AEON (GB) LTD
Calon y Fferi
West Wing Unit 8
Carmarthen Road
Ferryside
Carmarthenshire SA17 5TE
Office telephone: 01267 267908

Fire Safety Strategy for 27 One-Bedroomed Flat Development at Former Ebenezer Chapel 2 Chester Road Wrexham

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CLIENT DETAILS:
Enfys Developments Ltd Tŷ Draig
North Wales Business Park
Ewloe
Deeside
CH5 3DT

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FIRE CONSULTANT:
Andy Watkins BEng (Hons) – Fire Safety Engineering
AEON (GB) Ltd

STRATEGY REVISION GUIDE

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INITIAL TEAM FOR CONSULTATION

Management Team
Enfys Developments Ltd
North Wales Office
Tŷ Draig
North Wales Business Park
Ewloe
Deeside
CH5 3DT

CONTENTS GUIDE

1 Summary
2 Introduction
3 Occupancy
4 Evacuation strategy
5 Means of Warning - Individual Dwellings & Communal Areas
6 Means of escape
7 Lifts
8 General Provisions
- 8.1 Automatic Fire Suppression Systems
- 8.2 Provision of Manual Firefighting Equipment
- 8.3 Emergency Lighting
- 8.4 Fire Safety Signage

9 Fire Spread
- 9.1 Internal Fire Spread
- 9.2 Compartmentation
- 9.3 Fire Doors
- 9.4 Concealed Spaces
- 9.5 Protection of openings and fire-stopping

10 External Fire Spread
- 10.1 Walls
- 10.2 Roof Coverings
- 10.3 Fire Spread to Neighbouring Buildings

11 Access & Facilities for the Fire Service
- 11.1 Vehicular Access
- 11.2 Hydrants & Water Supplies

12 Fire Safety Management

1. SUMMARY – FIRE SAFETY STRATEGY for a 27 Flat Development at the site of former Ebenezer Chapel, 2 Chester Road, Wrexham.

AEON (GB) Limited has been commissioned by Enfys Developments Limited to provide a fire safety strategy for their 27 Flat Development at the site of former Ebenezer Chapel, 2 Chester Road, Wrexham, which is a new build development of twenty seven one bedroomed flats for general needs accommodation. This fire strategy is for the above-named property/development only and is not intended for use at any other location or development.

All the properties on the development will be let as housing to individuals and families. As the end use of the properties is for general needs accommodation, this fire safety strategy is adopting the fire safety of general needs housing.

Buildings description

A new twenty seven, one bedroomed flat development over four floors. A bike store, plant room and six one-bedroom flat on the ground floor with seven one-bedroomed flats to the first floor, seven one-bedroomed flats to the second floor and a further seven one-bedroomed flats on the third floor.

Timber framed cavity wall construction with concrete block and brick outer façade construction with a tiled pitched roof.

The property will be accessed by a private roadway off Chester Road.

This property will have the benefit of automatic fire sprinkler coverage throughout.

The development is intended to be let as a general needs property.

It will be the duty of the 'Responsible Person' to ensure that the requirements of this fire strategy are applied and maintained. The fire safety requirements are to be reviewed on a regular basis. Any material changes to the buildings or the occupants' requirements may require additional levels of fire safety arrangements.

Regulation 38 is a requirement under the Building Regulations for England and Wales to provide fire safety information to the 'responsible person' at the completion of a project, or where the building, re-development or extension is first occupied.
Where a building is erected or extended, or has undergone a material change of use, and the Regulatory Reform (Fire Safety) Order 2005 applies to that building or extension, Regulation 38 requires that a package of fire safety information - 'as built' information which records the fire safety design of the building or extension - must be assembled and given to the 'responsible person' for the premises. This information may be referred to as the Fire Manual and should where appropriate contain information on:

a) The general design strategy together with the descriptions, assumptions and philosophies that led to the fire safety design.
b) The construction of the building together with its level of compartmentation both vertical and horizontal.
c) The description of all active and passive systems together with relevant certification, any operator's manual, maintenance regimes and as built drawings. Detail to also include the maintenance regimes for each of the systems.
d) The evacuation strategy together with the roles and responsibilities of key staff.
e) The Business Continuity model should one or more of the systems fail.

f) An 'operator manual' for the fire safety systems.
g) All identified risks and hazards for fire fighters.

A person-based Fire risk assessments shall be conducted by a competent independent person appointed by the Client at handover of the project.

Drawings/plans - (all floor layout plans, and information contained within this report have been provided by Enfys Developments and are not to be relied on for scale accuracy).

Site Plan (not to scale)



2. INTRODUCTION

Purpose of this document

The purpose of this fire strategy is to record the level of fire safety protection measures built into the building when completed and initially occupied and that the building complies with the relevant regulations for fire safety. It has not considered the fire safety measures during the design or construction phase. Regulations for this phase are specified in the Construction (Design and Management) Regulations 2015. It gives all relevant parties the opportunity to move forward with a common approach to the future management and evolution of those measures.

In particular, this document gives the owner and occupiers the strategic information they require to maintain appropriate fire safety protection measures in the occupied building. Whenever alterations are proposed to the structure, to the management procedures or to the emergency procedures, this document should be

referred to ensure that any alterations do not detrimentally affect the level of fire safety. Also, when fire risk assessments are conducted this document will provide the assessors with relevant information.

The objectives of this fire strategy are specifically for this property with varying occupancy with the aim of ensuring:

1. **Protection and preservation of life**
2. **Protection of property and the environment in the event of fire**
3. **Provision of flexible useable accommodation for the varying functions of the property**

The regulations pertaining to this development and used for the compilation of this fire strategy are:

> Building Regulations Approved Document B 2010 Volume 2 – Buildings other than dwellinghouses Fire Safety For use in Wales.

Construction, Design and Management Regulations

Projects undertaken within the UK are subject to the requirements of the Construction (Design and Management) Regulations 2015 (CDM).
This report defines the strategy for meeting the functional and performance requirements for fire safety in the finished building. It is intended to form part of the submission for Building Regulation Part B approval. Where any conclusions or recommendations have been arrived at which specify particular materials, products, or forms of construction these will have been assessed, in accordance with CDM Regulations.

Scope of this document

This report is based upon the drawings provided by Enfys Developments Ltd.

Building Regulations Approved Document B 2010 Volume 2 – Buildings other than dwellinghouses Fire Safety For use in Wales have been used as a route to compliance with all relevant information and considerations included. It assumes that the property has been constructed in accordance with all the requirements of all of The Building Regulations.

This report covers the following:

- Legal requirements
- Fire alarm and automatic fire detection
- Means of Escape
- Fire separation
- Surface spread of lining materials
- Signs and Notices
- Emergency Lighting
- Means for fighting fire including fixed installations.
- Access for firefighting
- Management and Fire risk assessments.

This document does not cover fire safety during the construction phase. Regulations for this phase are specified in the Construction (Design and Management) Regulations 2015.

The information contained within this report is for use solely in relation to this twenty seven Flat Development at the site of former Ebenezer Chapel, 2 Chester Road, Wrexham, and must not be used either in part or full in relation to any other building.

The fire safety measures, and recommendations of this report are based strictly on this building and the drawings supplied and on the fire safety systems and their interface as prescribed within the strategy. Any deviations from this strategy must have support in writing by AEON (GB) Limited by way of an Appendix / Amendment to this strategy.

Unless supported in writing, any deviations from this strategy shall invalidate the entire strategy and any liability incumbent upon AEON (GB) Limited. Authorities having legal control cannot rely upon partially executed fire strategies as an alternative means of compliance with regulations. It is essential therefore that all parties involved are fully appraised of the contents and requirements of the fire strategy in order to ensure compliance.

Legal basis for fire safety

Building Regulations 2010 Wales as amended

The construction works to the property is subject to the requirements of the Building Regulations Building Regulations 2010 Approved Document B Volume 2 – Buildings other than dwellinghouses Fire Safety For use in Wales as a route to compliance.

Regulatory Reform (Fire Safety) Order 2005

Once the project is completed and occupied, the Regulatory Reform (Fire Safety) Order 2005 (the FSO) becomes the controlling fire safety legislation.

It is necessary, among other things, under this order for the owner/occupier of the building to carry out and maintain a fire safety risk assessment. The premises management team will also be responsible under this order to ensure that the fire safety provisions are appropriately managed maintained and tested over the whole life of the building.

3. Occupancy

The occupancy has been calculated using the number of individual bedrooms per dwelling.

Accommodation Type	Persons per Unit	Number of Units	Cumulative Total Occupancy
Single Bedroom Flat	2	27	**54**

Note: There is no maximum occupancy for residential dwellings

Occupant Characteristics

The proposed occupants will be general needs individuals and families.

A person-centred fire risk assessment will need to be undertaken to assess any additional fire safety measures required taking into consideration the individual needs of the occupants.

Any occupants who may develop or have disabilities that do not affect their mobility but that may affect their ability to respond to an evacuation signal should be identified by the person-centred fire risk assessment and measures taken as appropriate to ensure their safe evacuation with the minimum of delay if required.

4. EVACUATION STRATEGY

In common with all dwellings, the occupiers of dwellings are not required by law to evacuate, assemble outside, or remain within the building.

The building is designed to support a safe to stay (previously known as 'stay put') policy during a significant period after the development of any fire.

The building is designed to support total evacuation should occupiers decide to do this, particularly on the advice of the fire and rescue service.

5. MEANS OF WARNING

Individual Dwellings

All flats will be provided with as a minimum, a fire detection and alarm system in accordance with BS5839-6:2019 to a minimum Grade D1, Category LD1.

The fire detection will incorporate smoke detectors in all habitable rooms (including the lounge area of the open plan lounge/kitchen) and access hall and a heat detector within the kitchen area of the open plan lounge/kitchen.

As the alarm will have to arouse sleeping persons a minimum sound level of 75 dB(A) is required, at the bed head with all the doors shut.

To help ensure early attendance by the Fire and Rescue Service to fires in individual flat of residents that are considered at elevated risk from fire in their own accommodation, WWHA will conduct a person-centred fire risk assessment and may arrange for additional mitigation measures to be provided. These measures may include additional monitoring to an ARC. This should be taken into consideration when designing the detection system to 'future proof' against additional detection requirements.

Communal Areas, Plant Rooms, Service Risers, and Solar Panel Electrical Equipment

All communal areas are to be provided with an appropriate fire detection and fire alarm system in accordance with BS5839-1:2019 Table A1, L2. The system is also to incorporate manual call points in all communal spaces. The system should cover all communal areas including:

Plant Rooms
Service Risers
Solar Panel Electrical Equipment Rooms
Bin Store
Bike Store
Any other high-risk rooms

As above, to help ensure early attendance by the Fire and Rescue Service this system should be easily connected to an ARC. This should be taken into consideration when designing the detection system to 'future proof' against additional detection requirements.

6. MEANS OF ESCAPE

Horizontal Means of Escape Within Apartments

All apartments must meet the requirements of Approved Document B, Section 3 Diagram 2 or Diagram 3, where all habitable rooms have direct access to an entrance hall. If the travel distance to the flat entrance door is greater than 9m then a protected entrance hall is to be provided as per diagram 2. If the travel distance is less than 9m to flat entrance door then the protected entrance hall is not required as per diagram 3.

Diagram 2 Flat where all habitable rooms have direct access to an entrance hall

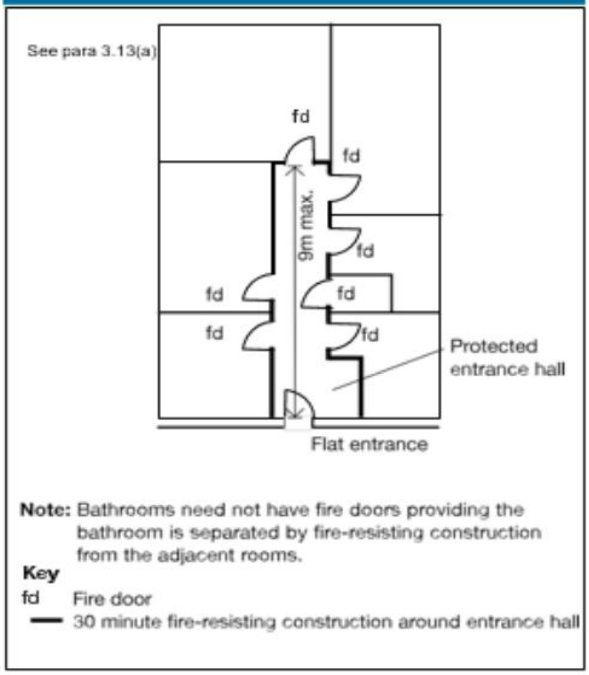
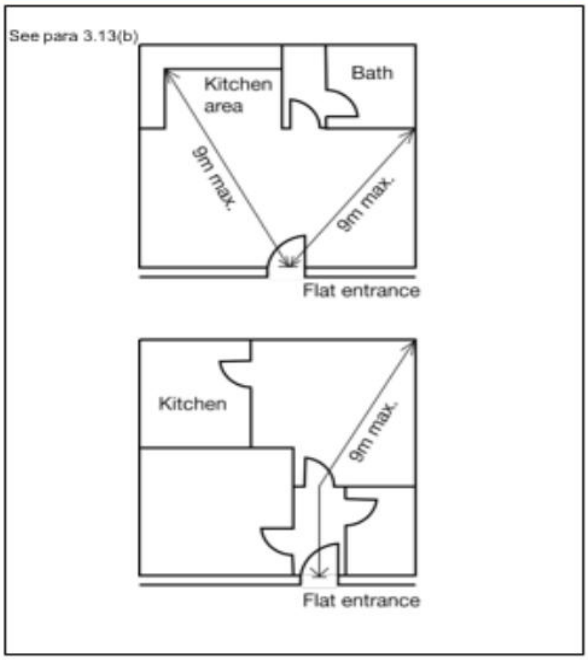


Diagram 3 Flat with restricted travel distance from furthest point to entrance



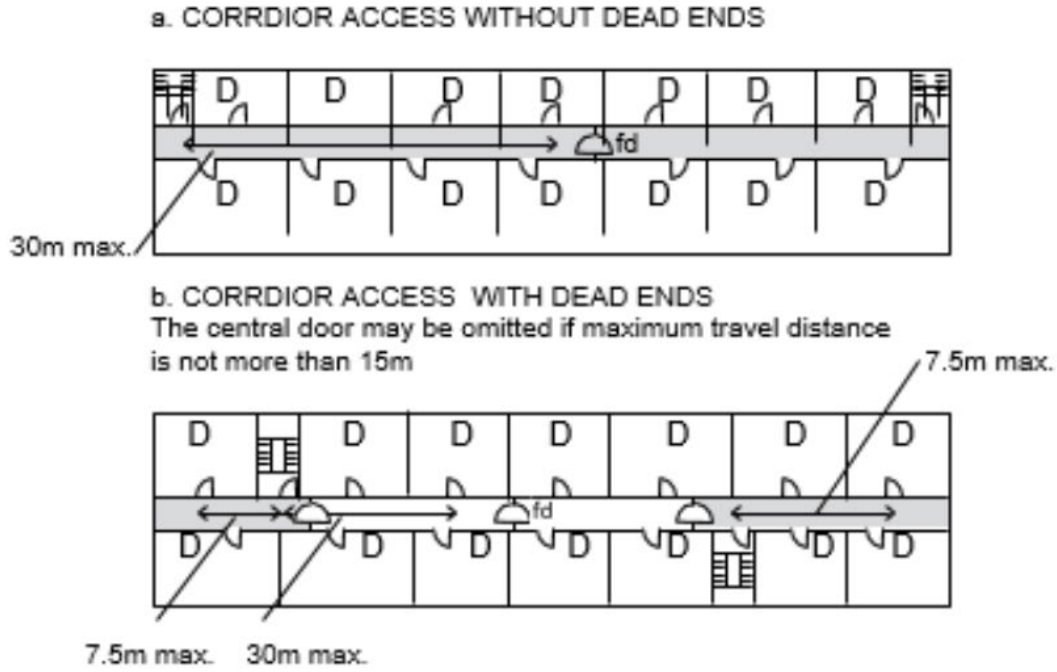
All apartments have separate habitable rooms.
All apartments are provided with a Sprinkler system in accordance with BS 9251: 2021.

Horizontal Means of Escape Within Common Areas

All flats are served by a common corridor providing means of escape in two directions to protected stairs as described in Approved Document B, section 3 diagram 8.
If the two directional travel distance within the communal corridors on each level exceeds 30m, then a central FD30S fire door should be suitably positioned approximately half way along the communal corridor as per Approved document B diagram 8.

Diagram 8 Flats served by more than one common stair

See para 3.20(b) and 3.28



An assessment needs to be made of the physical ability of residents to evacuate in case of fire. The most critical stage of escape is evacuation from the residents' own accommodation. Having evacuated from their accommodation, they should then be able to reach a place of relative safety by horizontal movement to the nearest fire exit or fire-resisting door, such as a cross corridor door or a door to a protected stairway. Thereafter, for those on upper floors, it may be necessary to travel vertically down a stairway, or to use an evacuation lift, to reach an exit from the building.

7. LIFTS

The plans supplied indicate that a lift is to be provided within this development. As the development is for ambulant general needs occupants an evacuation lift is not required under Approved Document B. If the occupants are to be physically impaired, they should be housed on the ground floor. If this is not possible, then consideration should be given to installing an evacuation lift.

Approved Document B 6.39 states:
"In general, it is not appropriate to use lifts when there is a fire in the building because there is always the danger of people being trapped in a lift that has become immobilised as a result of the fire. However, in some circumstances a lift may be provided as part of a management plan for evacuating people. In such cases the lift installation may need to be appropriately sited and protected and may need to contain a number of safety features that are intended to ensure that the lift remains usable for evacuation purposes during the fire. Guidance on the design and use of evacuation lifts is given in BS 5588-8:1999."

8. GENERAL PROVISIONS

8.1 Automatic Fire Suppression Systems

An automatic fire suppression system is to be installed throughout the development in accordance with Section 2 ADB and BS9251:2021 Category 2. The system should be designed and installed by third party accredited 'competent' persons giving consideration to the occupancy profile of the development.

The system will be independent of the fire detection and alarm systems.

A single power supply will be provided in accordance with BS9251, Clause 5.12.2

8.2 Provision of Manual Firefighting Equipment

Portable Fire Extinguishers are not normally required in residential properties although a person-centred fire risk assessment will need to be undertaken to assess any additional fire safety measures required taking into consideration the individual needs of the occupants and may require some portable fire extinguishers.

Should fire-fighting equipment be required following a person-centred fire risk assessment then it is important that there are persons on the premises who are trained and familiar with the safe use of this equipment.

8.3 Emergency Lighting

Emergency lighting will be provided in all common areas in accordance with BS 5266-1:2016.

8.4 Fire Safety Signage

Every doorway in common areas providing access to a means of escape, should be distinctively and conspicuously marked by an exit sign in accordance with BS ISO 3864-1:2011 and BS 5499-4:2013.

9. FIRE SPREAD

9.1 Internal Fire Spread Linings

The linings of all internal walls shall achieve a minimum standard Class "0" surface spread of flame rating or comply with the new European standard BS EN 13501-1. In accordance with British Gypsums' White Book, plasterboard is classified as Class "0" surface spread of flame.

9.2 Compartmentation

The fire resistance between dwellings will continue vertically and extend up to the underside of the roof on the top floor.

Fire stopping and cavity barriers are required at junctions of party walls and floors within the exterior cladding system as required and in accordance with Approved Document B, Section B3..

The service risers will be protected shafts and must provide 60 minutes fire resistance with 30-minute doors.

All structural elements will provide a minimum of 60 minutes fire resistance (structural integrity) in accordance with Approved Document B, Table A2.

Compartmentation requirements within this development will be in accordance with the table below:

Element of Structure	Fire Resistance (Integrity)	Fire Resistance (Insulation)
All Floors	60 minutes	60 minutes
Separating Dwellings	60 minutes	60 minutes
Separating Stairs from Corridors	30 minutes	30 minutes
Service Risers	60 minutes	60 minutes
Fire Doors		
Doors to Dwellings	30 minutes with smoke control	N/A
Separating Stairs from Corridors	30 minutes with smoke control	N/A
Risers	30 minutes with smoke control	N/A
Cross Corridors (if required)	30 minutes with smoke control	N/A

Solar Electrical Equipment

Solar Electrical Equipment (Inverters and Battery Storage etc.) if fitted, are to be sited and protected in accordance with the requirements of PAS 63100:2024.

Compartmentation Requirements on Ground Floor



30-minute fire resistance **60-minute fire resistance**

Compartmentation Requirements on Floors 1, 2 and 3.



30-minute fire resistance **60-minute fire resistance**

Fire resistant structure to be carried to the underside of the roof covering and is to of be the same fire resistance (both integrity and insulation) throughout.

9.3 Fire Doors

All fire door sets throughout the development should achieve the performance shown in Approved Document B Appendix Table B1, ADB. Fire doors are designated by reference to their performance for integrity only 'FD.' The suffixes 'S' means that the fire door needs to resist the passage of smoke at ambient temperature and have been tested in accordance with BS 476-31-1:1983 and BS EN 1634-3:2004, respectively.

Doors on Escape Routes

All doors on escape routes should not fitted with a lock, latch, or bolt fastening and should be fitted only with simple fastenings that are all of the following:

a) Not fitted with a lock, latch, or bolt fastening

b) Fitted only with simple fastenings that are all of the following:

i. Easy to operate, it should be apparent how to undo the fastening

ii. Operable from the side approached by people escaping

iii. Operable without a key

iv. Operable without requiring people to manipulate more than one mechanism

v. If provided with magnetic/electrically powered locking systems, they must:

- Be linked into the fire alarm/detection system to fail safe to unlock.
- Be provided with a manual override system (typically coloured green) to use in an emergency.
- Fail safe to unlock on power failure to the building.

9.4 Concealed Spaces

Concealed spaces or cavities in the construction of a building provide a ready route for smoke and flame spread. This is particularly so in the case of voids in, above and below the construction of a building, e.g., walls, floors and ceiling void and roofs. As any spread is concealed, it presents a greater danger than would a more obvious weakness in the fabric of the building.
Cavity barriers if required should be provided in accordance with ADB B3 – Section 10: Cavities.
Cavity barriers should be provided to.

- To divide cavities
- To close the edges of cavities

National Fire Chief Council Guidance for Specialised housing requires compartment walls in the top storey beneath a roof should be continued through the roof space (where provided) to the underside of the roof covering or deck and also states: '***It is not appropriate to complete the line of compartmentation within roof voids by installing cavity barriers above the compartment walls that separate flats, nor to treat the roof void simply as a concealed space within which cavity barriers are installed at regular intervals (other than, for example, where the void has been created by roofing over an original concrete flat roof).'***

9.5 Protection of openings and fire-stopping

Openings for pipes

Pipes that pass through a fire-separating element/compartment wall or compartment floor (unless in a protected shaft should be in accordance with one of the following alternatives.

a) Provide a proprietary, tested sealing system that will maintain the fire resistance of the wall, floor, or cavity barrier.

b) Where a proprietary sealing system is not used, firestop around the pipe, keeping the opening for the pipe as small as possible. The nominal internal diameter of the pipe should not exceed the relevant dimension given in Table 14.

c) A pipe of lead, aluminium, aluminium alloy, fibre-cement, or PVC, with a maximum nominal internal diameter of 160 mm, may be used with a sleeve made out of a high melting point metal or non-combustible material.

Fire Stopping

If a fire-separating element is to be effective, every joint or imperfection of fit, or opening to allow services to pass through the element, should be adequately protected by sealing or firestopping in accordance with Section 11 paragraphs 11.17 – 11.19 Approved Document B to ensure that the fire resistance of the element is not impaired. All openings for pipes, ducts, conduits, or cables to pass through any part of a fire-separating element should be:

i. kept as few in number as possible; and
ii. kept as small as practicable; and
iii. fire-stopped (which in the case of a pipe or duct, should allow thermal movement).

All fire stopping should be carried out by a Competent, third party certificated organisation.

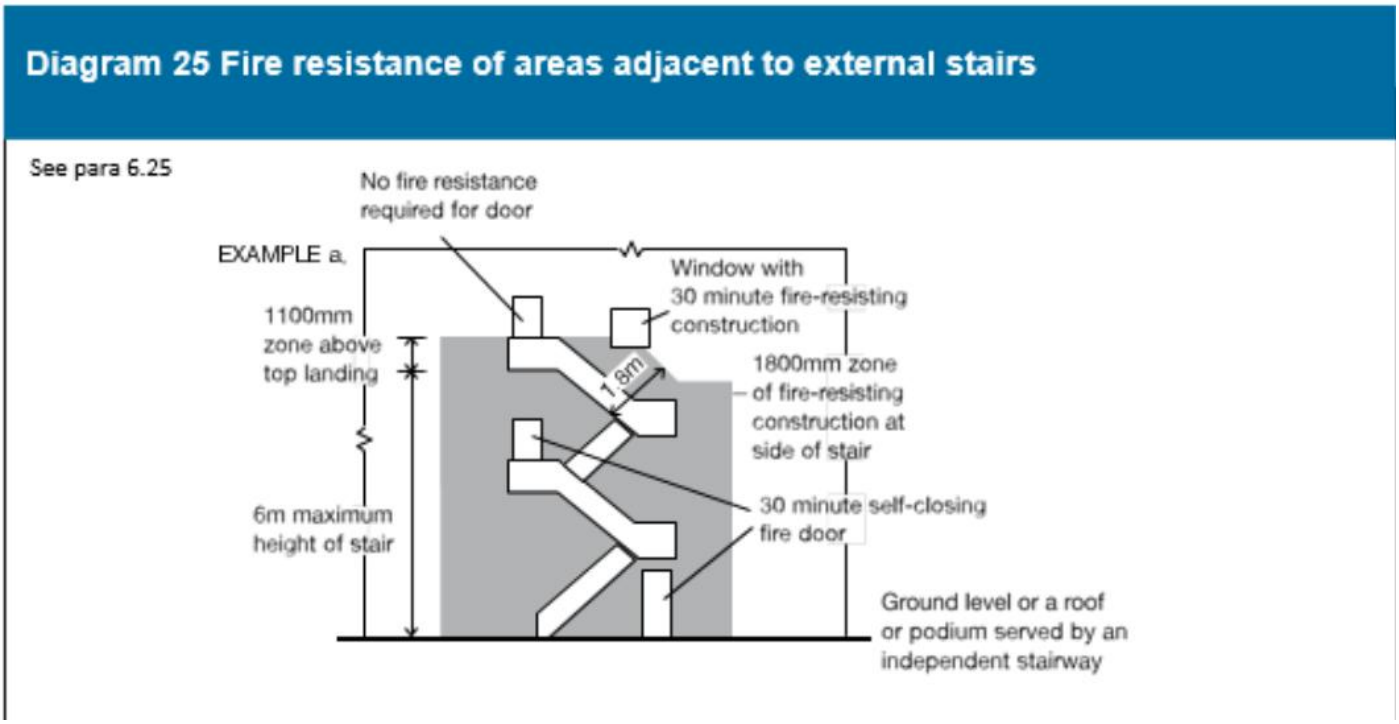
10 External Fire Spread

10.1 Resisting fire spread over external walls.

The external wall of a building should not provide a medium for fire spread if that is likely to be a risk to health and safety. Combustible materials and cavities in external walls and attachments to them can present such a risk, particularly in tall buildings. To reduce the risk of vertical fire spread as well as the risk of ignition from flames coming from adjacent buildings the construction of external walls and their coverings should be in accordance with Approved Document B, Section 13.
It is recommended that all materials including insulation forming external wall make up (with the exception of seals and gaskets) will be Class A2-s1, d0 (BS EN 13501-1) or better.
The areas adjacent to external stairs must be 30-minute fire resistant as per diagram 25 below.

Fire resistance for external staircase

Diagram 25 Fire resistance of areas adjacent to external stairs



10.2 Resisting Fire Spread over Roof Coverings

The term roof covering is used to describe constructions which may consist of one or more layers of materials but does not refer to the roof structure as a whole. The materials used for covering a roof should be capable of protecting the roof structure when exposed to external fire and give adequate protection against the spread of fire, as specified in Table A5 of Approved Document B Volume 1 ((AA (National class) or B_{ROOF} (t4) (European class).

10.3 Fire Spread to Neighbouring Buildings

Separation Distances

Referring to BR 187 (External fire spread: Building separation and boundary distances).
The building is provided with sprinklers in accordance with BS 9251. In accordance with BS9991 Clause 18, minimum separation distances are halved.
The greatest area of any façade to a flat will be contained within an enclosing rectangle of 3m x 9m.
An enclosing rectangle up to 3m x 9m is permissible up to a boundary distance of 1.75m.
The building is more than 1.75m from any boundary or notional boundary on all elevations.

11 ACCESS AND FACILITIES FOR THE FIRE FIGHTING SERVICE

11.1 Vehicular Access

Access should be provided for pumping appliances to within 60m of all points inside each flat in the block; the distance should be measured on a route suitable for laying a hose. (ADB paragraph 17.3). Where this cannot be achieved a dry fire main should be provided in accordance with paragraph 16.3 and vehicle access should meet the requirement of paragraph 17.6 (ADB).
Access routes and hardstandings should comply with the guidance in Table 20 ADB.

Approved Document B Table 8

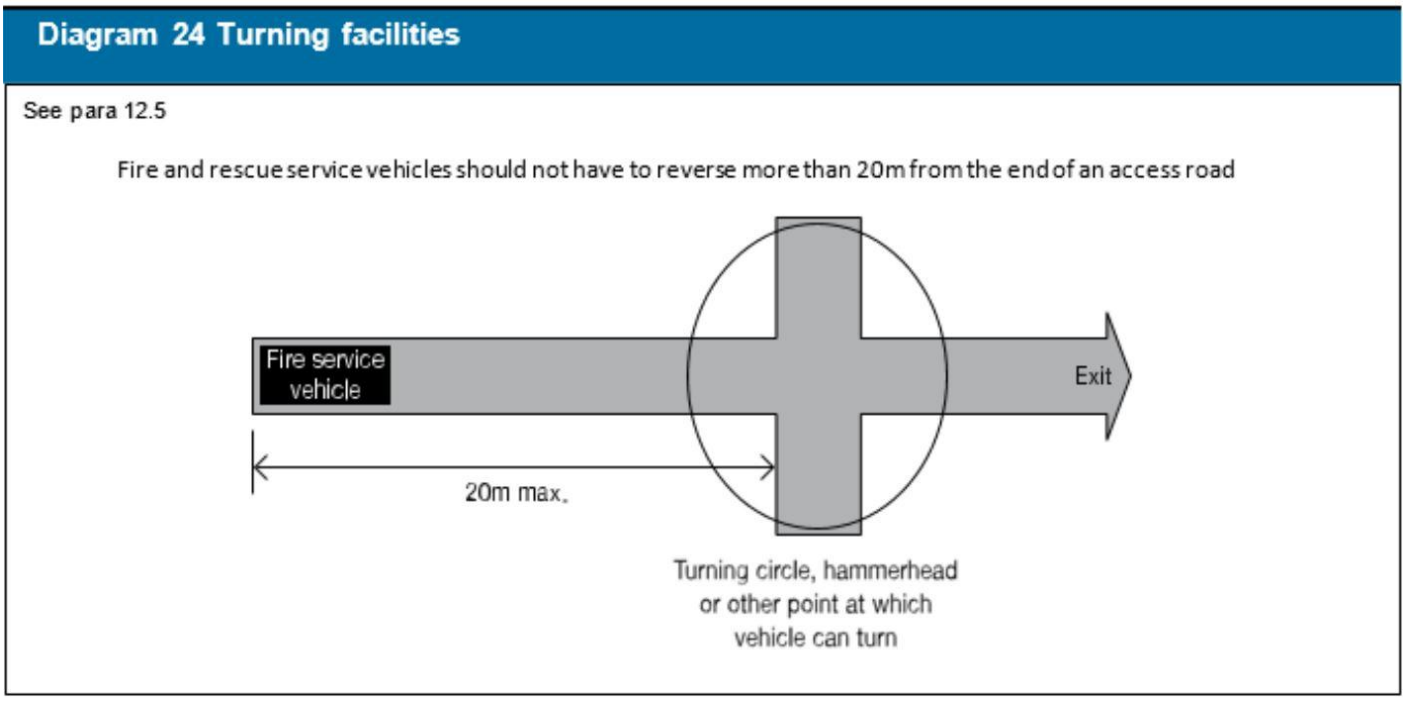
Table 8 Typical fire and rescue service vehicle access route specification *

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

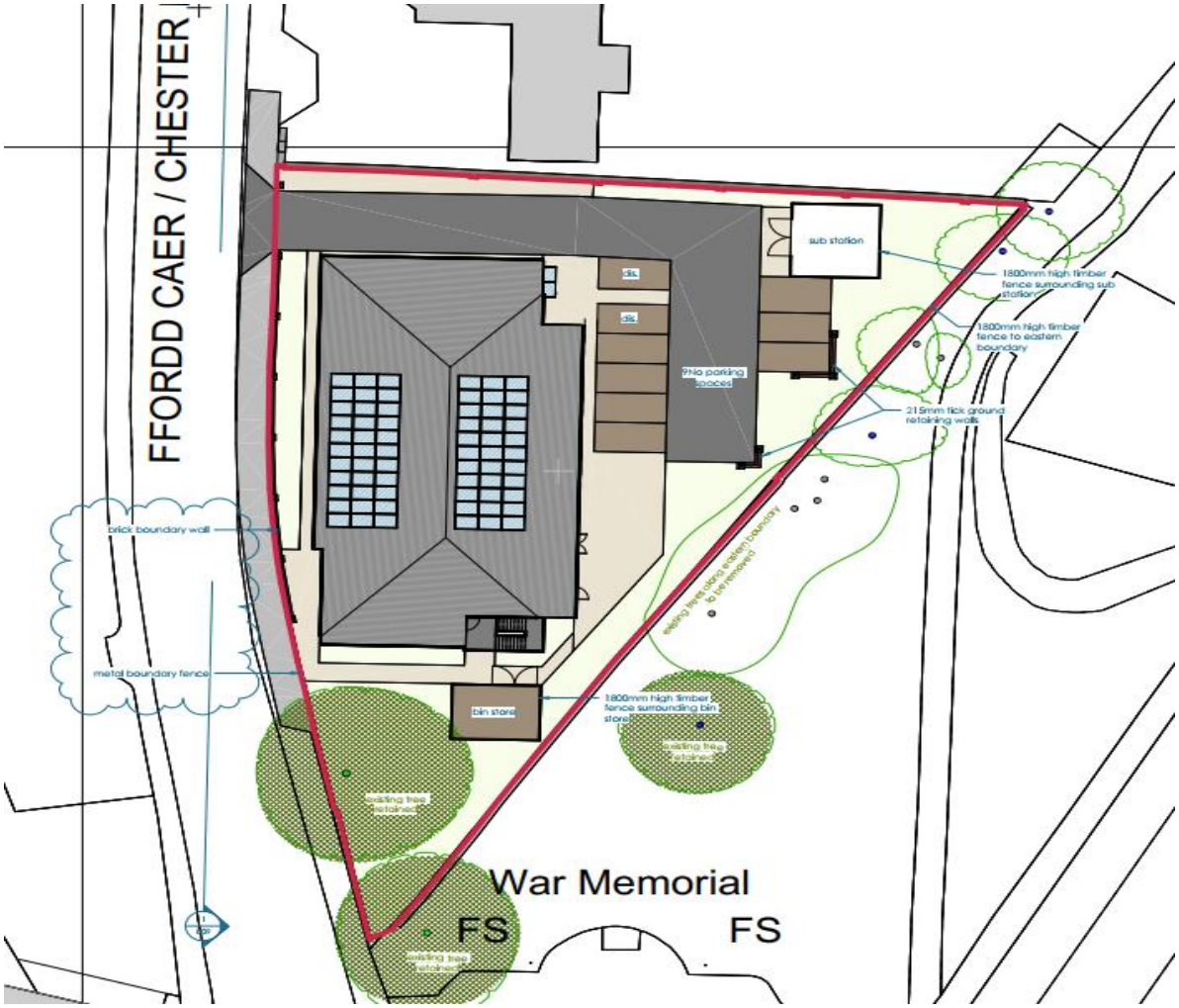
Dead-end access routes longer than 20m require turning facilities, as in Diagram 50 ADB. Turning facilities should comply with the guidance in Table 17.11 ADB.

Approved Document B Drawing 24 Turning Facilities

Diagram 24 Turning facilities



Access for the Fire and Rescue Services



11.2 HYDRANTS AND WATER SUPPLIES

Hydrants should be provided to within 90m of the entrance of the development and should be a maximum of 90m apart. Each fire hydrant should be clearly indicated by a plate, fixed nearby in a conspicuous position, in accordance with BS 3251.
Hydrants should meet the minimum flow requirement of 1500l/min given in BS9990.

Where there is insufficient pressure and flow in the water main, or an alternative arrangement is proposed, the alternative source of supply should be provided in accordance with the following recommendations:

a. a charged static water tank of at least 45,000 litre capacity; or
b. a spring, river, canal, or pond capable of providing or storing at least 45,000 litres of water at all times of the year, to which access, space and a hard standing are available for a pumping appliance; or
c. any other means of providing a water supply for firefighting operations considered appropriate by the fire and rescue authority.

12. FIRE SAFETY MANAGEMENT

Wales and West Housing Association has a dedicated compliance division which has a robust fire safety management policy, which it enforces throughout all of its' housing schemes.
This management policy will include:

- Post Development and Pre-Occupancy Fire Risk Assessment to confirm that all the fire safety measures in place are suitable for the building and its' occupants.
- Ongoing Person Based Fire Risk Assessment by either the Housing Officer or the Asset Management Officer to confirm that all the fire safety measures in place are suitable for the building and its' occupants.
- That the residents are familiar and conversant with the fire safety procedures in place.
- That staff and contractors are familiar and conversant with the fire safety procedures in place.
- That the maintenance of all aspects of the fire protection measures is carried out on a regular basis and in conjunction with the relevant standard applicable.
- The maintenance of the buildings plant and equipment is carried out on a regular basis and in conjunction with the relevant standard applicable.
- Ensuring that systems respond properly in an emergency.
- Ensuring that access is maintained for the Fire and Rescue Service and their equipment, and any contingency planning required.