

BROAD LANE, TOTTENHAM

HARINGEY /// LONDON

New Office Building

Initial Planning Fire Safety Strategy
MARCH 2023

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1.1 Author of this document

This planning fire safety strategy has been prepared by Mark Smith for and on behalf of Mark Smith Architects Ltd. Mark Smith MA(Hons) M.Arch is a qualified Architect and has Chartered status with the RIBA. Mark has over 12 years experience working in London and the residential sector, including all phases of a construction from planning to completion. Mark Smith Architects Ltd has Chartered status with the RIBA.

1.2 Introduction

This document is an initial planning stage fire strategy for a new office building of between four and nine storeys.

1.3 Existing site

The existing site is a former car wash site, Broad Lane, N15).

1.4 Proposals

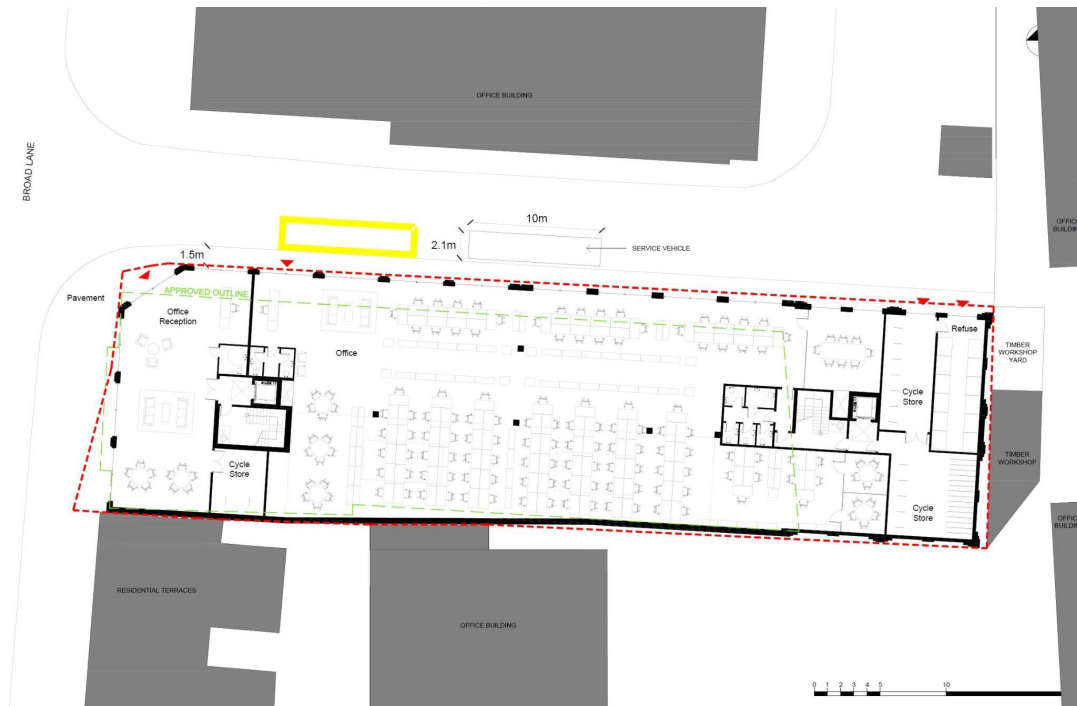
This proposal will expand on an existing approval and provide 5,694 sq.m. (61,290 sq.ft.) of new flexible Class E space. At the west of the site, facing Broad Lane, the proposed building is four storeys with a fifth set-back storey (15.5m height). Towards the middle of the site, it is six storeys (18.5m height) and at the east of the site, it is eight storeys (28m).

The new building is of high architectural quality with a variety of brick tones, green roofs and PV panels. The set back upper storeys are clad in high-quality metal. The proposal is energy efficient, well insulated, and also generates electricity through PV panels on the roof.

2.0 London Plan Policy D12 (A1-A6)

A1 a. Fire Appliance Position

A fire appliance can be located on Broad Lane immediately in front of the subject site as shown in the diagram below (yellow line).



A1 b. Evacuation Assembly Point

A fire evacuation assembly point can be located opposite the subject site as shown in the diagram below (green line).



A2. Active and passive fire safety measures

The purpose group of each compartment is 3 as per the figure below.

Title	Group	Purpose for which the building or compartment of a building is intended to be used
Office	3	Offices or premises used for any of the following and their control: • administration • clerical work (including writing, bookkeeping, sorting papers, filing, typing, duplicating, machine calculating, drawing and the editorial preparation of matter for publication, police and fire and rescue service work) • handling money (including banking and building society work) • communications (including postal, telegraph and radio communications) • radio, television, film, audio or video recording • performance (premises not open to the public).

The fire detection and alarm system will be no worse than Category M as per Annex A of BS 5839 -1, as below:

Annex A (informative) Choice of appropriate category of fire detection and fire alarm system

This annex describes the category of system that is typically installed in various types of premises, see Table A.1. The information in this annex is not intended to constitute recommendations, but simply provides information on custom and practice, and on the conventional interpretation of fire safety legislation. Decisions regarding the appropriate category of system for any specific building rest with the authorities responsible for enforcing legislation in the building; there can be more than one such enforcing authority.

Table A.1 — *Choice of appropriate category of a fire detection and fire alarm system*

Type of premises	Typical category of system	Comments
Common places of work, such as offices, shops, factories, warehouses and restaurants	M or P2/M A or P1/M	Category M system normally satisfies the requirements of legislation. It is, however, often combined with a Category P system to satisfy the requirements of insurers, as company policy for protection of assets, or to protect against business interruption.

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

Design and installation of systems

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

Further assessment by and coordination with a fire engineer/approved inspector/building control will be carried out to determine if a more advanced detection/alarm system is required.

A3. Construction methods and materials

Internal fire spread:

Table 6.1 Classification of linings	
Location	Classification
Small rooms of maximum internal floor area: a. 4m ² in residential accommodation b. 30m ² in non-residential accommodation	D-s3, d2
Other rooms (including garages)	C-s3, d2
Other circulation spaces	B-s3, d2 ⁽¹⁾
NOTE: 1. Wallcoverings which conform to BS EN 15102 , achieving at least class C-s3, d2 and bonded to a class A2-s3, d2 substrate, will also be acceptable.	

Rooflights: Special consideration is taken regarding the rooflights in the ceiling of the ground floor rear podium.

Rooflights

- 6.8** Rooflights should meet the following classifications, according to material. No guidance for European fire test performance is currently available, because there is no generally accepted test and classification procedure.
- Non-plastic rooflights should meet the relevant classification in Table 6.1.
 - Plastic rooflights, if the limitations in Table 6.2 and Table 14.2 are observed, should be a minimum class D-s3, d2 rating. Otherwise they should meet the relevant classification in Table 6.1.

Structural protection:

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

Compartmentation:

Provision of compartmentation

All purpose groups

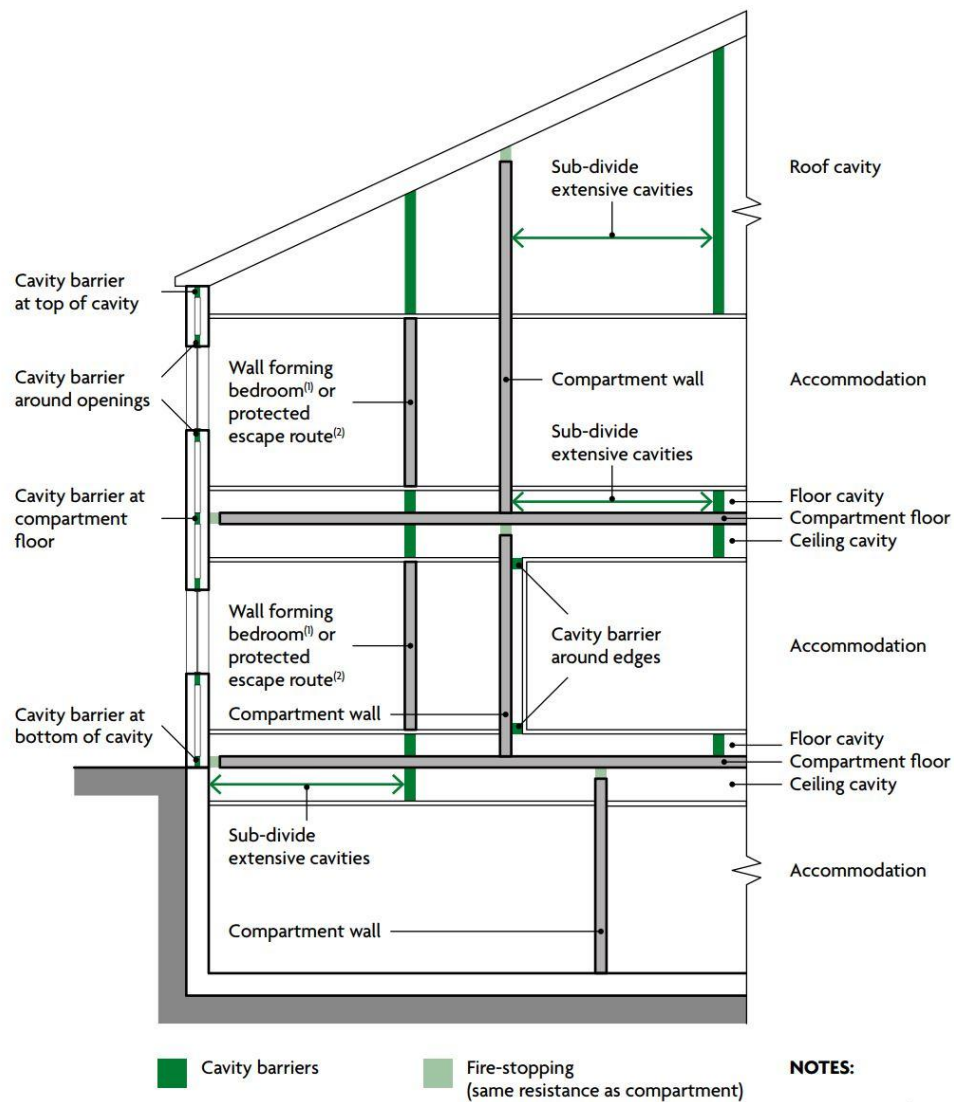
- 8.1 All of the following should be provided as **compartment walls** and **compartment floors** and should have, as a minimum, the **fire resistance** given in Appendix B, Table B3.
- 8.2 A wall common to two or more **buildings** should be a **compartment wall**.
- 8.3 Parts of a **building** occupied mainly for different purposes should be separated from one another by **compartment walls** and/or **compartment floors**. Compartmentation is not needed if one of the different purposes is ancillary to the other. See paragraphs 0.23 and 0.24.
- 8.4 Effective compartmentation relies on both of the following.
 - a. **Fire resistance** should be continuous at the join between elements forming a **compartment**.
 - b. Any openings between two **compartments** should not reduce the **fire resistance**.
- 8.5 The lowest floor in a **building** does not need to be a **compartment floor**.

Table B3 Specific provisions of the test for fire resistance of elements of structure, etc.

Part of building	Minimum provisions when tested to the relevant European standard (minutes) ⁽¹⁾	Alternative minimum provisions when tested to the relevant part of BS 476 ⁽²⁾ (minutes)			Type of exposure
		Loadbearing capacity ⁽³⁾	Integrity	Insulation	
1. Structural frame, beam or column.	R see Table B4	See Table B4	Not applicable	Not applicable	Exposed faces
2. Loadbearing wall (for a wall which is also described in any of the following items, the more onerous guidance should be applied).	R see Table B4	See Table B4	Not applicable	Not applicable	Each side separately
3. Floors ⁽⁴⁾					
a. between a shop and flat above	REI 60 or see Table B4 (whichever is greater)	60 min or see Table B4 (whichever is greater)	60 min or see Table B4 (whichever is greater)	60 min or see Table B4 (whichever is greater)	From underside ⁽⁵⁾
b. in upper storey of two storey dwellinghouse (but not over garage or basement)	R 30 and EI 15	30 min	15 min	15 min	From underside ⁽⁵⁾
c. any other floor – including compartment floors.	REI see Table B4	See Table B4	See Table B4	See Table B4	From underside ⁽⁵⁾

Cavity barriers:

See para 9.2



External fire spread:

The proposal has a storey above 18m therefore external surfaces should comply with the following

Table 12.1 Reaction to fire performance of external surface of walls

Building type	Building height	Less than 1000mm from the relevant boundary	1000mm or more from the relevant boundary
'Relevant buildings' as defined in regulation 7(4) (see paragraph 12.15)		Class A2-s1, d0 ⁽¹⁾ or better	Class A2-s1, d0 ⁽¹⁾ or better

A4. Means of escape and evacuation

The building has between four and nine storeys and is below 30m in height. For floor 00 to 05, there are two protected stairs. For floors 06 to 08, there is one protected stair.

As per the following figure, where there are two directions of escape, the maximum travel distance to the storey exit is 45m, and where there is one direction of escape, the maximum travel distance to a storey exit is 18m. Where there is any instance that the proposal does not meet this, then further fire risk assessment and mitigation measures will be required.

Table 2.1 Limitations on travel distance

Purpose group	Use of the premises or part of the premises	Maximum travel distance ⁽¹⁾ where travel is possible in:	
		One direction only (m)	More than one direction (m)
2(a)	Residential (institutional)	9	18
2(b)	Residential (other):		
	a. in bedrooms ⁽²⁾	9	18
	b. in bedroom corridors	9	35
	c. elsewhere	18	35
3	Office	18	45

As per the following figure, where there are two directions of escape, the maximum number of people is 600 per floor, and where there is one direction of escape, the maximum number of people is 60 per floor. Where there are any instance that the proposal does not meet this, then further fire risk assessment and mitigation measures will be required

Table 2.2 Minimum number of escape routes and exits from a room, tier or storey

Maximum number of people	Minimum number of escape routes/exits
60	1
600	2
More than 600	3

The width of the escapes and stairs are 1200mm, exceeding the requirement below.

Table 2.3 Widths of escape routes and exits

Maximum number of people	Minimum width (mm) ⁽¹⁾⁽²⁾⁽³⁾
60	750 ⁽⁴⁾
110	850
220	1050
More than 220	5 per person ⁽⁵⁾

NOTES:

1. See Appendix D for methods of measurement.
2. Widths may need to be increased to meet guidance in Approved Document M.
3. Widths less than 1050mm should not be interpolated.
4. May be reduced to 530mm for gangways between fixed storage racking, other than in public areas of 'shop and commercial' (purpose group 4) buildings.
5. 5mm/person does not apply to an opening serving fewer than 220 people.

Table 3.1 Minimum widths of escape stairs

Situation of stair	Maximum number of people served ⁽¹⁾	Minimum stair width (mm)
1a. In a 'residential (institutional)' building (unless the stair will only be used by staff)	150	1000 ⁽²⁾
1b. In an 'assembly and recreation' building and serving an area used for assembly purposes (unless the area is less than 100m ²)	220	1100
1c. In any other building and serving an area with an occupancy of more than 50	Over 220	See note 3
2. Any stair not described above	50	800 ⁽⁴⁾

NOTES:

1. Assessed as likely to use the stair in a fire emergency.
2. Section 6 of **BS 9999** recommends that firefighting stairs should be at least 1100mm wide.
3. See Table 3.2 for the size of stairs for simultaneous evacuation, and Table 3.3 for phased evacuation.
4. To comply with the guidance in Approved Document M on minimum widths for areas accessible to disabled people, this may need to be increased to 1000mm.

A refuge is located in each and every protected stair on every landing, as follows:

Provision of refuges

- 3.4 Refuges form part of the management plan and offer relatively safe areas for people to wait for a short period only. Refuges should meet the following conditions.
- a. Refuges should be provided on every storey (except ones consisting only of plant rooms) of each protected stairway providing an exit from that storey.
 - b. Refuges do not need to be located within the stair enclosure, but should enable direct access to the stair.
 - c. The number of refuge spaces does not need to equal the number of wheelchair users who may be in the building. A single refuge may be occupied by more than one person during the evacuation procedure.
- 3.5 The following are both examples of satisfactory refuges.
- a. An enclosure such as a compartment (Diagram 3.1), protected lobby, protected corridor or protected stairway (Diagram 3.2).
 - b. An area in the open air, such as a flat roof, balcony, podium or similar place, that meets both of the following.
 - i. It is protected (or remote) from any fire risk.
 - ii. It has its own means of escape.
- 3.6 Refuges should be a minimum of 900mm × 1400mm in size and accessible by someone in a wheelchair. Where sited in a protected stairway, protected lobby or protected corridor, they should not reduce the width of the escape route or obstruct the flow of people escaping.
- 3.7 Refuges should be provided with an emergency voice communication (EVC) system complying with BS 5839-9. It should consist of Type B outstations communicating with a master station in the building control room (if one exists) or next to the fire detection and alarm panel. In some buildings, wireless technology may be more appropriate.
- 3.8 Refuges and evacuation lifts should be clearly identified. In protected lobbies and protected stairways there should be a blue mandatory sign worded 'Refuge – keep clear' in addition to fire safety signs.
- 3.9 Paragraph 5.32 gives guidance on using lifts, including evacuation lifts, during a fire.

Protected stairs lead to final exit via protected areas with the same standard of fire resistance that the stair it serves. Where there are any instance that the proposal does not meet this, then further fire risk assessment and mitigation measures will be required

Exits from protected stairways

- 3.36 Every protected stairway should lead to a final exit, either directly or via an exit passageway. Any protected exit corridor or stair should have the same standard of fire resistance and lobby protection as the stair it serves. The exit from a protected stairway should comply with paragraphs 5.20 to 5.24.

A5. Evacuation review

The proposals will go through further detailed design including review(s), assessment and approval by an approved building control inspector (or local authority) as well as London Fire Brigade to ensure evacuation compliance. A competent building management service should conduct on-going fire assessments to evaluate evacuation risks, take appropriate actions, update and implement emergency plans and communicate evacuation strategy to occupants.

A6. Fire fighting access

Both protected stair have a dry fire main and is within 18m of the kerb for access from a pump appliance.

Buildings fitted with fire mains

- 15.4 For buildings fitted with dry fire mains, both of the following apply.
- Access should be provided for a pumping appliance to within 18m of each fire main inlet connection point. Inlets should be on the face of the building.
 - The fire main inlet connection point should be visible from the parking position of the appliance, and satisfy paragraph 16.10.
- 15.5 For buildings fitted with wet fire mains, access for a pumping appliance should comply with both of the following.
- Within 18m, and within sight of, an entrance giving access to the fire main.
 - Within sight of the inlet to replenish the suction tank for the fire main in an emergency.
- 15.6 Where fire mains are provided in buildings for which Sections 16 and 17 make no provision, vehicle access may be as described in paragraphs 15.4 and 15.5, rather than Table 15.1.

Design of access routes and hardstandings

- 15.7 Access routes and hardstandings should comply with the guidance in Table 15.2. Requirements can only apply to the site of the works.
- It may not be reasonable to upgrade the route across a site to a small building. The building control body, in consultation with the fire and rescue service, should consider options from doing no work to upgrading certain features, such as sharp bends.
- 15.8 Where access to an elevation is provided in accordance with Table 15.1, the following requirements should be met, depending on the building height.
- Buildings up to 11m, excluding small buildings (paragraph 15.1): pump appliance access should be provided adjacent to the building for the specified percentage of the total perimeter.
 - Buildings over 11m: access routes should comply with the guidance in Diagram 15.2.
- 15.9 Where access is provided for high reach appliances in accordance with Table 15.1, overhead obstructions (such as cables and branches) should be avoided in the zone shown in Diagram 15.2.
- 15.10 Dead-end access routes longer than 20m require turning facilities, as in Diagram 15.3. Turning facilities should comply with the guidance in Table 15.2.

Table 15.2 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

NOTES:

- Fire appliances are not standardised. The building control body may, in consultation with the local fire and rescue service, use other dimensions.
- The roadbase can be designed to 12.5 tonne capacity. Structures such as bridges should have the full 17-tonne capacity. The weight of high reach appliances is distributed over a number of axles, so infrequent use of a route designed to accommodate 12.5 tonnes should not cause damage.

3.0 Conclusion

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