Lidl, Ickenham Road, Ruislip

Planning Fire Safety Strategy

03 February 2025

Lidl Great Britain Ltd.

3649

BB7

Revision History

Version	Date	Author	Comments
01	04.07.24	Kyle Adams	Issue in support of planning application
02	03.02.25	Fiona McAleese	Update to Site Plan and GAs.

Document reference
3649.PFSS.03.02.25 (V02)

Prepared by	**Kyle Adams** +44 (0) 203 603 5535 kyleadams@bbseven.com	BB7 Belfast NextSpace Antrim Enterprise Park 58 Greystone Road Antrim BT41 1JZ
Reviewed by	**James Keenan** +44 (0) 203 603 5535 jameskeenan@bbseven.com	BB7 Belfast NextSpace Antrim Enterprise Park 58 Greystone Road Antrim BT41 1JZ
Prepared for	**Sam Carson** +44 (0) 7812 002 055 samuel.carson@lidl.co.uk	Lidl Great Britain Ltd. 4 – 14 Blackbird Hill London NW9 8SD

Contents

List of Figures

List of Tables

1. Introduction

1.1 Objective of Report

The objective of this report is to support the planning application and outline the strategic approach taken to demonstrate compliance with Part B *Fire Safety* of the Building Regulations 2010 (as amended) for the proposed Lidl Store at Ickenham Road, Ruislip.

This report will provide a summary on the key aspects of fire safety, which correlate with the corresponding recommendations in London Plan Policy D12.

1.2 Project Description

Lidl is proposing to construct and occupy a new retail store at Ickenham Road, Ruislip. The proposed store will comprise a 1,212m^2 Sales Area and 613m^2 of back of house areas, including *inter alia* a Warehouse, Bakery Prep, and Chillers. The Gross Internal Area of the store will be 1,825m^2.

The building will be flanked on three sides by public roadways; namely, Church Avenue, Ickenham Road and Sharps Lane to the East, South and West, respectively. The North elevation is located adjacent to a site boundary.

An overview of the site indicated in Figure 1.

Figure 1: Proposed Site Location

1.3 Fire Strategy Summary

Table 1 summarises the key fire safety items that have been duly considered as part of the Planning Fire Safety Strategy (PFSS).

Table 1: Fire Strategy Summary

Section of Report	Description
Means of Escape	• Evacuation strategy: Simultaneous evacuation on confirmed alarm. • Design occupancy: 333, of which up to 303 occupants could be located in the Sales Area. • Travel distances: Travel distances should comply with ADB recommendations. • Exit provisions: – Sales Area: 2 × ≥ 1,565mm clear width storey/final exits. – Warehouse: 2 × ≥ 750mm clear width storey exits. • External stairs: – External stairs should be at least as wide as the minimum required escape route that they serve. – External walls near external stairs should comply with Diagram 3.4 of ADB. • Disabled Refuge Provisions: Areas to which occupants with disabilities are afforded access, and a change in level occurs along their route to a point of safety outside the building, should be provided with a disabled refuge space located within a protected enclosure. • Evacuation Lifts: Lifts are not provided in the current scheme. Therefore, evacuation lifts are not considered to be necessary for compliance with Policy D5.
Active Fire Safety Systems	• Fire detection and alarm system: As a minimum, a Type L3 standard of automatic fire detection and alarm, designed and installed in accordance with BS5839-1, should be provided. • Emergency Lighting: Escape routes should be provided with emergency lighting complying with the relevant recommendations in Table 5.1 of ADB and BS5266-1. • Emergency Voice Communication System(s): An emergency voice communication system should be incorporated which should provide a two-way communication link from each disabled refuge area to the proposed evacuation control point.
Internal Fire Spread – Linings	• Internal linings should comply with Table 4 of this Planning Fire Safety Strategy.
Internal Fire Spread – Structure	• Structural Fire Resistance: Elements of structure that are required to be fire-resisting should achieve at least 60mins FR. • Compartmentation: Based on a floor area less than 2,000m^2, sub-dividing compartmentation is not required for compliance with ADB. • The protected 'back of house' corridor should be separated from adjacent accommodation by at least 30mins fire resistance and FD30S self-closing fire doors. • Places of special fire hazard should be separated from adjacent accommodation by at least 30mins FR.
External Fire Spread	• External surfaces: Based on a building height less than 18m above ground level and the elevations being located 1m or more from the relevant boundary, ADB would not place any restrictions on the external surfaces of the walls. • External wall construction: Based on a top storey height less than 18m above ground level, there would be no prescriptive guidance in support of the Building Regulations that would require any insulation product, filler materials, etc., used in the external wall construction to achieve Class A2-s3, d2 or better. • Unprotected Areas: A detailed external fire spread analysis, based on the recommendations of BR187, should be carried out and presented in the forthcoming detailed Fire Strategy Report. Where applied fire protection is required, it should achieve at least 60mins FR for integrity and 15mins FR for insulation, provided from inside only.

Section of Report	Description
Access and Facilities for the Fire Service	• Fire Service Access: Based on an internal floor area less than 2,000m^2, the building should provide access for a pump appliance to at least 15% of its perimeter.

The remainder of this Planning Fire Safety Strategy provides further detail on the various aspects of fire safety design which are considered to comply with the functional requirements of Part B *Fire Safety* of the Building Regulations 2010 (as amended) and meet the requirements of London Plan Policy D12 (where applicable).

1.4 Declaration of Compliance

This PFSS is considered to comply with the relevant legislation and meet the recommendations of London Plan Policy D12, where applicable.

Table 2: Declaration of Compliance

Declaration of Compliance	
Author:	Kyle Adams Associate Fire Engineer BSc (Hons) MSc AIFireE 
Reviewer:	James Keenan Associate Fire Engineer PhD MEng MSc AIFireE 

2. Legislation and Guidance

2.1 The London Plan

2.1.1 Overview of Policy D5 and D12

The London Plan is a spatial development strategy setting out an economic, environmental, transport and social framework for the development of London. The plan promotes inclusive design and fire safety through Policy D5 and Policy D12 respectively.

Policy D5 *'Inclusive Design'* states that, *'the buildings should be designed and built to accommodate robust emergency evacuation procedures for all building users, including those who require level access. All building users should be able to evacuate from a building with dignity and by as independent means as possible……The installation of lifts which can be used for evacuation purposes (accompanied by a management plan) provide a dignified and more independent solution. The fire evacuation lifts, and associated provisions should be appropriately designed, constructed, and include the necessary controls suitable for the purposes intended'.*

The London Plan Policy D12 'Fire Safety' states that, *'in the interests of fire safety and to ensure the safety of all building users, all development proposals must achieve the highest standards of fire safety and ensure that they:*

1. *identify suitably positioned unobstructed outside space:*
    a. *for fire appliances to be positioned on; and*
    b. *appropriate for use as an evacuation assembly point.*
2. *are designed to incorporate features which reduce the risk to life and the risk of serious injury in the event of a fire; including appropriate fire alarm systems and passive and active fire safety measures;*
3. *are constructed in an appropriate way to minimise the risk of fire spread;*
4. *provide suitable and convenient means of escape, and associated evacuation strategy for all building users;*
5. *develop a robust strategy for evacuation which can be periodically updated and published, and which all building users can have confidence in; and*
6. *provide suitable access and equipment for firefighting which is appropriate for the size and use of the development.'*

2.1.2 Proposed Fire Strategy

The D12 'Fire Safety' policy requests that all major development proposals should be submitted with a fire statement, which is an independent fire strategy, produced by a third party suitably qualified assessor.

The statement should detail how the development proposal will function in terms of:

1. *the building's construction: methods, products and materials used, including manufacturers' details;*
2. *the means of escape for all building users: suitably designed stair cores, escape for building users who are disabled or require level access, and associated evacuation strategy approach;*
3. *features which reduce the risk to life: fire alarm systems, passive and active fire safety measures and associated management and maintenance plans;*
4. *access for fire service personnel and equipment: how this will be achieved in an evacuation situation, water supplies, provision and positioning of equipment, firefighting lifts, stairs, and lobbies, any fire suppression and smoke by ventilation systems proposed, and the ongoing maintenance and monitoring of these;*

5. *how provision will be made within the curtilage of the site to enable fire appliances to gain access to the building; and*
6. *ensuring that any potential future modifications to the building will take into account and not compromise the base build fire safety/protection measures.*

With regards to each of the items listed above, the proposed scheme will be developed using the latest design guidance available to demonstrate compliance with Part B *Fire Safety* of the Building Regulations 2010 which will consider the key aspects as detailed above.

The Fire Strategy Report that will be used to demonstrate compliance with the Building Regulations will be developed based on the strategic approach outlined in this report. This report will provide the performance standards required for fire safety with respect to the construction of the buildings, methods, products, and performance of materials to be used; see Section 7 for information regarding the external walls.

The evacuation strategy with regards to means of escape including escape route widths, stair capacities and disabled evacuation, for Policy D5, are presented in Section 3 of this report.

Active fire safety systems proposed are outlined in the active fire safety systems section (Section 4) and passive fire safety provisions are presented throughout this report where applicable, e.g. principally within the internal fire spread section (see Section 6).

External Fire Spread and External Wall construction considerations are outlined in Section 7.

Firefighting access provisions and facilities for firefighting operations including water supplies are presented in the relevant sections, i.e. access and facilities for the Fire Service (see Section 8).

With regards to building management and evacuation responsibilities, an overview is presented in the Fire Safety Management section of this report (see Section 9).

2.2 The Building Regulations 2010 (as amended)

The Building Regulations 2010 (as amended) lay down performance requirements, which must be achieved in building construction, including Part B *Fire Safety*. Regarding fire safety, Approved Document B – Volume 2 *Buildings other than Dwellinghouses* (as amended) (ADB) provides guidance on how to meet the requirements of the Building Regulations in most cases. However, ADB does not represent the only method which can be used to achieve compliance with the Regulations. ADB states the following in this regard:

'Fire safety engineering might provide an alternative approach to fire safety. Fire safety engineering may be the only practical way to achieve a satisfactory standard of fire safety in some complex buildings that contain different uses... Fire safety engineering may also be suitable for solving a specific problem with a design that otherwise follows the provisions in this document.'

Section 0.18 of ADB – Fire Safety Engineering

In complex or bespoke schemes, a standard approach will not always provide a satisfactory fire strategy. Therefore, where the proposed scheme does not fully comply with the recommendations of ADB, it is intended to incorporate the latest fire safety guidance in BS7974 with the overarching aim of achieving a satisfactory design solution and Building Regulations approvals.

2.3 Purpose Group Classification

Appropriate technical guidance on Building Regulations compliance is based on the purpose group classification of the building/compartment.

The primary function of the Lidl Store will be for sales purposes. Therefore, the fire safety provisions for the store will be based on design guidance provided for Purpose Group 4 *Shop and Commercial* buildings.

2.4 Regulatory Reform (Fire Safety) Order 2005

The Regulatory Reform (Fire Safety) Order 2005 (RRO) in England and Wales imposes a general duty to take such fire precautions as may be reasonably required to ensure that the premises are safe for the occupants and those in the immediate vicinity. This places an onus on the management of the building to carry out risk assessments of the fire precautions during its operational life, i.e. a self-assessment regime, and to have robust fire safety management procedures in place.

Generally, compliance can be achieved with robust maintenance, staff training and housekeeping regimes and by undertaking regular fire risk assessments.

The local Fire and Rescue Service is responsible for enforcing these Regulations.

2.5 Property Protection

The Building Regulations specifically deal with life safety aspects. Although property protection and asset protection are not addressed by the Building Regulations, it is an issue which needs to be considered when designing a building which contains significant assets and to address business continuity interests.

Some of the fire safety provisions which are necessary for life safety, including enclosure of places of special fire hazard and automatic fire detection will also be beneficial for property protection.

2.6 The Construction (Design and Management) Regulations 2015

The Construction (Design and Management) [CDM] Regulations 2015 apply to all projects undertaken within the United Kingdom (formed of Great Britain and Northern Ireland), subject to specific applicability criteria specified within the regulations.

This Planning Fire Safety Strategy outlines the required fire safety provisions required for compliance with Part B of the Building Regulations 2010 (as amended). It has not been specifically prepared in the pursuance of compliance with the CDM Regulations.

The Principal Contractor/Contractor should ensure, so far as is reasonably practicable, the early installation and operation of the fire safety provisions outlined within this Planning Fire Safety Strategy. Any additional fire safety provisions required during the construction phase of the project should be specified within the contractor's construction phase fire strategy/plan.

Where any specific recommendations or provisions are made within this report which are considered to pose significant residual CDM risk, this information will be made available to the Principal Designer.

Where the Architect or other specialist consultants refer to and apply the standards referred to within this report to specify works, or for any reason, they are understood to have a sufficient understanding of that standard and can advise to the client, principal designer, contractors and building occupier of any potential CDM issues or implications.

3. Means of Escape

3.1 Evacuation Strategy

The evacuation strategy for the building will be based on simultaneous evacuation upon confirmed alarm with escape routes from the building sized on this basis.

This does not preclude the use of an investigation period on the fire alarm system to allow management to ascertain the authenticity of an initial alert. As part of the management of health and safety procedures the operator should prepare and implement procedures for the safe evacuation of all occupants from the building.

Fire Safety Management is discussed further in Section 9.

3.2 Assembly Points

Sufficient space should be allocated remote from the building to allow occupants to muster following evacuation in a fire event.

Each assembly point should be sufficiently remote from the building so that occupants are not at risk from falling debris from the building façade. The assembly points should also be positioned so they do not obstruct access for the Fire Service.

3.3 Design Occupancy

Floor space factors are generally used to assess the required capacity of escape routes in speculative buildings. When a designated bespoke occupancy is not known, there are varying recommended floor space factors in current guidance documents. However, standard fire safety guidance documents acknowledge where bespoke occupancy figures are available these can be applied. This approach is recommended in ADB.

The design occupancy has been based on furniture layouts (where known) and by applying floor space factors (in accordance with Table D1 of ADB). This is summarised in Table 3.

Table 3: Design Occupancy

Location	Floor Area (m^2)	Floor Space Factor (m^2/person)	Occupancy
Sales Area	1,212	4 [1]	303
Warehouse	217	30	7
Bakery Warehouse	52	30	2
Chiller	44	30	2
Bakery Prep	65	7	9
Cash Office	-	No. of seats	1
Staff Room	-	No. of seats	8 [2]
DRS Store	40	30.0	1
		Total Design Occupancy:	**333**

Note 1: Convenience stores such as Lidl are not anticipated to be subject to high spikes in occupant density that may occur in a seasonal sale scenario. An occupancy density of 4m^2/person is recommended in Table 9 of BS9999 for supermarkets and is considered appropriate for this purpose. The use of 4m^2/person in the Sales Area has been discussed and agreed with Lidl.

Note 2: The design occupancy in the Staff Room will be mutually exclusive with the Sales Area uses, i.e. both spaces will not be occupied to full capacity simultaneously. Therefore, the design occupancy associated with this area has not been included in the overall (total) design occupancy of the unit.

On the above basis, the total design occupancy in the Lidl Store will be 333, of which up to 303 occupants could be located in the Sales Area.

3.4 Travel Distances

ADB recommends that travel distances should be limited to the following:

- Shop and Commercial:
  - 18m in a single direction; and
  - 45m where alternatives are available.
- Storage Areas:
  - 25m in a single direction; and
  - 45m where alternatives are available.

Travel distances should comply with the above ADB recommendations.

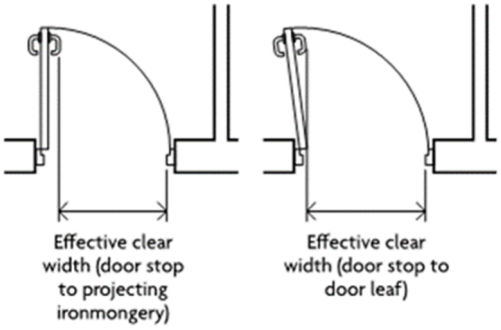
Travel distances should be kept under review as the design progresses.

3.5 Exit Provisions

3.5.1 Measurement of Exit Width at Doors

The method of measurement of exit widths is shown in Figure 2. The necessary exit width measurements noted for the scheme should be based on this approach.

Figure 2: Measurement of Exit Width



3.5.2 Exit Provision from Standard Rooms

ADB recommends that where there are 60 or fewer occupants in a room or on a storey, one 750mm (clear width) exit is sufficient provided the single direction of travel is within the recommended limits (as outlined in Section 3.4).

Where the occupancy of a room is less than or equal to 60, at least one 750mm clear width exit should be provided.

Wider exit widths may be necessary to comply with other aspects of the Building Regulations, which are outside the scope of this report.

3.5.3 Storey/Final Exits

3.5.3.1 Sales Area

The design occupancy in the Sales Area (including the Bakery Prep and DRS Store) is 313.

The Sales Area will be provided with two exits, i.e. the main entrance/exit and an exit on the West Elevation leading to external steps. Each exit should achieve a minimum clear width of 1,565mm.

N.B. The two exits leading to the main entrance/exit should each achieve a minimum clear width of 1,050mm.

3.5.3.2 Warehouse

The design occupancy in the Warehouse (including the Chiller and Bakery Warehouse) is 11.

The Warehouse will be provided with two final exits which both lead to external steps. Each exit should achieve a minimum clear width of 750mm.

Wider exit widths may be necessary to comply with other aspects of the Building Regulations, which are outside the scope of this report.

3.6 Inner Rooms

There are several inner room arrangements in the proposed scheme.

Where inner room arrangements occur, one of the following provisions should be incorporated:

- The enclosures (walls or partitions) of the inner room should stop a minimum of 500mm below the ceiling.
- A 0.1m^2 vision panel should be incorporated in the wall or door of the inner room where it connects with the access room.
- The access room should be provided with automatic smoke detection.

3.7 Corridor Provisions

The back of house corridor which will serve the Cash Office, Utility, I.T. Room, Staff Room and Cloak Room will form a dead-end corridor arrangement. In accordance with ADB recommendations, the corridor should be separated from adjacent accommodation by at least 30mins fire resistance (FR) and FD30S self-closing fire doors.

3.8 External Escape Routes

Where an external escape route is within 1,800mm of an external wall, the external wall should achieve at least 30mins fire resistance up to at least 1,100mm above the surface of the escape route.

3.9 Vertical Means of Escape

3.9.1 External Stairs

Where provided, external stairs should be at least as wide as the require escape routes that they serve. The clear width of external stairs is measured between walls and balustrades. Handrails can impinge up to 100mm into this width.

Where provided near an external wall, external stairs should comply with the following ADB recommendations:

- Fire-resisting construction (30mins FR minimum) is required for the building envelope within the following zones, measured from the flights and landings of the external stair:
  - 1,800mm above and horizontally;
  - 9m vertically below; and
  - 1,100mm above the top landing of the stair.

- Fire-resisting construction (30mins FR minimum) should be provided for any part of the building (including the doors) within 1,800mm of the escape route from the foot of the stair to a place of safety. This does not apply if there are alternative escape routes from the foot of the external escape stair.
- Glazing in areas of fire-resisting construction should be fixed shut and fire-resisting, in terms of integrity but not insulation (30mins FR minimum).

The above recommendations are shown graphically in Diagram 3.3 of ADB (replicated in Figure 3).

Figure 3: Fire Resistance of Areas near to External Stairs

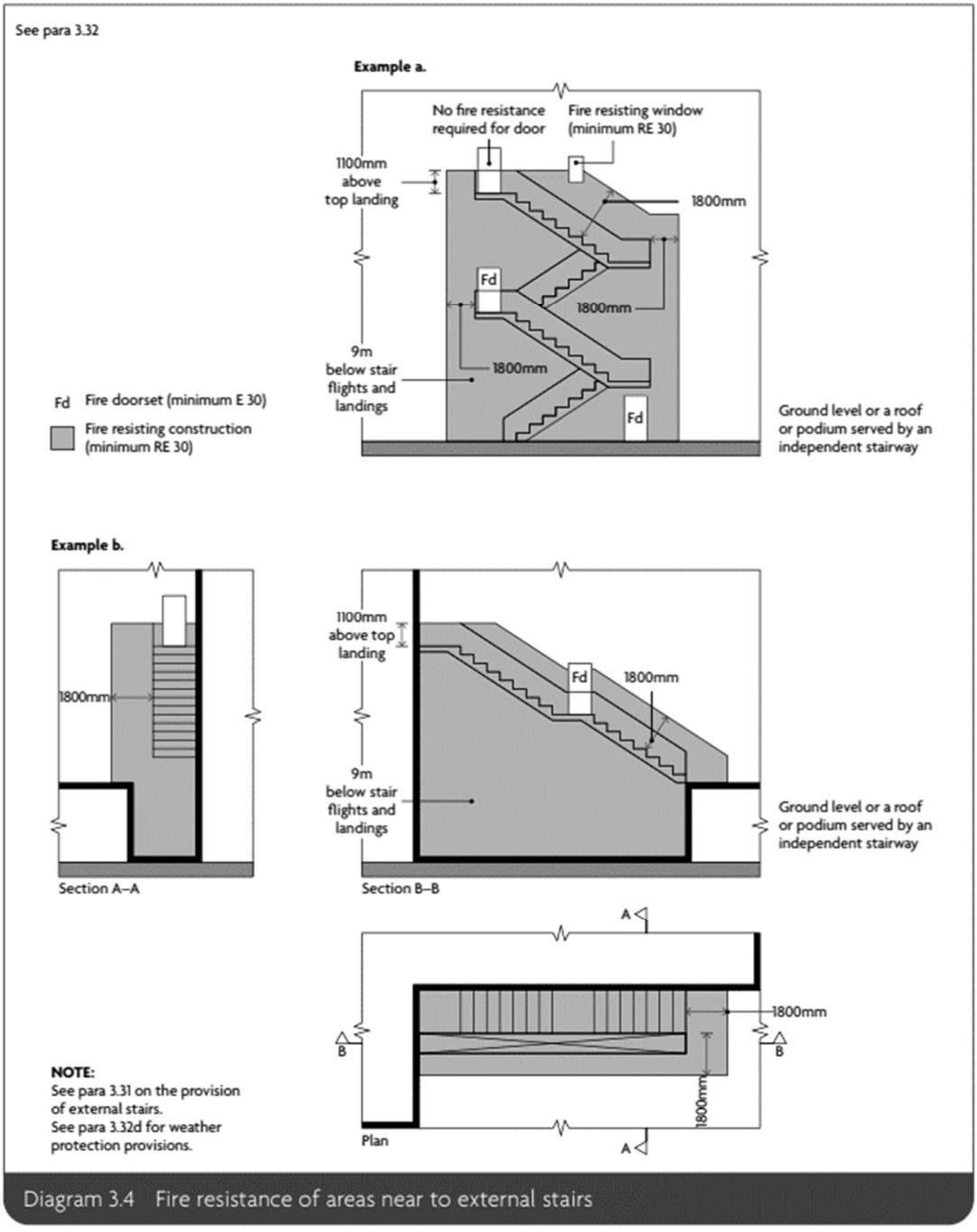


Diagram 3.4 Fire resistance of areas near to external stairs

3.9.2 Final Exits

Final exits will be unambiguously marked by appropriate signage and will ensure the effective evacuation of occupants away from the building to a place of safety.

Final exits will be at least as wide as the required escape routes that they serve.

3.10 Disabled Means of Escape

3.10.1 Disabled Refuges

Areas to which occupants with disabilities are afforded access, and a change in level occurs along their route to a point of safety outside the building, should be provided with a disabled refuge space located within a protected enclosure, e.g. an external stair landing.

Refuge spaces should comply with the relevant recommendations in Clause 3.4 – 3.9 (inclusive) of ADB and have minimum dimensions of 900mm × 1,400mm. Where disabled refuge spaces are provided, they should not impinge on the minimum required escape route widths.

Management procedures should be developed to ensure the safety of all occupants in a fire emergency, including disabled occupants. Staff should be trained in procedures incorporating the evacuation of occupants who require assistance.

Disabled refuges have not currently been provided in 'staff only' areas of the building where a change in level occurs along a staff member's route to a point of safety. If there is potential for these areas to be accessed by disabled occupants, it is recommended that disabled refuges are provided in accordance with ADB recommendations. Lidl should incorporate suitable management arrangements for the safe evacuation of all occupants within the building, including staff members and member of the public.

3.10.2 Evacuation Lifts

Evacuation lifts are not a requirement for Building Regulations compliance. However, Policy D5(B5) of the London Plan notes the following:

'In all developments where lifts are installed, as a minimum at least one lift per core (or more subject to capacity assessments) should be a suitably sized fire evacuation lift suitable to be used to evacuate people who require level access from the building.'

Lifts are not provided in the current scheme. Therefore, evacuation lifts are not considered to be necessary.

3.11 General Provisions

3.11.1 Height of Escape Routes

All escape routes will have a clear head height of not less than 2m with no projections below this height, except for door frames at doorways.

3.11.2 Door Fastening Devices

Where doors on escape routes are required to be lockable, they will only be fitted with a simple fastening device not involving the use of a key or more than one mechanism that can be easily operated from the side of escape.

Secure doors provided with electrically powered locks should return to the unlocked position as follows:

- on operation of the fire detection and alarm system;
- on loss of power or system error; or
- on activation of the security override (i.e. Type A) conforming to BS 7273-4 located on the side of escape.

Doors providing escape for more than 60 occupants should be free from fastenings or should be provided with panic fastenings in accordance with BS EN 1125.

3.11.3 Direction of Opening

Doors should open in the direction of escape, i.e. outward opening, where the door provides escape for more than 60 occupants or if it is from an area where there is a very high risk of fire with potential for rapid fire growth.

All doors on escape routes should open through not less than 90° and swing clear of any changes in floor level. The swing of doors which open onto corridors should not reduce the minimum required width of the escape routes along the corridors.

3.11.4 Automatic Doors

Where automatic doors are provided on an escape route, they should comply with one of the following:

1. They are automatic doors of the required width and comply with one of the following conditions:
    a. they should be arranged to fail safely to outward opening from any position of opening;
    b. they should be provided with a monitored failsafe system for opening the doors if the mains supply fails; or
    c. they should fail safely to the open position in the event of power failure.
2. non-automatic swing doors of the required width should be provided immediately adjacent to the automatic door.

ADB does not make specific reference to sliding doors. Standard guidance recommendations such as BS9999 states that an escape route should not be by way of a power-operated or manually operated sliding door, except those designed to fail open on loss of power or that can break open from any position throughout their operating parameters (see BS7273-4).

3.11.5 Exit Signs

Every doorway or other exit providing access to a means of escape, other than exits in ordinary use (e.g. main entrances), should be distinctively and conspicuously marked by an exit sign in accordance with BS ISO 3864-1 and BS 5499-4.

3.11.6 Shop Storerooms

ADB recommends that fully enclosed walk-in storerooms should be separated from retail areas with fire-resisting construction if they negatively affect the means of escape.

Fire-resisting construction is not necessary if the walk-in storeroom complies with either of the following:

- has an automatic fire detection and alarm system; or
- is fitted with sprinklers.

As it will not be necessary for occupants from the Sales Area to evacuate through the Warehouse, it is not considered necessary for the Warehouse to be separated from the Sales Area by fire-resisting construction (see also Section 6.2.2).

4. Active Fire Safety Systems

4.1 Automatic Fire Detection and Alarm

4.1.1 Proposed Installation

A Category L3 automatic fire detection and alarm system, designed and installed in accordance with BS 5839-1, should be provided in the Lidl Store as a minimum. The proposed standard of automatic fire detection and alarm should provide coverage in the following areas:

- on escape routes and circulation routes, e.g. corridors, etc.; and
- rooms immediately adjacent to escape routes and circulation routes.

This level of automatic fire detection has mutual benefits for life safety and property protection. Early detection of fire should ultimately lead to more prompt staff reaction and potential fire extinguishment with handheld extinguishers at the early stages of fire growth and smoke spread.

Full cause-and-effect details for the addressable fire alarm system should be developed by the system designer in consultation with the building operator and the Statutory Authorities.

4.1.2 Means of Alarm

The mode of alarm should be in line with BS 5839-1 and should take account of the following:

- the alarm system should include audible sounders adequately located throughout the store (and accessible maintenance/plant areas) to alert all occupants; and
- flashing beacons should be provided where there would be potential for lone occupants and high background noise levels.

Consideration should be given to the provision of vibrating and strobe alert systems where occupants with sensory impairments could be alone.

4.1.3 Fire Alarm System Interfaces

The fire alarm system will need to be coordinated with the building management system, mechanical, electrical and security systems. The items below represent the strategic interface items for the fire alarm system, but it is not intended to be exhaustive:

- Where electro-magnetic hold open devices are provided on fire doors that need to be held open for business operations; these devices should disengage on activation of the fire alarm system.
- Any electronic locking systems on doors across escape routes should disengage on activation of the fire alarm system. Manual override facilities will also need to be provided.
- Control devices should be provided to shut off audio systems that might otherwise interfere with the operation of the fire alarm system.

Full details of the fire alarm interfaces should be provided in the cause-and-effect schedule for the fire alarm system.

4.2 Fire Suppression

For compliance with ADB, the provision of an automatic sprinkler system would not be necessary from a life safety perspective.

4.3 Emergency Lighting

Suitable lighting should be provided to enable safe movement of occupants along escape routes to a place of relative or ultimately safety. Emergency lighting, where required, should be provided in accordance with Table 5.1 of ADB (replicated in Figure 4) and BS 5266-1.

Figure 4: Provisions for Escape Lighting

Table 5.1 Provisions for escape lighting

Use of the building or part of the building	Areas requiring escape lighting
Residential	All common escape routes[1]
Office, industrial, storage and other non-residential	a. Underground or windowless accommodation b. Stairs either: • in a central core • that serve storey(s) more than 18m above ground level c. Internal corridors more than 30m long d. Open-plan areas of more than 60m²
Shop and commercial, and car parks	a. Underground or windowless accommodation b. Stairs either: • in a central core • that serve storey(s) more than 18m above ground level c. Internal corridors more than 30m long d. Open-plan areas of more than 60m² e. All escape routes (other than the following exception) to which the public are admitted.[1] The exception is shops that meet all of the following: • have a maximum of three storeys • have no sales floor of more than 280m² • are *not* a restaurant or bar
Assembly and recreation	a. All escape routes[1] b. Accommodation except for that which is open on one side to view sport or entertainment during normal daylight hours
Any purpose group	a. All toilet accommodation with a minimum floor area of 8m² b. Electricity and generator rooms c. Switch room/battery room for emergency lighting system d. Emergency control rooms

NOTE:
1. Including external escape routes.

4.4 Mechanical Ventilation System

Any system of mechanical ventilation should be designed to ensure that in a fire the air movement in the store is directed away from protected escape routes and exits, or that the system (or an appropriate section of it) is closed down.

In any system of air conditioning where air can be recirculated out of the fire compartment, the system should either:

- automatically shut down when smoke is detected; or
- switch the ventilation system from recirculating mode to extract to open air and therefore divert any smoke to the outside of the building.

4.5 Emergency Voice Communication

An emergency voice communication (EVC) system complying with BS5839-9 should be incorporated to provide a two-way communication link from each disabled refuge area to the proposed evacuation control point normally adjacent to the building's main fire alarm panel.

4.6 Emergency Power Supply

The design of all life safety systems should be undertaken to ensure there are failsafe provisions.

This includes the provision of an emergency power supply to all life safety systems including the emergency lighting system, the automatic fire detection and alarm system, etc.

Taking into consideration the proposed life safety systems, a back-up battery supply for this arrangement should be reasonable.

5. Internal Fire Spread – Linings

5.1 Performance of Walls and Ceilings

The surface lining of walls and ceilings should have a classification not lower than the relevant class given in Table 4.

Table 4: Surface Classification for Walls and Ceilings

Location [1]	Classification
Rooms not exceeding 30m^2	D-s3, d2
Other rooms	C-s3, d2
Circulation spaces	B-s3, d2

Note 1: For the purposes of Internal Fire Spread, a room is defined as an enclosed space within a building that is not solely used as a circulation space.

Where linings are provided in rooms, any part of the surface of a wall can be of one lower performance classification than that noted in Table 4, but no worse than Class D-s3, d2, if the total area does not exceed the lesser of either:

- half the floor area of the room; or
- 60m^2

The classifications noted above are not applicable to fitted furniture, doors and door frames, window and roof light frames, architraves, skirting, exposed beams, and similar narrow members.

5.2 Thermoplastic Materials

Any thermoplastic materials should be in accordance with Clauses 6.13 to 6.18 (inclusive) of ADB.

6. Internal Fire Spread – Structure

6.1 Structural Fire Resistance

6.1.1 Principal Aims

Loadbearing elements of structure are provided with fire resistance (FR) to prevent premature failure of the structure for three main reasons:

- to protect occupants of the building during the evacuation period;
- to ensure a reasonably safe environment for firefighters carrying out search and rescue operations; and
- to protect occupants in the surrounding areas of the building from falling debris or from potential collapse onto adjacent buildings.

Fire resistance recommendations in ADB are based on the height of the top floor, purpose group classification and the provision of sprinklers (life safety system).

6.1.2 Fire Resistance Period

ADB recommends that a fire resistance period should be provided to the following elements of structure:

- Structural frame, beams, or columns (exposed faces)
- Loadbearing walls (each side separately)
- Compartment walls/floors (each side separately/from the underside)
- External walls, where protection against external fire spread is required
- Floors (from the underside)
- Protected shafts, e.g. stair cores, lift shafts, service risers, etc. (each side separately)

ADB notes that structural elements that support only the roof of a building do not require fire resistance except where a roof also performs the function of a floor, i.e. forms part of an escape route from some other accommodation, or functions as a floor such as a car park, or the roof also supports other fire-resisting portions of structure (e.g. external walls that need fire resistance for external fire spread purposes). This does not mean that an infrequently accessed roof area for plant/maintenance purposes requires fire resistance if none of the other provisions apply.

Where one element of structure supports or gives stability to another element of structure, the FR of the supporting element or component should not be less than the minimum period of FR for the other element.

Elements of structure that are required to be fire-resisting should achieve at least 60mins FR in accordance with the criteria in Table B3 of ADB.

6.2 Compartmentation

6.2.1 Principal Aims of Compartmentation

The primary life safety reasons for compartmentation are twofold:

- to allow occupants to escape into separate compartments, thereby reducing the potential for occupants becoming trapped; and
- to reduce the chances of the fire becoming large on the basis that large fires are more dangerous to evacuees and firefighters.

6.2.2 Compartment Floor Area

ADB limits the compartment floor area in a shop and commercial building/compartment to 2000m^2.

The total internal floor area of the Lidl Store will be 1,825m^2. Therefore, no additional sub-dividing compartmentation would be necessary to satisfy the 2,000m^2 maximum compartment area restriction noted in ADB.

In addition, the total area of the back of house storage accommodation will be less than 1/3 of the overall building floor area. Therefore, the storage areas need not be fire separated from the Sales Area.

6.3 Protected Corridor

The protected 'back of house' corridor should be separated from adjacent accommodation by at least 30mins FR and FD30S self-closing fire doors.

6.4 Places of Special Fire Hazard

ADB recommends that areas defined as a place of special fire hazard, i.e. oil-filled transformer rooms, switch gear rooms, boiler rooms, storage space for fuel or other highly flammable substance(s) and rooms housing a fixed internal combustion engine, should be enclosed in at least 30mins FR and provided with FD30 fire doors.

Places of special fire hazard should be enclosed in at least 30mins FR.

7. External Fire Spread

7.1 External Surfaces of Walls

Based on the relevant boundaries being located at least 1m from each building elevation, ADB would not place restrictions on the external surfaces of the elevations.

7.2 External Wall Construction

ADB recommends that in a building with a storey 18m or more in height any insulation product, filler material (such as the core materials of metal composite panels, sandwich panels and window spandrel panels but not including gaskets, sealants and similar), etc., used in the construction of an external wall should be Class A2-s3, d2 or better.

Based on the building having a top storey height less than 18m above ground level, there would be no prescriptive guidance in support of the Building Regulations that would require any insulation product, filler materials, etc., used in the external wall construction to achieve Class A2-s3, d2 or better.

However, the selection of materials and the proposed construction of the external walls should be progressed in a manner that does not propagate rapid fire spread through the external walls to an extent that would jeopardise life safety and compliance with Regulation B4.

In accordance with Regulation 7(1A) relevant metal composite materials should not form part of an external wall, or specified attachment.

7.3 Unprotected Areas

A detailed external fire spread analysis, based on the recommendations of BR187, should be carried out and presented in the detailed Fire Strategy Report.

Where applied fire protection is required to the external walls for external fire spread purposes, it should achieve at least 60mins FR for integrity and 15mins FR for insulation, provided from inside only.

Unprotected areas which are outlined in Diagram 13.5 of ADB may be discounted.

8. Access and Facilities for the Fire Service

8.1 Fire Service Access

Based on a top storey height less than 11m above access level and a total internal floor area less than 2,000m^2, access for a pump appliance should be provided to at least 15% of the building's perimeter.

The building has a perimeter of approximately 199m. Therefore, access to at least 30m of the building perimeter should be provided for compliance with standard guidance.

8.2 Vehicle Access Routes

ADB recommends the following criteria for a pump appliance access route:

- Minimum width of road between kerbs - 3.7m
- Minimum width of gateways - 3.1m
- Minimum turning circle between kerbs - 16.8m
- Minimum turning circle between walls - 19.2m
- Minimum clearance height - 3.7m
- Minimum carrying capacity - 12.5t
- Maximum reversing distances of 20m for a pump appliance

Fire tender access routes should be in accordance with the above criteria.

8.3 Fire Hydrant Provisions

ADB recommends that where a building has a compartment of 280m^2 or more in area and is located more than 100m from an existing fire hydrant, additional hydrants should be provided to within 90m of the entrance to the building and a maximum of 90m apart.

Where an existing fire hydrant is located within the requisite distance, it should be ensured that it provides adequate flows and pressures for effective firefighting.

Where new fire hydrants are incorporated, they should be designed and installed in accordance with the relevant recommendations in BS9990.

9. Fire Safety Management

9.1 Statutory Obligations for Building Management

Although not expressly stated, good management is implicit in Part B of the Building Regulations 2010 and Approved Document B. Additionally, the RRO imposes a duty on the owner/occupier of premises to:

- maintain all means of escape from fire;
- secure the means of escape from fire;
- secure all firefighting equipment; and
- secure all means of giving warning of fire to the occupants.

Via the preparation of appropriate documentation, the fire safety management of the building will need to demonstrate that they can meet the obligations of the RRO. Matters relating to fire safety will form an integral part of such documentation.

9.2 Fire Safety Management Procedures

Detailed fire safety management procedures will need to be developed in consultation with the Statutory Authorities. A Fire Safety Management Plan for the building will need to be implemented and monitored by building management and should include the following key components:

- Fire Safety Management structure;
- actions to be taken in a fire emergency, including:
  - evacuation protocols reflecting the fire alarm system cause and effect schedule;
  - evacuation of occupants with physical, sensory and cognitive disabilities, an effective way of addressing this would be with individual Personal Emergency Evacuation Plans (PEEPs);
- housekeeping;
- maintenance of active and passive fire protection measures, e.g. fire alarm system, fire doors, compartmentation, etc;
- staff training;
- continuing control and audit procedures;
- security; and
- maintenance of Fire and Rescue Service access and facilities.

It should be noted that this section only serves as a brief introduction to the fire safety management procedures, which will need to be written into the Fire Safety Management Plan.

Further guidance can be found in BS9999.

10. Information, Limitations, and Assumptions

10.1 Drawings

The drawings detailed in Table 5 were used in the development of this report.

Table 5: Schedule of Drawings

Drawing Number	Drawing Title	Drawing Revision
4478-0105	Site Plan as Proposed Option C	P13
4478-0406	North Elevation as Proposed	P01
4478-0402	South Elevation as Proposed	P06
4478-0400	East Elevation as Proposed	P06
4478-0401	West Elevation as Proposed	P06
4478-0500	Site Section A-A	P02
4478-0404	West Elevation as Proposed Option B	P01

10.2 Building Regulations

This report considers life safety through the appropriate Building Regulations and London Plan Guidance.

This report does not specifically address property protection, business continuity or insurance issues.

This report should not be submitted as part of a Building Regulations application; it is intended to be submitted with a planning application.

It should not be assumed that following the guidance provided in this report confers approval in respect to any aspect of the design in advance of formal approval being received from the Statutory Authorities.

10.3 Other Limitations

Complying with the recommendations of this report will not guarantee that a fire will not occur.

Unless otherwise described in this report. The fire strategy assumes that the detailed design of the building construction and systems therein will comply with current Building Regulations and supporting guidance.

This Planning Fire Safety Strategy sets out the approach to be adopted in achieving satisfactory levels of fire safety within the building. The detailed design of the various fire safety installations, both active and passive, and the preparation of design drawings and specifications identifying such installations remain the responsibility of the respective design team members, e.g. services consultant and project Architect.

11. References

[1] Crown copyright, *The Building Regulations 2010, No. 2214, Building and Buildings, England and Wales*. The Stationery Office, 2010.

[2] Mayer of London, *The London Plan. The spatial development strategy for Greater London.* Greater London Authority, City Hall, The Queen's Walk, London, SE1 2AA, 2021.

[3] HM Government, *Approved Document B: Fire Safety – Volume 2: Buildings other than dwellings (2019 edition incorporating 2020 and 2022 amendments)*. RIBA Books (Crown Copyright 2020), 2022.

[4] British Standards Institution, *BS 7974:2019 Application of fire safety engineering principles to the design of buildings. Code of practice*. British Standards Institution, 2019.

[5] Crown copyright, *The Regulatory Reform (Fire Safety) Order 2005, No. 1541 - Regulatory Reform, England and Wales*. The Stationery Office, 2005.

[6] British Standards Institution, *BS EN 81-20:2020 Safety rules for the construction and installation of lifts. Lifts for the transport of persons and goods. Passenger and goods passenger lifts*. British Standards Institution, 2020.

[7] British Standards Institution, *BS EN 81-70:2021+A1:2022 Safety rules for the construction and installation of lifts. Particular applications for passenger and goods passenger lift - Accessibility to lifts for persons including persons with disability*. British Standards Institution, 2022.

[8] British Standards Institution, *BS 7273-4:2015+A1:2021 Code of practice for the operation of fire protection measures. Actuation of release mechanisms for doors*. British Standards Institution, 2021.

[9] British Standards Institution, *BS ISO 3864-1:2011 Graphical symbols. Safety colours and safety signs. Design principles for safety signs and safety markings*. British Standards Institution, 2011.

[10] British Standards Institution, *BS 5499-4:2013 Safety signs. Code of practice for escape route signing*. British Standards Institution, 2013.

[11] British Standards Institution, *BS 5839-1:2017 Fire detection and fire alarm systems for buildings. Code of practice for design, installation, commissioning and maintenance of systems in non-domestic premises*. British Standards Institution, 2017.

[12] British Standards Institution, *BS 5266-1:2011 Emergency lighting. Code of practice for the emergency escape lighting of premises (Replaced by BS 5266-1:2016)*. British Standards Institution, 2011.

[13] British Standards Institution, *BS 5839-9:2011 Fire detection and fire alarm systems for buildings. Code of practice for the design, installation, commissioning and maintenance of emergency voice communication systems (Replaced by BS 5839-9:2021)*. British Standards Institution, 2011.

[14] R. Chitty, *BR 187, 2nd edition: External fire spread: building separation and boundary distances*. BREPress, 2014.

[15] British Standards Institution, *BS 9990:2015 Non automatic fire-fighting systems in buildings. Code of practice*. British Standards Institution, 2015.

[16] British Standards Institution, *BS 9999:2017 Fire safety in the design, management and use of buildings. Code of practice*. British Standards Institution, 2017.

Where this Fire Strategy Report refers to a named standard, the relevant version of the standard is listed above. However, if the version has been replaced or updated by the issuing body, the new version may be used, provided it continues to address the relevant requirements of the Building Regulations.

We create safe spaces where people, businesses and communities thrive.