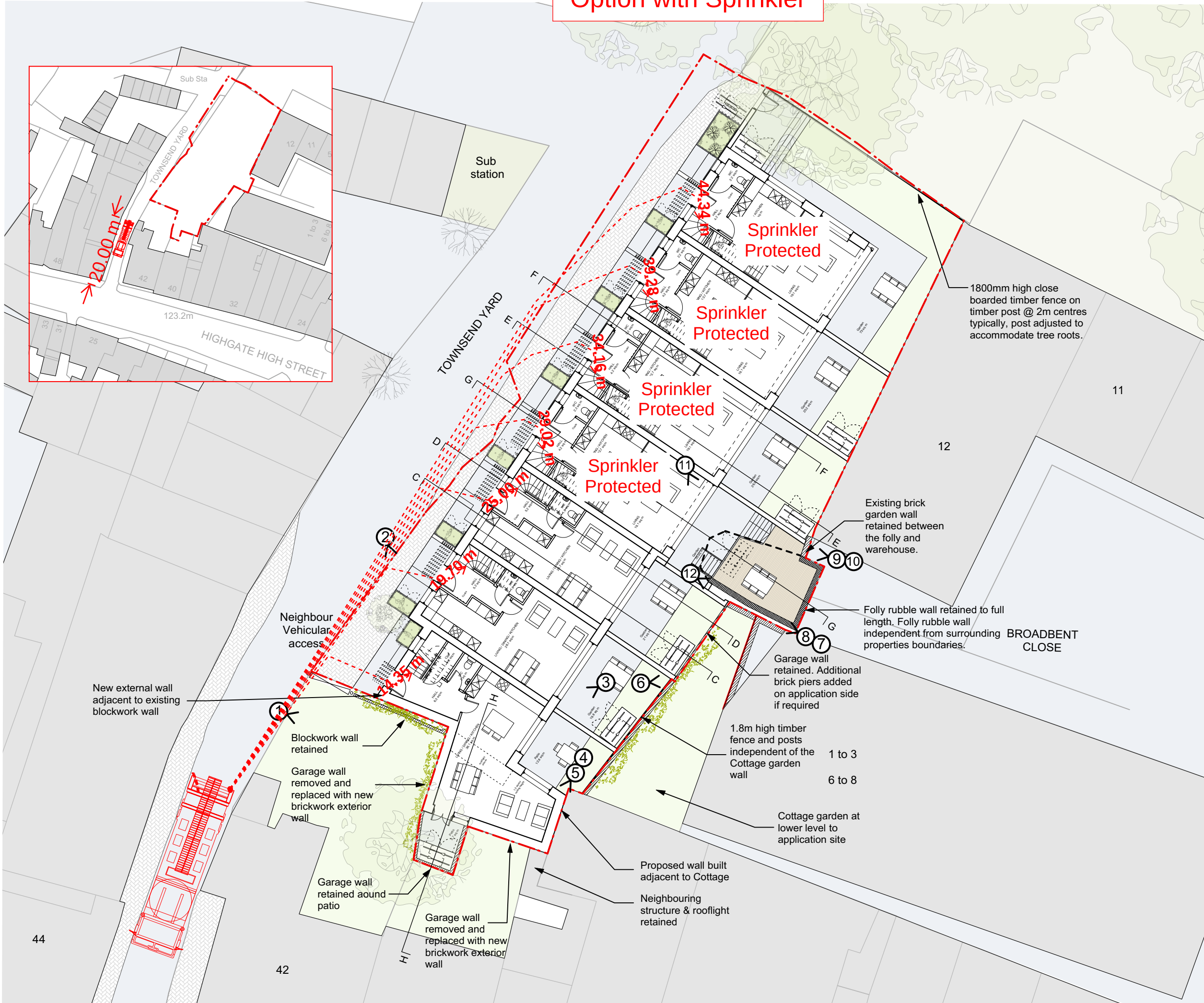
Title: Fire Safety Mark-ups Second Floor Plan

Revision: Issue 1.0 Scale: 1:60 @ A1

Prepared by: G.Marinotti Date: 15/05/23

Checked by: K.Walls Date: 15/05/23

Option with Sprinkler



Mark-up Legend

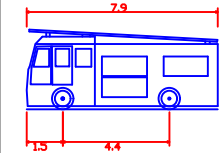
- 60 minutes fire resistance
- 30 minutes fire resistance
- FD60S Fire door
- FD30S Fire door Self-Closing
- FD30 Fire door
- FD20 Fire door Not Self - Closing
- Travel distance
- Hose distance
- Heat Detectors
- Smoke Detectors
- Smoke Vent Switch
- Protected Stair
- Protected Common lobby
- Protected Entrance Hall



Project: Townsend Yard
Title: Fire Safety Mark-ups Vehicle Access
Revision: Issue 1.0 Scale: 1:200 @ A3
Prepared by: G.Marinozzi Date: 15/05/23
Checked by: K.Walia Date: 15/05/23

12 Swept Path Assessment – Fire pump

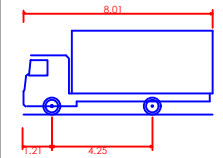
DESIGN VEHICLE 1:



Pumping Appliance
Overall Length
Overall Width
Overall Body Height
Min Body Ground Clearance
Track Width
Lock to lock time
Kerb to Kerb Turning Radius

7.900m
2.500m
3.300m
0.140m
2.500m
4.00s
7.750m

DESIGN VEHICLE 2:



7.5t Box Van
Overall Length
Overall Width
Overall Body Height
Min Body Ground Clearance
Track Width
Lock to Lock Time
Kerb to Kerb Turning Radius

8.010m
2.100m
3.556m
0.351m
2.064m
4.00s
7.400m

1. Design Vehicle 1 (Pumping Appliance) entering and exiting Townsend Yard.

2. Design Vehicle 1 (Pumping Appliance) turning in northern turning head of Townsend Yard.

Approximate location of fencing

3. Design Vehicle 2 (Box Van) entering and exiting Townsend Yard.

4. Design Vehicle 2 (Box Van) turning in northern turning head of Townsend Yard.

NOTE:

1. Blue line denotes edge of body / wheels.
2. Green line denotes 300mm tolerance. For example, wing mirrors and driving accuracy.

NOTE:

Drawing based on SDPS drawing
TSY-K009-S0-P0-Proposed Ground Floor Plan

COTTEE Transport Planning

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Feering
Essex
CO5 9SE
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Fax : 01376 573480
email : info@cottee-tp.co.uk
www.cotteetransportplanning.co.uk

Client

TOWNSEND YARD LTD

Project

TOWNSEND YARD, HIGHGATE

Title

**SWEPT PATH ASSESSMENT -
SERVICING**

Drawn

FF

Checked

AF

Scale

1:250 @ A3

Date

SEP 2020

Drawing No.

2012/07