Greater London Council
London Building Acts (amendment) Act 1939 Section 20

Code of Practice

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London Building Acts (Amendment) Act 1939— Section 20

CODE OF PRACTICE for buildings of Excess Height and/or Additional Cubical Extent requiring approval under Section 20 of the London Building Acts (Amendment) Act 1939.

Note: *This Code of Practice is applicable only to buildings erected, altered and/or extended within the inner London area, i.e., the former administrative County of London. It must not be taken as binding upon the Council but only as a general guide and nothing herein contained must be construed as in any way interfering with or derogating from the powers of the Council or the District Surveyor (with special reference to Section 26 of the London Building Acts (Amendment) Act 1939 in connection with 'public buildings' as defined under Section 4 of the said Act) or of any other authority*

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Publication 7168 **0316** X *Price 6s. (30np)*

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Foreword

Section 20 of the London Building Acts (Amendment) Act 1939 is primarily concerned with the danger arising from fire within certain classes of buildings which by reason of height, cubical extent and/or use necessitate special consideration. The types of buildings coming within these catagories are defined under Section 20 of the 1939 Act which, for the assistance of applicants, is reproduced in Part I – Item 1.01 of this Code of Practice.

As buildings vary so much in height, cubic capacity, layout, siting, use and construction, the Council will deal with each case on its merits. Basically the principles incorporated in this Code seek to contain an outbreak of fire, to prevent the rapid spread of fire throughout a building or to adjoining buildings, to ensure the safety of the structure against fire, to provide such fire-fighting facilities as would enable the fire brigade to tackle the seat of a fire with the utmost speed and, in conjunction with the Council's Code of Practice for Means of Escape in Case of Fire, to safeguard the occupants of buildings.

This Code of Practice has been prepared in order to assist applicants in detailing proposals for the Council's consideration under Section 20, and it contains general information as to the conditions which may be imposed by the Council when approving any such proposals. Applicants are therefore advised to consult the Council's officers at the earliest stages of design so that a clear indication of the conditions most likely to be imposed may be taken into account before detail drawings are prepared for submission to the Council for approval.

For the convenience of applicants the metric equivalents of the British (Imperial) Units are given in brackets throughout. Where the dimensions are those contained in the London Building Acts 1930-1939 or the London Building (Constructional) By-laws currently in force, they are the direct metric equivalents. In all other instances an opportunity has been taken to round off the metric dimensions which, unless critical to the context of any particular item, may be subject to some flexibility according to circumstances.

HUBERT BENNETT
Superintending Architect of Metropolitan Buildings

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Part I
Controlling Acts

The following extracts from the London Building Acts (Amendment) Act 1939, together with extracts from and references to the London Building Act 1930, are given for guidance. Applicants are advised to obtain copies of the Acts mentioned as no responsibility is accepted by the Council for any copying error herein.

1.01 London Building Acts (Amendment) Act 1939 Section 20

Limits of height and cubical extent

'1 Unless the Council otherwise consent:

a no building shall be erected with a storey or part of a storey at a greater height than:
i one hundred feet (30·480 m); or
ii eighty feet (24·384 m) if the area of the building exceeds ten thousand square feet (929·030 m²) (see sub-section (**3**) and item **1.02**);

b no building of the warehouse class and no building or part of a building used for purposes of trade or manufacture shall be of a cubical extent exceeding two hundred and fifty thousand cubic feet (7 079·210 m³) unless it is divided by division walls in such manner that no division of the building or part of the building as the case may be is of a cubical extent exceeding two hundred and fifty thousand cubic feet (7 079·210 m³) (see items **1.03** and **1.04**):

Provided that the Council shall not withhold consent under paragraph (a) of this sub-section if they are satisfied that having regard to the proposed use to which the building is to be put proper arrangements will be made and maintained for lessening so far as is reasonably practicable danger from fire in the building.'

Conditions

'2 In granting consent under this Section the Council may without prejudice to any other power to attach terms and conditions to the consent (see also item **1.07**) give the consent subject to conditions restricting the user of the building or part of the building or relating to the provision and maintenance of proper arrangements for lessening so far as is reasonably practicable danger from fire in the building or part of the building.'

Measurement of height

'3 The measurement of the height of any such storey or part of a storey as is mentioned in this Section shall be taken at the centre of that face of the building where the measurement is greatest from the level of the footway immediately in front of that face or where there is no such footway from the level of the ground before excavation to the level of the highest part of the interior of the storey.'

Exemption in certain cases

'4 The provisions of this Section shall not apply to any building which being at a greater distance than two miles (3·219 kilometres) from St. Paul's Cathedral is used solely for the manufacture of the machinery and boilers of steam vessels or for a retort house and which consists of one floor only and is constructed throughout of brick stone iron or other incombustible materials.'

'Area' definition

1.02 **'Area'** in relation to a building means the superfices of a horizontal section thereof made at the point of its greatest surface inclusive of the extemal walls and of such portions of the party walls as belong to the building.' (See London Building Act 1930, Section 5.)

'Warehouse class' definition

1.03 **'Building of the warehouse class'** means a warehouse manufactory brewery or distillery or any other building exceeding in cubical extent one hundred and fifty thousand cubic feet (4 247·530 m³) which is neither a public building nor a domestic building.' (See London Building Act 1930, Section 5.)

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'Cubical extent' definition

1.04 **Section 4 (part)** – 'Cubical extent' in relation to the measurement of a building means the space contained within the external surfaces of its walls and roof and the upper surface of the floor of its lowest storey but excluding any space within any enclosure on the roof of the building used exclusively for accommodating a water tank or lift gear or any like apparatus:

Provided that where a building on one or more of its sides is not enclosed by a wall or walls the building where unenclosed shall be deemed to be enclosed by walls with the external surface thereof in a vertical plane extending downwards from the outer edge of the roof.'

Construction of steel doors

1.05 **Section 21** – '(4) Unless the Council otherwise consent an opening shall not be made in any division wall separating divisions of a building of the warehouse class or used for purposes of trade or manufacture or in any party wall or in two external walls separating such buildings in any case in which such divisions or buildings (as the case may be) if taken together would extend to more than two hundred and fifty thousand cubic feet (7 079·210 m^3) except under the following conditions:

a the opening shall have the floor jambs and head formed of brick stone iron or other incombustible materials and be closed by two wrought iron or mild steel doors sliding doors or shutters each not less than one-fourth of an inch (6·35 mm) thick in the panel at a distance from each other of the full thickness of the wall fitted to grooved or rebated iron frames without woodwork of any kind and all such doors sliding doors and shutters shall be fitted with sufficient and proper bolts or other fastenings and be capable of being opened from either side and shall have on each face thereof styles and rails at least four inches (101·6 mm) wide and one-fourth of an inch (6·35 mm) thick and shall be constructed fitted and maintained in an efficient condition; and

b the opening shall not exceed in width seven feet (2·134 m) or in height eight feet (2·438 m) and the width of any such opening in any wall of a storey (or if there is more than one such opening in any such wall the widths of all such openings taken together) shall not exceed one-half of the length of the wall:

Provided that any such opening may be nine feet six inches (2·896 m) in height in a wall of which the thickness is not less than twenty-four inches (609·6 mm) or where the doors sliding doors or shutters closing the opening are placed at a distance of not less than twenty-four inches (609·6 mm) from each other.'

Division walls

1.06 **Section 22** – 'The provisions of the London Building Acts and of any By-laws made in pursuance of those Acts with respect to party walls shall apply to such division walls as are referred to in this Part of this Act.' (i.e., Part III of the Act.)

General powers to attach conditions

1.07 **Section 144** – The attention of applicants is invited to the provisions of this Section which states (inter alia) 'in any case where the Council have power in virtue of the London Building Acts or of any By-laws made in pursuance of those Acts to grant their consent to the doing or omission of any act or thing the Council may give their consent subject to such terms and conditions in relation to the subject matter of such consent as the Council think fit and any such terms and conditions may include conditions applying to any building or structure or land other than that in respect of which consent is given.' Any term or condition when accepted is binding on the owner and occupier of the building or structure or land to which the term or condition applies, and if at any time any such term or condition is not observed or fulfilled the owner or occupier in default is liable to a fine as provided by the Act.

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Part II
Applications

A letter of application should be submitted to the Superintending Architect, Middlesex House, 20 Vauxhall Bridge Road, S.W.1, and the following information should be given:

Particulars required **2.01**

1 Particulars of the occupation and names of the occupiers with details of the trades, processes or use of the various parts of the building and of any other buildings within the curtilage of the site. If the building, or parts thereof, is for speculative letting, this should be stated, together with all possible information as to the future use, and the Council will require approval to be obtained to each user as it becomes known.

2 The type of construction and materials to be used in the erection of the building.

3 The systems of heating and ventilation proposed, including the type of fuel for heating purposes, and whether the ventilating system will incorporate provision for recirculation of air.

4 Details of the voltage, capacity and type of transforming plant and switch gear.

Drawings required **2.02**

1 Applications should be accompanied by complete plans, sections and elevations (in duplicate) drawn to a scale of 8 feet to 1 inch (1:100) or in the case of very large buildings the drawings may be to a scale of 16 feet to 1 inch (1:200), provided they clearly indicate the proposals. The Council may require larger scale detail plans of certain parts to be submitted for approval.

2 The drawings should show by figured dimensions:

a the heights of the various parts of the building and the level of the footway (if any) immediately in front of the centre of each face. Where there is no footway, the level of the ground before excavation should be indicated;

b the superficial area of each floor in the building;

c in a building of the warehouse class or building or part of a building used for the purposes of trade or manufacture:
i the cubical extent of the building as a whole; and
ii the cubical extent of each floor and portion of the building so used.

3 A site plan (in duplicate) drawn to a suitable scale should be submitted showing the surrounding buildings and streets and all means of access to the site.

4 In cases where applications are also necessary under other Acts or Sections, the Council's officers should be consulted as to the number of sets of drawings required.

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Part III
Definitions

Note *The meanings of expressions used in the Acts are included in Part I, as follows:*

3.01 In this Code unless the context otherwise requires, the expressions quoted below have the meanings hereby respectively assigned to them.

1 **'Building By-laws'** means the London Building (Constructional) By-laws 1952-1966 or those in force at the date of the application.

2 **'Class A' door** means a Class A door under Table G of Schedule VI of the London Building (Constructional) Amending By-laws (No. 1) 1964.

3 **'Class B' door** means a Class B door under Table G of Schedule VI of the London Building (Constructional) Amending By-laws (No. 1) 1964.

4 **'Class C' door** means a Class C door under Table G of Schedule VI of the London Building (Constructional) Amending By-laws (No. 1) 1964 and for the purpose of this document includes a door the prototype of which has been approved by the Council.

5 **'Compartment'** means a portion of a building which is separated from adjoining portions by walls and floors of the required standard of fire-resistance and by properly enclosed lifts, staircases and shafts. (See items **5.03**, **5.07**, **5.09** and **5.13**.)

6 **'Fire-fighting lobby-approach staircase'** means a staircase approached on every floor of a building through a ventilated lobby in accordance with Appendix A of this Code.

7 **'Fire-resisting glazing'** means glazing to resist the action of fire for a period of not less than one half-hour under Table F of Schedule VI of the London Building (Constructional) Amending By-laws (No. 1) 1964 except that glazing need not be in frames fixed shut unless so required by the Council.

8 **'Fire-resisting shutter'** means a hinged or sliding cover to a window or small access opening the standard of construction of which is not less than that Specified for a Class A door in (2) above.

9 **'Standard of fire-resistance'** refers to the types of construction specified in the appropriate Table of Schedule VI of the London Building (Constructional) Amending By-laws (No. 1) 1964 to resist the action of fire for the period hereafter required.

10 **'Steel rolling shutter'** means a shutter constructed and fixed in accordance with the Regulations made by the Council under Section 145 of the London Building Acts (Amendment) Act 1939, in respect of the provisions of steel rolling shutters including the provision to each shutter of an automatic closing arrangement actuated by a fusible link and compliance with Items (a) to (e) and (g) to (j) thereof where applicable. Fusible links may be set to operate at a temperature not exceeding 165° Fahrenheit (74° Celsius).

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Note *in most cases it will be necessary for the doors and shutters referred to in the above items (4) and (10) to be self-closing and held open only by a fusible link.*

Part IV
Buildings of Excess Height and/or Additional Cubical Extent

Requirements applicable **to all buildings either of excess height or of** additional cubical **extent** under **Section 20 of the London Building** Acts **(Amendment) Act 1939.**

Notes
i. A building of excess height may also require the Council's approval to additional cubical extent if of the warehouse class or used for purposes of trade or manufacture, in which case Part V of this Code will also apply.
ii. See also Part VI for fire extinguishing appliances, etc.
iii. See Item **1.01 3** *for measurement of height.*

4.01 Access

1 The building should abut upon a street or streets or upon open spaces of sufficient width and extent to give satisfactory access and working space for fire brigade appliances.

2 Open spaces or access strips likely to be used for fire appliances should be constructed and paved so as safely to support the heaviest type of appliance. Details of the loading and distribution will be supplied when approval is granted.

For full details of these requirements see Information Sheet FP/GEN/20 obtainable from The Chief Officer, London Fire Brigade, Headquarters, Albert Embankment, London, S.E.1.

3 Entrances to sites and archways leading to internal courts should have *a* clear passageway of a minimum width of 10'–0" (3 **m**) and *a* minimum height of 12'–0" (3·600 m) for fire brigade appliances.

4 Gates or shutters to entrances to sites and buildings should be locked only by means of padlocks so arranged that they can be opened from both sides by firemen in an emergency.

4.02 Construction Generally

1 The building should be constructed in conformity with the provisions of the current Building By-laws as applicable to the class of building, except where a higher standard of construction is required by this Code.

2 Special consideration by the Council is also necessary should 'pre-stressed' concrete construction be proposed.

3 a Where, under the provisions of Part VI of the London Building (Constructional) Amending By-laws (No. 1) 1964, the external enclosures of the building may be Class II (A), (B) or (C), and it is proposed to enclose any part of the building with that class of enclosure, full details of the enclosures must be submitted to the Council and its approval obtained thereto, as the Council may require the provision of a more substantial form of enclosure having a prescribed standard of fire-resistance with limited openings therein. This would particularly apply to a high building, in view of the risk of the external spread of fire from storey to storey above the height which is accessible to external fire brigade equipment and to any adjoining buildings within 40 feet (12 m). In this connection a Class II (A) enclosure would only be permitted in exceptional circumstances; generally a Class II (B) standard of enclosure having back up walls would be required.

b A Class II (C) enclosure (i.e., with timber incorporated in its construction) to a high building intended for use only as flats and/or maisonettes would be

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acceptable having regard to the Building By-law requirement for horizontal projections at each floor level.

c A Class II (A) enclosure may be used as a cladding where it is additional to a Class I (A) or I (B) enclosure.

d Aluminium may be used in Class II enclosures and in window frames unless they are required to have a standard of fire-resistance to satisfy the requirements of this Code.

e All Class II enclosures should comply with the following requirements:–
i the enclosure should be tied into the main structure and its weight transmitted thereto at each floor level or at vertical intervals not exceeding 20 feet (6 m) apart whichever is the lesser distance;
ii any glass in the enclosure should be securely held in position by two methods of fixing, e.g. by metal clips and, in addition, by metal cover fillets;
iii the whole of the work and any additional work required by the District Surveyor should be carried out to his satisfaction.

4 Special consideration will be necessary in respect of any proposal to erect a building with storeys above a height of 100 feet (30·480 m) to be used for trade purposes. In no case should storeys above the height of 80 feet (24·384 m) be used for the bulk storage of combustible goods. (See item **5.03 5**)

5 To resist the spread of fire externally between storeys where trade use is permitted above a height of 100 feet (30·480 m) the windows to all storeys used for these purposes above the 80 feet (24·384 m) level should be glazed with fire-resisting glazing with any opening portions adequately protected or arranged to close automatically in the event of fire. Details of the arrangement for the automatic closing of portions of windows should be submitted for approval.
In cases of high fire risk external drenchers may be required to be provided to all openings in the external enclosures of the storeys above the 80 feet (24·384 m) level in addition to fire-resisting glazing.

4.03 Separation of trade and/or warehouse user etc. from office and residential portions of building, etc.

1 Separation of office from trade and/or warehouse user

a If any part of the building is to be used for office purposes (other than small ancillary offices) such part should be separated completely from the part used for trade and/or warehousing purposes by imperforate walls and floors having not less than a two-hour standard of fire-resistance except that staircases may be common to both parts if access thereto from the trade and/or warehousing parts is by way of a lobby with non-combustible enclosures having not less than a one-hour standard of fire-resistance with Class A self-closing doors therein; the lobby to be ventilated to the external air by 4 sq. feet (0·4 m²) of permanent ventilation to the satisfaction of the Council. (See also *Note ii* hereunder.)

b In cases where it is necessary to preserve the separation between compartments the doorway(s) to the staircase(s) would also need to be protected by steel rolling shutters in addition to Class A self-closing doors. (See item **5.13 4**)

c Where the office part of the building is served only by a single staircase (if permitted) such staircase should be imperforate from the trade and/or warehousing parts as described above.

2 Separation of residential from trade and/or warehouse user

a If any part of the building is to be used for residential purposes (other than caretaker's quarters) such part should be separated completely from the part(s) used for trade and/or warehousing by imperforate walls and floors having not less than a two-hour standard of fire-resistance. Where the residential part is served by two or more staircases one of the staircases should be imperforate and the remaining staircases may be common to both parts if the access thereto from the trade and/or warehousing part(s) is by way of a ventilated lobby as described in (**1**) above.

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b In cases where it is necessary to preserve the separation between compartments the doorway(s) to the staircase(s) would also need to be protected by steel rolling shutters in addition to Class A self-closing doors. (See item **5.13 4**)

c Where the residential part is permitted to be served only by a single staircase for the purpose of means of escape in case of fire such staircase should be imperforate from the trade and/or warehousing part(s).

3 Separation of residential from office user

a If any part of the building is to be used for residential purposes (other than caretaker's quarters) such part should be separated from the part used for offices by imperforate walls and floors having not less than a one-hour standard of fire-resistance except that staircases may be common to both parts if the access thereto from the office part is by way of a non-combustible lobby having a standard of fire-resistance of not less than one hour with Class A self-closing doors therein.

b Where the residential part is permitted to be served by a single staircase for the purpose of means of escape in case of fire such staircase should be imperforate from the office part.

Notes

i *A higher standard of separation may be required to separate special risks such as bulk storage, garages, etc., which may necessitate imperforate staircases through such risks from the other parts of the building. (For communication of staircases etc., with garages or car parks see Appendix B.)*

ii *Where the staircases referred to in (1), (2) and (3) above are required to be fire-fighting lobby-approach staircases the standard of ventilation etc., should be in accordance with the requirements of Appendix A.*

4.04 Protection of steelwork, etc.

1 Except where otherwise stated in this Code all constructional steel and/or reinforced concrete columns, hangers and beams should be protected or constructed in accordance with the current Building By-laws.

2 In the case of a garage or car park below ground level exceeding 5,000 square feet in extent (500 m²) the steel work and reinforced concrete columns and beams therein supporting floors and walls above, should be protected in accordance with Appendix B (Part II item **2.01**), and a similar or higher standard of protection may be required within any portion of the building used for the bulk storage of combustible materials or where the fire load is likely to be high.

3 In the case of office buildings and hotels exceeding 100 feet (30·480 m) in height the steel and/or reinforced concrete columns, hangers and beams would be required to be protected or constructed so as to be capable of resisting the action of fire for a period of not less than two hours except that the floor slabs need only be of a one-hour standard of fire-resistance.

4.05 Roofs

1 Generally

a No roof, including the roof of any other building in the same curtilage and ownership, should be used either temporarily or permanently for the storage or manipulation of goods or materials, garaging of cars or any other similar purposes unless the approval of the Council be first obtained. If it is desired to use a roof for any such purposes full details of the proposal should be given in the application.

b No combustible roof linings or roof insulation should be used without prior approval.

c Aluminium, metals or other metal alloys having a melting point below 1800°F (980°C) should not be used without prior approval of the Council.

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2 Flat roofs

a Flat roofs in the topmost storey of the building should be covered externally with roof coverings in accordance with the London Building (Constructional) Amending By-laws (No. 2) 1964 (or the current By-laws) and where over a storey used for trade and/or warehousing, roofs should be regarded as floors and be constructed of non-combustible material having a standard of fire-resistance of not less than one hour.

b To restrict the spread of fire to the upper parts of the building flat roofs at the lower level should be regarded as floors and be constructed of non-combustible materials having a standard of fire-resistance equal to that required for the part of the building over which they are situated (see item **5.07**). Roof coverings should be in accordance with the London Building (Constructional) Amending By-laws (No. 2) 1964 (or the current By-laws).
No openings should be provided within such roofs within a distance of 10 feet (3 m) measured horizontally and at right angles to any perforated wall of the storeys above the level of such roofs, unless other means to prevent the spread of fire to such storeys are approved by the Council. Any openings in such roofs beyond this distance and within a distance of 30 feet (9 m) of such perforations (measured as described above) should be fitted with fire-resisting glazing in metal (not aluminium) frames fixed shut.

3 Sloping roofs

a Sloping roofs in the topmost storey of the building should be covered externally with roof coverings in accordance with the London Building (Constructional) Amending By-laws (No. 2) 1964 (or the current By-laws) and where over a storey used for trade and/or warehousing the roof construction and the roof coverings should be of non-combustible materials.

b Where sloping roofs are provided at a lower level than the topmost storey the roof construction and the roof coverings should be of non-combustible materials. Where such roofs are within a distance of 30 feet (9 m) measured horizontally and at right angles to any perforations in the walls of the storeys above the level of such roofs the requirements set out in (**2 b**) above should be observed.
The necessary protection may be achieved by any means satisfactory to the Council and may include the provision of an approved type of ceiling under the roof members together with any necessary vertical protection to seal a void. In such cases any steelwork or other construction which supports the protected area of the roof but which is outside the sealed void should be protected or constructed to a similar standard of fire-resistance as for the protected area.

c In large buildings used for trade and/or warehousing the Council may require the provision of satisfactory means of roof venting and non-combustible and/or fire-resisting drop curtains at suitable intervals to restrict a spread of fire.

4 Protection to roofs and terraces

Where access to a roof or terrace is provided or where access is required for fire-fighting the outer edges thereto, including those adjoining any wells or the like should be protected by means of a parapet and/or railing not less than 3 feet 6 inches high (1·070 m) and adequate protection should be provided to roof lights.

4.06 Basements

1 Generally

a As a general rule, basements should be separated from the remainder of the building by floors constructed in accordance with the Building By-laws or as otherwise required herein and by enclosed lifts, staircases, etc., as described in item **4.08** (see also items **5.03** and **5.04** – buildings of additional cubical extent). Where a basement is to be used in conjunction with ground storey offices or shops, or in conjunction with any other similar uses, it may, subject to the Council's requirements for means of escape, be united thereto by open sub-

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sidiary staircases and lifts provided that any packing, storage or other similar spaces are separated from the main floor areas to the satisfaction of the Council.

b In all cases a sufficient number of enclosed staircases appropriately sited should be provided on the perimeter of a basement storey to give direct access to the basement from streets or open spaces for fire fighting purposes.

c Proposals involving the formation of deep basements will require special consideration as facilities for fire fighting, ventilation and smoke outlets present special problems. In such cases the Council's officers should be consulted in the first instance to ensure that satisfactory arrangements are achieved for securing adequate ventilation, the provision of fire-fighting lobby-approach staircases, fire lifts, fire appliances including falling mains and for the removal of smoke. (See also Appendix B – item **2.08**).

2 Display of plans, etc.

a In all cases of buildings constructed with basement storeys the Council will require a suitable plan(s) of such underground storey(s) to be permanently displayed in an approved position in the ground storey, such plan(s) to indicate thereon the location of essential controls so as to assist in the direction of fire fighting in the event of fire in the basement storey(s).

b Similar plans may be required at other floor levels where considered necessary to assist fire-fighting operations. (See item **4.07**)

3 Smoke outlets and shafts

a Provision should be made for smoke outlets from all storeys below ground level, in well distributed positions, along the street frontages or adjacent to external walls where easily accessible to the fire brigade. The outlets should be sited at high level in the area they serve; be as numerous and as large as possible; should aggregate not less than $2\frac{1}{2}$ per cent. of the floor area they serve, and be arranged that a through draught can be created. A higher standard may be required where the nature of the occupational use warrants it. Separate outlets should be provided from accommodation such as boiler rooms, and rooms containing oil-filled switchgear, etc. Strong rooms need not be so provided but office storage space should have smoke outlets.

b The smoke outlets may be covered by approved stallboard or approved type pavement lights which can be easily broken by firemen. The position of all outlets should be suitably indicated on the external face of the building.

c Where a smoke outlet shaft terminates in the open air in a position inaccessible to firemen it should be maintained unobstructed or covered only with a grille and/or louvres constructed of metal (not aluminium).

d Smoke outlet shafts, where extending into or through other storeys, should be enclosed by construction having the same standard of fire-resistance as that required for the storey served or through which it passes whichever is the greater and where shafts from different parts adjoin they should be similarly separated from each other.

e Details and plans showing the provision of smoke outlets from basements and smoke outlet shafts from any sub-basements beneath should be submitted and approval obtained thereto before any work is commenced and the Chief Officer of the London Fire Brigade should be consulted on the type of cover proposed.

4.07 Ventilation of upper storeys

1 Provision should be made for the ventilation of every storey above the ground level so that smoke and heat can be released in the event of fire by means of openable windows aggregating not less than $2\frac{1}{2}$ per cent. of the total floor area in each storey (excluding enclosed staircases, lifts and toilets), well distributed so as to provide good cross ventilation. A higher standard of ventilation (e.g., 5 per cent. of the floor area) may be required where bulk storage or a high fire risk warrants it. Any alternative means of providing the ventilation should be to the approval of the Council and no openable windows should be locked shut without an approval to the locking arrangements being first obtained.

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2 In buildings provided with mechanical ventilation, (e.g., air conditioning) it is normal practice for all the windows to be 'sealed' and for those windows which are required to open in accordance with (**1**) above to be kept locked shut; in these cases the locking arrangements etc. to the openable windows should be by means of a budget lock conforming with the following requirements;

a the budget lock should be surrounded by a prominently raised escutcheon plate which can be readily located by touch in smoke logging conditions and the plate should have preferably a tapered centre hole leading to the socket of the lock to aid the location of the key or fireman's axe, OR the budget lock should be incorporated in the centre of a raised knob or turn handle of standard design provided with a tapered locating hole leading to the socket of the lock for the fireman's axe;

b the socket of each budget lock should be 5/16 inch (7·94 mm) square and not less than 1 inch (25 mm) in depth.

3 All opening windows and the budget locks thereto should be clearly identifiable and the positions of such windows should be indicated –

a upon a floor plan which should be displayed and maintained in an approved position within a staircase or within the lobby of a fire-fighting lobby-approach staircase, or

b where the openable windows are uniformly sited (and this should always be the case wherever possible) by a permanent notice in the fire lift or other approved position.

The plan referred to in (**a**) or the notice referred to in (**b**) above should specify the method of identifying the openable windows and the type of release mechanism provided.

4 Full details should be submitted to the Council of any alternative means of providing the ventilation or of any other type of locking arrangement to windows and its approval obtained thereto before the work commences. No openable window should be locked shut without such approval being first obtained.

Note
i *The term 'budget lock' is intended to refer to a lock operated by a carriage type key inserted into a square socket.*
ii *Where approval is sought under this item, in case of difficulty contact should be made with the Fire Prevention Branch of the London Fire Brigade, Albert Embankment S.E.1. (Telephone: 01-735 3811 Extension 441').*
iii *In most cases approval will be necessary to a relaxation of By-law 11.03 of the London Building (Constructional) By-laws, 1952 in regard to the by-law requirement that windows shall open for ventilation, and the Council will require to be satisfied that the emergency means for opening the windows, or alternative means, will be available for the use of occupants in the event of a failure of the mechanical ventilation.*

4.08 Staircases, lifts and other shafts

1 Siting of staircases in buildings of excess height

a In buildings of excess height it is necessary to ensure that staircases are sited so that the occupants are not likely to be trapped by smoke in a part of the building remote from a staircase. It is desirable, therefore, that staircases in such buildings should be located at the extremities.

b Access to a staircase should be available from the ends of the building so that in a building, other than a residential building, the maximum travel distance, having regard to the lay-out of partitions, etc., from any part of the end of the building to its staircase entrance or to its lobby entrance does not exceed 60 feet (18·500 m) provided that the entrance to every such staircase or to its lobby should generally be sited at a distance not greater than 25 feet (8 m) from the end of the building.

c In the case of a residential building the entrance to a staircase or to its lobby should be sited not more than 40 feet (12 m) or the depth of one dwelling unit from the end of the building whichever is the lesser dimension.

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d The siting of the staircase referred to in (**b**) and (**c**) above would normally be applicable to regularly shaped square or rectangular buildings; irregular or circular shaped buildings would require special consideration but all cases will be dealt with on their respective merits.
Special care should be taken to ensure that staircases are remote from one another and are not sited side by side and that in the case of office, trade and warehouse buildings the routes to the staircases or to their lobbies from a 'dead end' of the building do not necessitate passing through any other room.

e In addition the staircases should be so sited that free and unobstructed access to them is maintained at all times and that the travel distance between them, having regard to the possible lay-out of partitions etc. does not exceed 200 feet (61 m) (see also item **5.13**).

2 Access above 80′–0″ (24·384 m) to assist fire fighting

The building should be provided with a sufficient number of fire-fighting lobby-approach staircases and fire lifts suitably sited to the satisfaction of the Council so as to afford quick means of access to all parts of the building. One fire-fighting lobby-approach staircase and its associated fire lift should be provided, unless the Council decide otherwise, to every 10,000 square feet (930 m²) of floor area or part thereof measured in any storey above the 80′–0″ level (24·384 m). (See also item **5.13 3** – fire lifts in buildings of additional cubical extent.)

3 Fire-fighting lobby-approach staircases and associated fire lifts

Fire-fighting lobby-approach staircases should be positioned to the satisfaction of the Council and be sited so that in the ground storey they are easily accessible to the fire brigade and from a street or open space available to fire brigade vehicles. All such staircases and associated fire lifts (where required) should otherwise conform in all respects with Appendix 'A' of this Code. (See also item **5.13 3** – fire lifts in buildings of additional cubical extent.)

4 Other staircases and lifts

a Other staircases generally should be positioned to the satisfaction of the Council and, where required, a sufficient number should abut upon streets or open spaces accessible to the fire brigade.

b Staircases and lifts (with the exception of permitted subsidiary staircases and lifts: see item **4.06 1**) should be separated from basement storeys by walls having not less than a two-hour standard of fire-resistance and from the ground and upper storeys by walls having not less than a one-hour standard of fire-resistance.

c All enclosing walls should be imperforate except for the necessary access doorways which should each be fitted with a Class 'A' door. In the basements the access doorways should be fitted with Class 'B' doors or, where considered necessary by the Council, with a Class 'A' door and a steel rolling shutter or other equivalent protection. Class 'A' and 'B' doors to staircases should be self-closing and those to lifts should be fitted with an automatic locking device. Service lifts and goods lifts should not be included in banks of other lifts.
In the case of a lift shaft connecting with a kitchen or similar fire hazard, (e.g. storage area) in a hotel, hostel or other similar occupancy involving a sleeping risk, the opening to the shaft should be protected from the risk area by a Class 'A' self-closing door and, in addition, by a steel rolling shutter actuated by a smoke detector device. The mechanical gearing of the shutter should be arranged to ensure that the shutter will descend slowly in such a manner as would not cause injury to any person passing through the opening to the shaft particularly in the event of accidental operation.
Details of these arrangements should be submitted and approval obtained thereto before the installation is commenced and the smoke detector devices should be tested subsequently for satisfactory operation at periods not exceeding three months.

d The staircase flights, landings, supports and balustrades should be constructed wholly of non-combustible materials and no combustible linings should be provided within the staircase without the prior consent of the Council. (See also item **1.02** of Appendix A.)

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e In single staircase buildings or wherever required by the Council a non-combustible spandril infill should be provided beneath the lowest landing and flight of a staircase to prevent the space being used for the unauthorised storage of goods, materials, waste paper, etc.

f Except where the lift motor is installed at its base, a lift within a staircase enclosure need be separated therefrom only with protective metal grilles and gates extending between floors or landings as the case may be.

Note
All staircases to buildings exceeding 100 feet (30·480 m) in height should be approached either through a fire-resisting lobby and two Class 'A' self-closing doors or from fire-resisting corridors with Class A' self-closing doors therein for compliance with the Council's Code of Practice for Means of Escape in Case of Fire.

5 Ventilation to staircases and lifts other than fire-fighting lobby-approach staircases and fire lifts.

Enclosed staircases and lift shafts should be ventilated and glazed as follows:

a Staircases
i A permanent vent at the top of each staircase shaft at least equal to 5 per cent. of the internal area of the staircase within its enclosing walls, together with

ii windows at each storey level above the ground floor storey capable of being opened, in each storey, to an extent at least equal to 15 per cent. of such internal area.

Notes
i *The normal entrance doors at ground level will provide sufficient inlet ventilation at that point.*
ii *In exceptional circumstances, consideration will be given to the windows referred to in (**a ii**) foregoing being fitted with budget locks of the carriage key type so positioned that there is no obstruction to prevent a fireman's axe being inserted into the socket and turned to release the locking mechanism. The socket should be 5/16 inch (7·94 mm) square; be not less than one inch (25 mm) in depth and be positioned at a height easily accessible to fire brigade personnel.*
iii *Where a staircase is planned away from an external wall in an office or residential building only the windows referred to in (**a ii**) foregoing should be into an open well or into a vertical shaft in accordance with the provisions of Part II of Appendix A. Consideration would be given, in special cases, to similar arrangements being applied to a subsidiary staircase in a trade or warehousing building provided that its siting and protection is satisfactory to the Council.*

b Lifts entered only from protected positions
Where a lift is entered from:
i an open balcony, or
ii a properly enclosed and ventilated staircase, or
iii in the case of a residential or office building where the lift is properly enclosed and entered only from a ventilated space which is separated from the floor areas by solid fire-resisting partitions and Class 'A' self-closing doors, a permanent vent should be provided at the top of each lift shaft not less than one square foot in area (0·1 m²).

c Lifts not in *a* protected position (i.e. not as in (**b**) above)
i A permanent vent should be provided at the top of each lift shaft not less than 1 square foot in area (0·1 m²) and in addition openings at the top of each lift shaft glazed only with 24 oz. (3 mm) glass which, together with the permanent vent, should aggregate not less than 25 per cent. of the internal area of the lift shaft. This glazing should be protected internally with a stout wire guard to prevent broken glass falling down the lift shaft.
ii In the case of a lift shaft connecting with a kitchen or similar fire hazard (e.g. storage) in a hotel, hostel or other similar occupancy involving a sleeping risk, permanent ventilation should be provided at the top of the shaft to an extent not less than 25 per cent. of the internal area of the shaft and be so arranged to discharge to the open air directly above the shaft.
The opening may be glazed or covered by other suitable material provided that

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it is arranged to open automatically upon the operation of a smoke detector device.
Details of these arrangements should be submitted and approval obtained thereto before any installation is commenced and any smoke detector devices should be tested subsequently at periods not exceeding three months.

iii If it is not practical to provide the necessary ventilation in accordance with *(ii)* above, any horizontal ducts to achieve the same standard should be so arranged as to discharge direct to the open air on two opposing faces of the building and the ducts should be protected to the same standard of fire-resistance as that required for the shaft.

d Lift motor rooms

Where the lift machinery is provided at the top of a shaft, a floor of non-combustible construction should be provided to separate the shaft from the machinery room with the minimum amount of opening therein necessary for the passage of ropes and wires, etc., and the required ventilation and glazing as referred to in (b) and (**c**) foregoing should be provided in the walls of the lift shaft immediately below the floor of the machinery room.

e In cases where the foregoing requirements (**a**), (b), (**c**) and (**d**) for ventilation and glazing cannot reasonably be complied with, an alternative method of providing ventilation for smoke release from the staircase and/or lift shafts should be submitted for the Council's consideration.

6 Hand operation of lifts

All lifts (other than service lifts not capable of carrying passengers) should be provided with means, to the satisfaction of the Council, for their movement by hand in an emergency both upward and downward and the direction of movement when operated by hand should be clearly marked.
Special consideration will be required in the case of hydraulic lifts to provide for similar movement and the Council's officers should be consulted in this respect.

7 Shafts perforating floors for ventilation, services and similar purposes

a Shafts perforating floors for ventilation, services and similar purposes should be enclosed with walls or non-combustible partitions having not less than a one-hour standard of fire-resistance and any openings therein, except any necessary openings for ventilation grilles or trunks, should be fitted with Class 'A' doors kept locked shut where the space around the ducts, pipes, etc. within such shafts is sealed at each floor level with solid non-combustible and fire-resisting material to the full thickness of the floor.
Where such sealing may be impractical, Class 'B' doors should be provided to the openings to the shafts and such shafts should be permanently ventilated at the top direct to the external air above the level of the roof to an extent of 72 square inches (0·046 m^2) or 1/50th of the cross-sectional area of the shaft whichever is the greater.

b No insulation material should be provided to pipes, vent trunks, etc. without the prior approval of the Council unless such material is wholly non-combustible. In connection with ventilation systems the Council will need to be satisfied that the risk of spread of fire between storeys has been reduced to a minimum and this will normally mean the provision of fusible link steel dampers where openings are formed from the various storeys into vertical shafts.

Note

i *Attention is directed to By-law 11.07 (2) of the London Building (Constructional) Amending By-laws (No. 1) 1964 relating to the construction of 16 s.w.g. (1·63 mm) dampers. (See also* **5.10 6** *regarding dampers in buildings of additional cubical extent.)*

ii *The Building Regulation Information Sheet relating to ventilation systems in residential buildings, obtainable from the Superintending Architect, Middlesex House, 20 Vauxhall Bridge Road, S.W.1.*

4.09 Where terraces may be accepted as an alternative to fire-fighting lobby-approach staircases

In an office or residential building with not more than two storeys above the height of 80 feet (24·384 m) the Council may, in special or difficult cases (e.g.

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in alterations to existing buildings), be prepared to accept terraces at each floor level to those storeys any part of which is above the 80 feet (24·384 m) level as an alternative to fire-fighting lobby-approach staircases provided the terraces have direct access to a staircase or staircases, and are suitably protected with railings or parapets at least 3 feet 6 inches high (1·070 m) and are not less than 4 feet wide (1·200 m).
Ends of terraces remote from staircases should be provided with access to the main roof by ladders affixed to the outer face of the building and in such cases internal access must also be provided to the main roof from a sufficient number of internal staircases.
The terraces should be provided on all street frontages and on other elevations where considered necessary by the Council.

4.10 Garages and car parks

Garages and car parks whether underground, above-ground or open-sided should conform in all respects with the requirements set out in Appendix B.

4.11 Loading docks

1 Sited at or about ground level

a Loading docks at or about ground level approached directly from and open to the external air on at least one side should be separated from the remainder of the building by solid non-combustible walls and floors possessing not less than a two-hour standard of fire-resistance. Openings between a loading dock and the remainder of the building should be fitted with a single steel rolling shutter on a fusible link set to fuse at a temperature not exceeding 165°F (74°C).

b Loading docks used additionally for the garaging of vehicles
i Loading docks at or about ground level intended also to be used for the garaging of vehicles should be separated from the remainder of the building by solid non-combustible walls and floors possessing not less than a two-hour standard of fire-resistance.
ii Access to the remainder of the building from the loading dock should be by means of a ventilated lobby constructed to not less than a two-hour standard of fire-resistance provided with inner and outer Class 'A' self-closing doors and a single steel rolling shutter on the loading dock side on a fusible link as described in (**a**) above. The lobby should be provided with permanent ventilation to the external air to an extent not less than four square feet in area (0·4 m²).

c Loading docks used additionally for the garaging of vehicles and not exceeding 5,000 square feet in area (500 m²)
Loading docks at or about ground level intended also to be used for the garaging of vehicles and not exceeding 5,000 square feet in area (500 m²), should be separated from the remainder of the building with any openings therein protected all as described in (a) foregoing and in addition by a Class 'A' self-closing door.

2 Sited below ground level

a Where loading docks are sited below ground level the use of the remainder of the building must be to the satisfaction of the Council and the portion of the building united with the loading dock must be provided with adequate means of escape in case of fire independent of the communication with the loading dock.

b Loading docks within basements and/or garages
i Where a loading dock is permitted to be within a garage or within a basement used for loading and unloading of goods it should be separated from any other part of the building and from any adjoining building by solid brick or reinforced concrete walls and reinforced concrete floors having not less than a four-hour standard of fire-resistance. All supporting members thereto, together with the supporting members to the building above should be constructed or protected to a similar standard of fire-resistance.
ii Access from the loading dock to the remainder of the building should be by means of a ventilated lobby constructed to not less than a four-hour standard

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of fire-resistance. The doorways between the loading dock and the lobby and between the lobby and the remainder of the building should each be fitted with a Class 'A' self-closing door and, in addition, with a steel rolling shutter fitted on each side of the ventilated lobby next the respective floor areas. The steel rolling shutters should each be fitted with a fusible link set to fuse at a temperature not exceeding 165°F (74°C) and be provided with mechanical gearing.

iii The floor of the lobby should be constructed of solid non-combustible material.

iv The lobby should be provided with natural ventilation to the external air not less than four square feet (0·4 m²) in free area. Any shaft or duct in connection therewith should be separated from the remainder of the building by construction of not less than a four-hour standard of fire-resistance and should be sited so as to prevent the spread of fire, by way of adjacent openings in the external walls, to other parts of the building or to adjoining buildings.

Note

Consideration may be given to the omission of the ventilated lobby where loading/unloading facilities are provided to the basements of contiguous 'lock-up' type shop premises or other similar development. Where this is permitted the following standards would need to be observed:

i *the vehicular area should be otherwise generally in accordance with the standards applicable to underground garages (see Appendix B—Part II of this Code);*

ii *the vehicular area and the basement portion of the shop premises should be provided with an automatic sprinkler installation;*

iii *the basement of each of the shop premises should be separated from the vehicular area by non-combustible construction having not less than a four-hour standard of fire-resistance with any openings therein protected by a single steel rolling shutter on a fusible link as described in (**1 a**) above and, in addition with a Class 'B' self-closing door;*

iv *the basement of each of the shop premises should be separated from the remainder of the shop premises over by non-combustible construction having not less than a two-hour standard of fire-resistance with all stairs, lifts and shafts in the basement enclosed to a similar standard of construction with any access openings therein protected by Class 'B' self-closing doors;*

v *the provision of not less than ten square feet (0·9 m²) of permanent ventilation from the basement of each shop (or other suitable alternative acceptable to the Council);*

vi *the basement portion of each of the shop premises to be used generally for storage purposes only, with no retail trade or access for the public thereto.*

3 Generally

a Loading docks or loading areas should be provided with fire extinguishing appliances and installations in accordance with Part VI of this Code; this would normally include an automatic sprinkler installation or such other extinguishing equipment satisfactory to the Council.

b All steel rolling shutters and any Class 'A' or Class 'B' doors fitted to openings should be kept in the closed position when loading and unloading is not taking place and a permanent notice in 2 inch (50 mm) plain letters to this effect should be provided on each side of the opening.

c Loading docks below ground level whether used for the garaging of vehicles or not should conform with the general requirements for garages as regards mechanical ventilation, smoke outlets, sprinklers, etc., in accordance with Parts I and II of Appendix B to this Code.

4.12 Keeping of petroleum spirit for fuelling motor vehicles

1 The keeping of petroleum spirit is subject to the provisions of the Petroleum (Consolidation) Act 1928, and the regulations made thereunder, and any requirements made under the Act or regulations must be complied with.

2 No petroleum spirit, except that contained in the fuel tanks of motor vehicles, should be kept within the building.

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3 If petroleum spirit is kept in bulk the storage and fuelling areas (including the tank wagon stand) should be sited in well-ventilated positions in the open air separated from the building by solid walls with any openings therein protected to a standard required by the Council. The standard required will vary according to the user of the building and early consultation with the Council's officers is advisable. Drenchers may be required to certain openings.

4.13 Boiler chambers and oil fuel storage chambers

1 Oil fuel boiler chambers

a Where provided externally as a detached building, the boiler chamber should be constructed with Class I enclosures in conformity with Part VI of the London Building (Constructional) Amending By-laws (No. 1) 1964. If the chamber is within 20 feet (6 m) of the main building all openings in its external walls and roofs except ventilation openings should be fitted with Class 'A' self-closing doors or fire-resisting glazing in frames fixed shut, and all vent openings should be positioned so as to present the least risk to the main building.

b Where external, but adjoining the main building, the boiler chamber should be enclosed externally by walls constructed as in (**a**) above and the roof should be of reinforced concrete not less than 4 inches thick (100 mm). All external openings to the chamber should be protected and/or positioned as described in (**a**) above. The wall separating the chamber from the main building should be of a four-hour standard of fire-resistance with any opening therein fitted with a single Class 'C' self-closing door. Where in a multiple staircase building access from the remainder of the building to the boiler room is permitted from a staircase or from a part of the building used by the public, such access would need to be provided through a ventilated lobby having a two-hour standard of fire-resistance with the access openings to the lobby each fitted with a Class 'B' self-closing door. The amount of natural ventilation direct to the outer air should be not less than 10 square feet (0·9 m²).

c Where provided within the building, the boiler chamber should be situated against an outer wall and the walls and floors separating it from the remainder of the building should have not less than a four-hour standard of fire-resistance with any openings therein protected and/or positioned as described in (**b**) above.

Note
Upon the submission of full details the Council would be prepared to give special consideration to the location of a boiler chamber on the roof or within the topmost storey of a building. Each case would be treated on its merits having regard to the risk involved, its proximity to other buildings or parts of the same building and its separation from the remainder of the building (normally four-hour standard of fire-resistance). Applicants should seek early consultation with the Council's officers in such cases.

d Where, in accordance with paragraphs (**b**) and (**c**), openings are permitted in the wall separating the boiler chamber from the remainder of the building, each opening should be provided with a non-combustible threshold not less than 3 inches (75 mm) above the general level of the boiler chamber floor unless other approved means are taken to prevent the spread of oil in the event of a leakage.

e Except as provided foregoing the walls and floors forming the enclosures to the boiler chamber should be without openings and the floor of the boiler chamber should be constructed of impervious non-combustible materials.

f Apart from the boiler plant and such other apparatus as is necessary for its operation no other equipment should be installed in the boiler chamber.

2 Oil fuel storage

a Where possible, oil storage tanks should be installed in the open air at ground level at least 20 feet (6 m) from adjacent buildings and should be constructed, protected against corrosion and be in all respects in accordance with the relevant provisions of the current edition of B.S.S. 799—'Oil-burning Equipment'.

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Such storage tanks should be provided with oil-tight catchpits beneath them of adequate structural strength and, in order to prevent the spread of oil into and possible pollution of any drainage system, should have a capacity of at least 10 per cent. greater than that of the tank(s) and the bottom of the catchpits should be laid to fall to an impervious undrained sump all in accordance with the relevant provisions of the current edition of C.P. 3002 – 'Oil Firing'.

b Where the oil storage is less than 20 feet (6 m) from adjacent buildings, the following should be complied with:–

i the tanks should be contained within a chamber with walls constructed with Class I enclosures in conformity with the London Building (Constructional) Amending By-laws (No. 1) 1964, and with a roof of reinforced concrete not less than 4 inches thick (100 mm); the walls and roof should be imperforate except for the necessary access doors and vent openings positioned so as to present the least risk to adjacent buildings; and

ii the access doorways should each be fitted with a Class 'C' self-closing steel door.

As an alternative, in suitable cases the oil storage tanks may be permitted in the open provided they are effectively screened from adjacent buildings.

c Where the oil storage chamber adjoins a building, the above paragraphs (**b**) (***i***) and (***ii***) should be complied with and, in addition, the chamber should be separated from the building including the boiler chamber by a wall having not less than a four-hour standard of fire-resistance with any opening in such wall fitted with double Class 'C' doors or with a single Class 'C' door of a type incorporating an insulating material to limit the transmission of heat.

Where double Class 'C' doors are provided the inner door next the storage chamber should be fastened shut and the outer door should be kept locked shut. Where a single Class 'C' door is provided it should be kept locked shut.

d Where the oil storage is within a building, it should be at or near ground level; be as near as possible to an external wall, and be totally enclosed with walls and floors having not less than a four-hour standard of fire-resistance with openings therein protected in accordance with paragraph (**c**) above. Any access door direct from the outer air should be fitted with a single Class 'C' door.

Note

Where a boiler chamber is permitted to be located on the roof or within the topmost storey of a building (see Note following Item **I** *(**c**) above) the main oil storage tank should be sited in accordance with and should conform with (**a**), (**b**), (**c**) or (**d**) above. In such cases a service tank not exceeding 200 gallons (910 litre) in capacity may be sited adjacent to the boiler chamber provided it is separated therefrom and totally enclosed with non-combustible construction having a standard of fire-resistance of not less than four hours. In addition the supply pipe between the main storage chamber and the service tank should be within its own non-combustible duct having a similar period of fire-resistance.* ***Applicants should seek early consultation with the Council's officers in such cases.***

e In all cases the sill level of access doorways should be raised above the floor level so as to form a catchpit within the chamber having a capacity not less than 10 per cent. greater than the total capacity of the tank(s) therein. The walls and floor of the oil fuel storage chamber should be constructed of impervious non-combustible materials and ventilation and pipe ducts, etc., should be arranged so as to maintain the catchpit formation and the fire-resisting standard of the enclosures.

f Adequate permanent installed lighting fittings of totally enclosed pattern should be provided in the storage tank chamber and only transfer pumps and such other electrical equipment as must necessarily be installed in close proximity to the storage tanks should be within the storage chamber and all such apparatus should be of the totally enclosed type.

The controls for any electrical equipment or lighting circuit within the storage tank chamber should be installed outside the tank chamber and any electrical immersion heater fitted in the oil tanks should be thermostatically controlled and should be so arranged as to remain submerged at all times.

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The foregoing requirements should all be in accordance with the relevant provisions of the current editions of C.P.3002 'Oil Firing' and B.S.S. 799 'Oil-burning Equipment'.

3 Boiler chambers other than oil fuel

These should be separated from the remainder of the building by walls and floors having a standard of fire-resistance not less than that required for the part of the building in which they are situated and any internal opening thereto should be provided with a self-closing door of not less standard than Class 'B'.

4 Ventilation to boiler chambers and oil fuel storage chambers

a Every boiler chamber should be provided with ventilation adequate to ensure a supply of air sufficient for both combustion and general ventilation. Where the boiler chamber is ventilated by natural means and forced or induced draught is not provided, the air necessary for combustion should be afforded by permanent openings, at low level to the outside air, a total free area of not less than 2 square feet (0·2 m^2) being provided for each 1,000,000 B.T.Us/hour (300 kw) of installed boiler capacity; in addition permanent openings to the outer air having a total free area of not less than 1 square foot (0·1 m^2) per 1,000,000 B.T.Us/hour (300 kw) of installed boiler capacity should be provided at high level to effect general ventilation and to remove smoke and fumes. If a mechanical system of ventilation is necessary it should be independent of any system serving other parts of the premises.

b Oil fuel storage chambers should be ventilated direct to the outer air but only to the extent necessary to avoid stagnation of the air therein.

c Any shafts necessary for ventilating boiler chambers and oil fuel storage chambers should be enclosed and separated from the remainder of the building by non-combustible materials having the same standard of fire-resistance as the enclosures to the chamber or as required for the remainder of the building whichever is the greater.

5 Access

All large boiler chambers and ancillary chambers should be provided with two clear and unobstructed means of entry where internal arrangements render it necessary to secure easy access to and means of escape in case of fire from all parts of the chamber.

6 Smoke outlets

Every boiler chamber below ground level should be provided with adequate pavement or stallboard lights to serve as smoke outlets in addition to the natural vents referred to in (**4 a**) above.

7 Generally

a Details of all oil fuel installations and ventilation arrangements to all boiler rooms will be required to be submitted to the Council for approval and no oil fuel or oil in bulk should be used or stored upon premises until approval of the Council has been obtained thereto.

b A fixed automatic fire extinguishing installation or foam inlets may be required in some circumstances, e.g. where difficulty of access for fire fighting arises, and a fixed automatic fire extinguishing installation will be required to be provided in all cases where the full requirements for oil fuel boiler chambers and oil fuel storage chambers in (**1**) and (**2**) foregoing cannot be met. (See Part VI of the Code.)

4.14 Oil-burning air heaters

Oil-burning air heaters installed in the area to be heated will, in most instances, be required to be enclosed with fire-resisting walls and floors. The form and standard of fire-resisting enclosures to such units will depend upon the size, design and construction of each heater and its position in relation to any surrounding risks and routes of escape. Full details of any oil-burning air heaters and of the oil storage installation in connection therewith should be

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4.14 cont.

submitted to the Council and its approval obtained thereto before the work of installation is commenced.

Note
Additional information regarding the installation of oil-burning air heaters is contained in Information Sheet 'Oil-burning Air Heaters' obtainable from Building Regulation Division, Middlesex House, 20 Vauxhall Bridge Road, London, S.W.1.

4.15 Celluloid and film, etc., store-rooms

Full particulars regarding the storage of celluloid and celluloid film, etc. are contained in Information Sheet 'Celluloid and Celluloid Film – Store Rooms' obtainable from Building Regulation Division, Middlesex House, 20 Vauxhall Bridge Road, S.W.1.

4.16 Cellulose and other flammable liquid spraying rooms

1 Situation

A room used for spraying cellulose or other flammable liquids should, wherever possible, be situated in the topmost storey. Where such a position is not possible, the room should abut upon an external wall.

2 Enclosures

All spraying rooms should be enclosed with walls or partitions constructed of solid non-combustible materials not less than 3 inches thick (75 mm) carried up from the floor to the underside of the floor or roof over.

3 External openings

Door and window openings in external walls may, in certain cases, be required to be fitted with Class 'A' self-closing doors and fire-resisting glazing in frames fixed shut.

4 Doorways

All spraying rooms should be provided with at least two doorways in approved positions with the doors thereto hung to open in the direction of escape and provided with a sight panel of clear fire-resisting glazing.
All doorways to a spraying room should be fitted with Class 'A' self-closing doors and, where large doors not readily made self-closing are provided, they should be kept closed whilst spraying is in progress and be permanently marked to that effect in 2 inch (50 mm) block letters.

5 Ceilings

Any combustible material in the ceiling of a spraying room in the topmost storey should be protected with approved sheets of non-combustible material to the satisfaction of the Council and, if the spraying room is not in the topmost storey, the ceiling of the room (if not formed of a floor of the required standard of fire-resistance) should have a standard of fire-resistance not less than one hour or be covered on the underside with expanded metal encased in not less than 1 inch (25 mm) of sand and cement mortar.

6 Floors

The floors of all spraying rooms should be vapour tight.

7 Electrical work

Electrical equipment and wiring systems should comply with the current edition of the Regulations of the Institution of Electrical Engineers, and should be suitable for use in a 'Division I area' (British Standard Code of Practice 1003: Part I: 1964) except that if installed outside the vapour stream and not within or on the immediate threshold of a spraying booth where a spraying booth is used, or if installed more than 5 feet (1·500 m) above the highest point at which

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spraying takes place where no spraying booth is used, equipment and wiring systems suitable for use in a 'Division 2 area' may be employed.

8 Heating

Any heating should preferably be by means of steam or hot water. Other types of heating may be approved if safe in a flammable atmosphere.

9 Ventilation

The spraying room should be adequately ventilated to the outer air by mechanical means to the satisfaction of the Council.

10 Details

Details of the proposed ventilation, heating, lighting and electrical arrangements for the spraying rooms will be required to be submitted before the work is commenced and the arrangements should be carried out to the satisfaction of the Council.

11 Spraying hoods

All spraying hoods should be constructed of non-combustible materials and not more than two spraying hoods or booths should be connected to a common exhaust trunking. The exhaust should be at low level.

12 Sprinklers

A sufficient number of sprinkler heads should be installed in the spraying room and, if spraying hoods are provided, one or more sprinkler heads should be situated in each hood.

13 Flame

No fixed sources of fire or flame should be permitted within the spraying room or within 20 feet (6 m) of the opening thereto. A permanent notice
"NO SMOKING—NO FIRE OR FLAME"
in 4 inch (100 mm) block letters should be displayed in the spraying room.

14 Special cases

a Special consideration by the Council will be necessary of any proposals for belt conveyors or other systems of production involving spraying within compartments in which other processes are also carried on. In these circumstances adequate provision for the separation of the spraying area, particularly where the belt conveyor perforates such separation, should be made which may also necessitate a rolling steel shutter or a fire door operated by a fusible link.

b In the case of certain proprietary car finishing booths the Council would be prepared to give consideration to modifying the standard of the enclosures referred to in (**2**) above upon the submission of full details having regard to the risk in relation to the building as a whole.

Note
i *The storage and use for spraying purposes of liquids which are petroleum mixtures as defined in the Petroleum (Mixtures) Order 1929 are subject to the licensing provisions of the Petroleum (Consolidation) Act 1928, and any requirements made under this Act should be complied with. The Licensing Department (Petroleum Branch) for this purpose is located at Egginton House, 25 Buckingham Gate, S.W.1. (Telephone 01–839 7799).*
ii *The storage and use of cellulose solutions are subject to Regulations made under the Factories Act 1961 and may also require the approval of H.M. Inspector of Factories.*

4.17 Diesel oil and petrol driven engines

1 Diesel oil driven engines

a Where any diesel oil driven engine is installed in any part of a building it should be in a room separated from the remainder of the building by non-

4.17 cont.

combustible partitions of at least 3 inches (75 mm) thickness (or other suitable protection) extending from floor to ceiling with adequate ventilation provided to the open air. Any door thereto should be a Class 'A' self-closing door and any glazing in the partitions or door should be fire-resisting fixed shut.

b The oil storage, wherever possible, should be outside the building and details of the plant and oil storage arrangements must be submitted to the Council. Where inside the building, the oil storage should be enclosed with walls of a two-hour standard of fire-resistance with a Class 'C' door to the access doorway which should be provided with a non-combustible threshold raised above the level of the floor so as to form a catchpit within the chamber having a capacity not less than 10 per cent. greater than the total capacity of the tank(s) therein. The chamber should be ventilated to the outside air but only to an extent necessary to avoid stagnation of air within the chamber.

c In the case of small installations, a single metal drum of oil (not exceeding 40 gallons (210 litre) in capacity) may be stored in an approved position.

d Any storage of oil exceeding 100 gallons (450 litre) should conform with the requirements of item **4.13 2.**

2 Petrol driven engines

Petrol driven plant should be adequately enclosed and protected and the arrangements must be satisfactory to the Council under the Petroleum (Consolidation) Act 1928.

3 Electrical installations

Electrical work should be in accordance with the current edition of the Regulations of the Institution of Electrical Engineers.

4.18 Electrical installations

Note
Where used in this Code of Practice.
'Low voltage' means voltage not exceeding 250 volts;
'Medium voltage' means voltage exceeding 250 volts but not exceeding 650 volts;
'High voltage' means voltage exceeding 650 volts.
In all cases the voltage is measured between conductors or between any conductor and earth (Root Mean Square values for alternating current).

1 Transformer sub-stations and switch rooms supplied from high voltage distribution systems

a Where a transformer sub-station and/or switch room supplied from high voltage distribution systems is:
i provided externally as a detached building and is within 20 feet (6m) of the main building, or
ii is adjoining the main building
the transformer chamber or switch room should be constructed with Class I enclosures in conformity with Part VI of the London Building (Constructional) Amending By-laws (No. 1) 1964 and where any portion of the roof of such transformer chamber or switch room is within 10 feet (3 m) of the main building and there are openings in the main building overlooking it, such roof should be constructed of reinforced concrete not less than 4 inches (100 mm) in thickness. All openings in the external walls or roof of the transformer chamber or switch room should be positioned so as to present the least risk to the main building and be fitted with Class 'A' self-closing doors or with fire-resisting glazing in frames fixed shut. Any ventilation openings in the doors, walls or roof should be fitted with metal or wired glass louvres.
Where the transformer chamber or switch room adjoin the main building the walls separating such transformer chamber or switch room from the main building should be to a four-hour standard of fire-resistance and should be imperforate (except as provided for in (**c**) (***ii***) and (***vi***) hereunder) the access to the transformer chamber or switch room being provided in the external wall furthest removed from the main building.

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b **Where provided within the building** the transformer chamber or switch room should be situated against an outer wall and the walls and floors separating it from the remainder of the building should have at least a four-hour standard of fire-resistance. Floors should be imperforate and separating walls also should be imperforate except as provided for in (**c**) (***ii***) and (***vi***) following.

c The structural arrangements should also conform with the following:

i Proper and easy access for inspection and maintenance should be provided direct from the external air whenever possible.
Where the size or layout of the transformer chamber or switch room renders it necessary, a secondary means of escape preferably direct to the external air should be provided and, in such a case, at least one means of escape should be satisfactorily screened from fire and smoke.

ii In difficult cases, where it is impossible to approach the transformer chamber or switch room from the external air, internal communication may be permitted from a portion of the building not occupied by the public and not being a staircase provided it be fitted with a single leaf hinged Class 'C' door fitting closely into a steel or iron frame and arranged to be kept locked shut by triple action bolts, secured on the outside by a padlock or similar fastenings such as can be easily broken by a fireman. Consideration could be given, in difficult situations, to internal communication from a portion of the building occupied by the public or from a staircase, other than a building having only one staircase, provided that the communication is by means of a lobby naturally ventilated to the outer air to an extent not less than 10 square feet (0·9 m²) constructed with walls and floors having not less than a two-hour standard of fire-resistance and the doors from the building or staircase into the lobby and from the lobby into the chamber or room are each a Class 'B' self-closing door.

iii Adequate and direct ventilation to the outer air should be provided and maintained and any trunks or ducts for this purpose should be separated from the remainder of the building by construction having not less than a four-hour standard of fire-resistance.

iv Where oil-immersed apparatus is to be used adequate precautions should be taken to prevent the spread of fire resulting from the leakage and ignition of oil by the provision of a suitable catchpit or other means.

v Where considered necessary the Council will require smoke outlets to be provided in suitable positions, fitted with covers such as can be easily broken by firemen in an emergency.

vi Where it is necessary to provide arrangements for the transfer of plant, an opening not exceeding 64 square feet (6 m²) in area may be provided if it is fitted with a steel or iron frame continuous around all four sides of the opening with a 3 inch wide (75 mm) rebate into which is fitted a steel panel comprising a $\frac{1}{4}$ inch (6 mm) thick steel plate stiffened with 4 inch by $\frac{1}{4}$ inch thick (100 mm by 6 mm) steel stiles and rails secured to each face or with steel angle or tee framing on the inner face, to the satisfaction of the District Surveyor. The panel should be hung on not less than three hinges and secured shut by not less than three steel bolts and nuts, through the thickness of the frame and panel in positions opposite and in line with the hinges. The plant access panel should be made smoke-proof. If a portion of the panel is to be hinged to open as an access door, the opening portion should be constructed as a steel door in conformity with the foregoing and should be hung to a steel frame fitted into the opening and secured to the wall and panel. If owing to the width of the access panel it is necessary for it to be in two leaves, it should be hinged on both sides as described above and be arranged to close upon and be bolted as described above to a central steel upright not less than 4 inches wide (100 mm) and $\frac{1}{4}$ inch (6 mm) in thickness which may be made moveable to facilitate plant access.
The panel should be marked permanently in 1 inch (25 mm) block letters "THIS PANEL NOT TO BE OPENED EXCEPT TO TRANSFER PLANT"

d The electrical arrangement of transformer chambers should conform with the following:

i Information should be given as to the capacity and type of transforming plant proposed. In certain cases the Council may require that the aggregate capacity be divided among a number of transformers, or group of transformers, separated from each other by non-combustible screens of adequate strength not less than 8 inches (200 mm) of brickwork or 7 inches (180 mm) of reinforced

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4.18 cont.

concrete in thickness to limit the possibility of spread of fire from one transformer, or group of transformers, to any other.
If oil-immersed equipment is to be used, each transformer or group of transformers should be provided with separate sumpage or other approved means of preventing the spread of oil in the event of leakage.

ii The electrical equipment generally should conform to the appropriate specifications of the British Standards Institution current at the time of installation, and should be type-tested to withstand the maximum fault energy to which it is liable to be subjected.

iii In certain cases the Council may require full details of the electrical arrangements to be submitted for approval.

e A suitable fixed automatic fire extinguishing installation will be required in all cases where (**a**), (**b**) and (**c**) foregoing cannot be complied with or where difficulty for fire-fighting arises. (See also Part VI of this Code.)

f In the case of transformers immersed in liquids other than oil and air-cooled transformers in which ordinary grades of insulating material are used, some relaxation of the above conditions may be allowed. Where air-cooled transformers in which only special grades of insulating material of low flammability are used further relaxation would be considered.
In all such cases full details of the proposed arrangements should be submitted for the Council's approval.

2 Transformers supplied at medium or low voltage (e.g. for testing or process work)

Full details of the electrical arrangements should be submitted for the Council's approval and, if oil-cooled transformers are used, adequate precautions should be taken by the provision of a suitable catchpit or other means to prevent the spread of fire resulting from leakage and ignition of oil.

3 Rooms containing low and medium voltage transformers, switchgear, batteries and other electrical plant

Such rooms should be enclosed by walls or partitions (not hollow stud partitions) of not less than a half-hour standard of fire-resistance and Class 'A' doors kept locked shut and be ventilated direct to the external air at high level. Where oil-immersed apparatus is installed, a suitable catchpit should be formed and the rooms should be provided with a smoke outlet if possible. An automatic fire-extinguishing installation may be required in certain cases. Small rooms not containing oil-immersed apparatus other than battery rooms may be ventilated internally by grilles through the enclosing walls and partitions, other than into a staircase or escape route.

4 General

Electrical work throughout the premises should be in accordance with the current edition of the Regulations of the Institution of Electrical Engineers.

4.19 Partitions, false ceilings, wall linings and encasements to ductwork, ventilation units, etc.

Partitions, false ceilings, wall linings and encasements to ductwork, ventilation units, etc. should conform in all respects with the requirements set out in Appendix C.

4.20 Raised platforms, suspended floors, elevated display areas, mannequin walkways in departmental stores, etc.

1 Any raised platforms, suspended floors, etc., where permitted, should be constructed to the satisfaction of the Council. Generally these should be of non-combustible construction but consideration would be given to small platforms, etc., being constructed of tongued and grooved boarding provided that the void beneath is sealed completely by vertical risers of non-combustible material and that the void is not used for any other purpose except for any necessary electrical

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wiring which should be protected by screwed metal conduit or be of mineral insulated metal-sheathed cable.

2 Where the amount of electrical wiring is excessive, e.g. beneath a suspended floor in an electronic computer suite, the soffit of the suspended floor should normally be of an approved non-combustible material. The use of combustible material for this purpose would be considered in which case the soffit of the suspended floor should be protected with a layer or layers of asbestos wallboard or other suitable material and the void space sub-divided by non-combustible fire-break sleeper walls or baffles into separate sections not exceeding 2000 square feet (200 m^2) in area.

3 Any proposal to erect free standing elevated staging to provide additional floor area within any storey will be considered on its merits with a view to the reduction or omission of fire protection thereto provided that the structure is supported independently of the main structure of the building and that suitable arrangements are made to ensure that an outbreak of fire beneath it can be adequately dealt with by fire-brigade personnel or by automatic self-extinguishing equipment.

4.21 Bulk storage, crude rubber storage, etc.

A four-hour standard of fire-resistance may be required to separate from the remainder of the building any portions used for the bulk storage of combustible materials or any portions wherein the fire load is likely to be high. Where any openings are formed in the enclosures they should be protected by two Class 'C' doors or two steel rolling shutters which would together provide a four-hour standard of fire-resistance. (See item **5.10**). Special consideration will be given to parts of buildings used for exceptional risks such as crude rubber storage, etc.

Note
Office storage will not be regarded as 'bulk storage' where contained within small compartments enclosed by walls and partitions of not less than a one-hour standard of fire-resistance with Class 'A' self-closing doors to the doorway openings.

4.22 Flammable substances, wax, etc.

1 Flammable liquids, spirits and solvents and highly flammable materials will not be allowed to be stored or used in the building without the consent of the Council. In this connection, regard should be had to any requirements made by the Council under Section 38 of the London Building Acts (Amendment) Act 1939. A requirement may be included for the provision of retaining sills to prevent the spread of such substances in case of a fire.

2 Cylinders containing gases under pressure should be stored, kept or used only in positions approved by the Council. They should, generally, be stored outside the building at ground level and should not be adjacent to any store containing flammable liquids, spirits, solvents or highly flammable materials.

4.23 Separation of high fire risks

1 Any portion of the building used for the manufacture, manipulation or storage of varnishes, flammable oils, packing materials or other substances of a flammable or highly combustible nature will be required to be separated completely from the remainder of the building with non-combustible materials of at least the same standard of fire-resistance as that required for the part of the building concerned, with any openings therein protected to an equivalent standard.

2 Any portion of the building used to accommodate refrigeration plant (other than small refrigerators of the domestic type) employing a refrigerant which is flammable or toxic, or which when subject to heat may give rise to flammable or

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4.23 cont.

toxic gases, should be separated from the remainder of the building by non-combustible materials having not less than a two-hour standard of fire-resistance and be ventilated direct to the external air.

3 If the refrigerant employed is, or when subjected to heat could be, flammable or toxic, there should be provided:

a a remote switch for stopping the refrigeration plant; and

b a remote switch for controlling any mechanical ventilation system serving the refrigeration plant room,
in the following positions:
i outside and near to the door of the refrigeration plant room and,
ii on the ground floor in an approved position where the refrigeration plant is at any other floor level.
The positions, type and indication of such switches should be to the satisfaction of the Council.
In no circumstances should refrigeration plant be accommodated in a boiler chamber.

4.24 Details of the heating, lighting, electrical and ventilating arrangements

1 Details of the heating, lighting, electrical and ventilating arrangements will be required to be submitted to the Council in the following cases:

a Garages, motor repair shops and car parks whether used for trade or non-trade purposes, where they exceed 250,000 cubic feet in extent (7 100 m^3).

b Parts of buildings used for trades or processes involving a special risk.

c Hotels.

d Major alterations and extensions to any of the buildings or parts of buildings coming within (a), (**b**) and (**c**) foregoing.

2 If mechanical ventilation involving recirculation of air is proposed, the Council may require the provision of automatic controls which will cause recirculation to cease upon the detection of smoke in appreciable quantities within the system; in addition, means for the exclusive use of firemen for control of the ventilation system may also be required.
Detailed proposals in this connection and of all other mechanical ventilating arrangements will be required to be submitted to the Council in respect of all buildings. (See also item **4.08 7** foregoing.)

3 Periodic inspections will be made of the approved heating, lighting, electrical and ventilation installations.

4.25 Signs

Signs or similar structures within or on a building and which are extensive in area should generally be of non-combustible construction throughout. Details of all signs or similar structures together with details of any electrical work should be submitted before any work is commenced.

General requirements applicable to both buildings of excess height and of additional cubical extent.

4.26 Other buildings within curtilage of site

1 The Council may require the provision of fire protective works and fire extinguishing appliances to other buildings within the curtilage of the same site where such protective works and appliances are deemed to be necessary for the proper protection of the building of excess height and/or additional cubical extent and the approaches thereto.

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2 Providing such other buildings are sited 30 feet (9 m) or more distant from the building of excess height and/or additional cubical extent and the approaches thereto, no additional protective works, etc., would normally be required unless an exceptionally high fire risk or hazard is involved.

3 The standards of protection, etc., to other buildings within 30 feet (9 m) of the building of excess height and/or additional cubical extent will be considered on the merits of the case having regard to the use, fire risk associated with such buildings and the distance of separation therefrom.

4.27 Maintenance of conditions of consent

1 Any work erected or carried out in accordance with the conditions of the Council's consent to excess height and/or additional cubical extent, and all fire extinguishing appliances provided in connection therewith, must be satisfactorily maintained.

2 Where mechanical ventilation is provided in lieu of natural ventilation in any building or part of a building and where it is provided in any garage or loading dock, it should be maintained in efficient operation whilst the building or part of the building is occupied by persons and/or vehicles.

4.28 Use of buildings

The use of any building of excess height and/or additional cubical extent and of any other buildings within the curtilage of the site should be restricted to the particulars submitted with the application.
Particular attention is drawn to cases where the normal use of any portion of the building may on occasions be changed for purposes involving a higher fire load, e.g. in hotels, the use of dining rooms, ballrooms, etc., for trade or other exhibitions; non-storage to storage use, etc. Full details should be submitted with the application where this is intended to enable the Council to assess the risk involved and any additional protection which may be considered necessary.

4.29 Commencement of occupation

No part of the building should be used or be occupied or be let for use or occupation unless and until the conditions contained in the consent, including any part in which alterations or additions have been approved, have in all respects been complied with to the satisfaction of the Council.

4.30 Standards of safety during the erection of buildings

In order to minimise the danger of fire during the erection of or extension or alteration to the building(s), it will be a condition of any approval that contractors and sub-contractors should be advised to conform with the following:

1 Huts

No huts should be placed or erected in the building(s) on floors the levels of which are more than 4 feet (1·500 m) below or 25 feet (8 m) above the level of the nearest adjacent street and such huts should be sited so as not to be closer than 20 feet (6 m) from each other nor closer than 20 feet (6 m) to any storage of combustible material.

2 Storage

Combustible materials should not be stored within the building(s) below or above the levels referred to in (**1**) above other than materials required for use in the particular storey in which the materials are being placed and no flammable liquids or compressed gases should be kept in the building(s) except such quantities as may be reasonably necessary for a day's work.

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3 Fire extinguishing appliances

Dry and wet rising mains

Where these are required by a condition of consent they should be installed progressively floor by floor in accordance with the 'Note' following either item **6.02 3, 4,** or **5** as the case may be.

Note:

i *Contractors and sub-contractors should be advised to provide that all new huts are constructed of non-combustible materials and that existing wooden huts or huts of other combustible construction, are lined internally (roof and sides) with non-combustible or approved fire-resisting material. They should also be advised of the need for proper safety control on building sites generally particularly where welding is undertaken or blow lamps or other sources of ignition are likely to be employed.*

ii *Should any difficulties be encountered in complying with these requirements the Fire Prevention Branch of the London Fire Brigade Headquarters, Albert Embankment, S.E.1 (telephone 01–735 3811) should be consulted.*

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Part V
Supplementary Requirements for Buildings of Additional Cubical Extent

Section 20(1) (b) of the London Building Acts (Amendment) Act 1939

Note

i Requirements for all buildings either of excess height or additional cubical extent are included in Part IV of the Code.

ii For fire extinguishing appliances, etc., see also Part VI

iii See Part I – Item **1.04** *for measurement of cubical extent.*

5.01 Buildings of additional cubical extent

In addition to the foregoing items Nos. **4.01** to **4.30** (inclusive), the following Code of Practice is applicable to buildings or parts of buildings of additional cubical extent. It will be noted that a higher standard of construction and fire protection is generally required because of the fire hazards involved in this class of building.

5.02 Accessibility of site

In order to provide adequate means of access in case of fire to a building of additional cubical extent, a portion of the building should abut upon a thoroughfare or open space not less than 30 feet wide (9 m) accessible to fire brigade appliances, the portion to be in accordance with the following scale:

If the building exceeds 250,000 cubic feet (7 100 m^3) at least one-sixth of the perimeter of the building.

If the building exceeds 1,000,000 cubic feet (28 400 m^3) at least one-fourth.

If the building exceeds 2,000,000 cubic feet (56 800 m^3) at least one-half.

If the building exceeds 3,000,000 cubic feet (85 200 m^3) at least three-fourths.

If the building exceeds 4,000,000 cubic feet (113 600 m^3) it should be on an island site.

Special consideration will be necessary in all cases where the foregoing cannot be complied with.

5.03 Limits of floor areas and extents of compartments
(see item **3.01 5**)

For the purposes of limiting the extent and spread of a fire a building of additional cubical extent should be designed in accordance with the following:

1 Buildings used solely for the sale, storage or processing of goods and substances wholly of a non-combustible nature including packaging.

No specific limit of cubical extent or floor area. Each case will be considered on its merits, regard being had to accessibility of site and risk to adjacent buildings. Any portion used otherwise than as described above should be separated from the remainder of the building by floors, walls and enclosed lifts, staircases, etc., all as herein described (see items **5.07** to **5.13**) and should comply with the following limitations of size.

2 Buildings (except those used for the bulk storage of goods or substances of a combustible nature) where (excluding any sub-basement

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and storeys over 80 feet) (24·384 m) the cubical extent does not exceed 500,000 cubic feet (14 200 m³) and the total floor area does not exceed 40,000 square feet (3 800 m²).
The whole of that part between the sub-basement and a height of 80 feet (24·384 m) may be in one compartment with open wells and unenclosed lifts and staircases provided:

a The formation of any open well, unenclosed lift or staircase is not contrary to the Council's requirements for means of escape in case of fire. Enclosures to lifts and staircases must be provided where required by the Council for such purposes.

b Any sub-basement storey and any storey above a height of 80 feet (24·384 m) is separated from the remainder of the building by floors, walls and enclosed lifts and staircases, etc., all having not less than a two-hour standard of fire-resistance.

c Any special risks, such as boiler houses, packing rooms, etc., or high fire risks, are separated from the remainder of the building, all as herein described.

d Adequate enclosed staircase access is provided from the open air to the basement storeys for fire-fighting purposes.

e The building is not united to any adjoining building. If so united the compartment limits in (**3**) hereunder should be applied.

3 Other buildings generally

These should be divided into compartments by floors, walls and enclosed staircases, lifts, etc., all as herein described (see items **5.07** to **5.13**) so that no compartment exceeds the following sizes:

Compartments	Floor area Square feet	Cubical extent Cubic feet
Compartments below pavement level. No compartment to comprise more than one storey.	20,000 (1 900 m²)	250,000 (7 100 m³)
Compartments between average pavement level and a height of 80 feet (24·384 m) therefrom. No compartment to comprise more than three storeys.	40,000 (3 800 m²)	500,000 (14 200 m³)
Compartments above a height of 80 feet (24·384 m) from average pavement level. No compartment to comprise more than one storey.	20,000 (1 900 m²)	250,000 (7 100 m³)

Note
i *In computing the extent of a compartment, properly enclosed lifts, stairs, etc., may be disregarded as may also any accommodation such as lavatory and locker rooms where* **e***nclosed with walls or partitions (not hollow stud partitions) having not less than a one-hour standard of fire-resistance and Class 'A' self-closing doors.*
ii *In computing the cubical extent of compartments in shops and similar premises, a floor to floor height of 12 feet 6 inches (3·800 m) may be used where the actual height exceeds that figure. This should not be applied when a compartment comprises more than one storey. or where mezzanine floors or galleries are provided in a storey.*

4 Garages

The compartment sizes for garages should be as detailed in Appendix B.

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5 High fire risk, bulk, storage, etc.

The compartments in buildings of high fire risk, or where bulk storage or warehousing of goods and substances of a combustible nature is proposed, should not exceed one half of the sizes given in (**3**) above. No storey or part of a storey above the height of 80 feet (24·384 m) should be used for the bulk storage of combustible goods (see item **4.02 4**). In addition each compartment should be limited to one storey only.

6 Retail shops (portions to be used for selling space only)

In retail shops, consideration will be given to the basement, ground and first floor storeys being in one compartment with open wells and unenclosed subsidiary staircases or escalators, provided that the compartment does not exceed 40,000 square feet (3 800 m²) in floor area and 500,000 cubic feet in extent (14 200 m³). Adequate means of access to the basement by enclosed staircases direct from streets should be given for fire-fighting purposes. (See also item **5.04**).
Consideration will also be given to allowing a compartment in the ground storey only up to a limit of 60,000 square feet (5 700 m²) in floor area and 750,000 cubic feet in extent (21 300 m³) provided the means of access for fire-fighting is adequate.

7 Printing works, etc.

Special consideration will be given to allowing compartments of greater sizes than quoted in the foregoing where it is essential for the accommodation of large printing presses and similar plant, etc.

8 Speculative letting

Where the user is unknown the building will be considered as one of high fire risk as in (**5**) above.

5.04 Separation of basements

1 Except where particularly mentioned in the foregoing item **5.03** basements should be separated from the ground and upper storeys by enclosed lifts, staircases, walls and floors all of the standard of construction herein required. (See items **5.07** to **5.13**).

2 In cases of high fire risks, such as bulk storage of highly flammable goods, the basement should be completely separated from the remainder of the building by imperforate walls and floors and direct access should be provided thereto by enclosed staircases from streets and open spaces. In such cases, not more than one storey should be formed below ground level.

5.05 Well-holes, open staircases, escalators, etc.

No well-holes, open staircases, escalators, etc., should be provided in any building except where within the compartments permitted by the foregoing.

Note
See item **5.13 4 c** *for partly enclosed subsidiary staircases and escalators between compartments.*

5.06 Construction generally

The building including its roofs should be constructed generally throughout of non-combustible material, and except where a higher standard of construction is required by this Code, in conformity with the provisions of the Building By-laws where they apply to this class of building. Any external cladding should be entirely of non-combustible materials. Special consideration will be necessary by the Council should pre-stressed concrete construction be proposed.

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5.07 Floors

1 In the case of:

a buildings of high fire risk, or

b buildings used mainly for bulk storage of goods or materials of a combustible nature, or

c the separation between special risks and the remainder of the building (see items **4.10**, **4.13**, **4.18** and **4.21**)

the floors, including compartment floors, should have not less than a four-hour standard of fire-resistance. In exceptional cases (see item **5.08 2**) a six-hour standard may be required.

Note
For floors relating to garages or car parks, see also Appendix B.

2 In all other cases, the floors, including compartment floors, should have not less than a two-hour standard of fire-resistance except that gallery floors may be to a one-hour standard of fire-resistance.

5.08 Protection of structural steel and reinforced concrete columns, hangers and beams

The protection of structural steelwork and reinforced concrete columns, hangers and beams should be to the following standards of fire-resistance:

1	Within a building or part of buildings of high fire risk or used mainly for the bulk storage of goods or materials of a combustible nature where the building exceeds one storey in height	4 hours
2	Within basements of buildings used for the bulk storage of substances constituting an abnormal fire load (such as rubber storage) or where difficulty of access for fire-fighting arises in class (**1**) above	6 hours – the Council should be consulted as to the construction to meet this requirement
3	Within single-storey buildings where not used for the bulk storage of goods or materials of a combustible nature . .	Nil
4	Within single-storey buildings used for the bulk storage of goods or materials of a combustible nature,	
	a the vertical structural members	2 hours
	b the beams supporting a flat roof or a roof truss . .	1 hour
5	Within garages and/or car parks	See Appendix B
6	All other cases	2 hours

Note
In addition to the above, attention is drawn to the following requirements of the London Building (Constructional) Amending By-laws (No. 1) 1964 which are also applicable to one-storey buildings:
i *Structural steel – 'By-law 8.02' as regards the protection of structural steel from weather and from moisture from the adjoining earth.*
ii *Reinforced concrete columns and beams – 'By-law 9.02' as regards the minimum thickness of concrete cover to reinforcement, including protection where exposed to the weather or in contact with a possible source of damp.*

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5.09 Walls separating compartments

1 Walls between compartments should be constructed throughout to have not less than a four-hour standard of fire-resistance and all supporting columns and beams should be protected or constructed to this standard of fire-resistance, except that walls between compartments:

a not exceeding 250,000 cu. ft. (7 100 m³) in extent, and

b not used for the bulk storage of combustible goods,

may be of not less than a two-hour standard of fire-resistance with all supporting columns and beams protected or constructed to this standard of fire-resistance.

2 In order to withstand impact loading compartment walls in buildings used predominantly for warehousing and bulk storage should be not less than 8 inches (200 mm) thick if of bricks, blocks or concrete or 7 inches (180 mm) thick if of reinforced concrete.

Note
A six-hour standard of fire-resistance may be required in some cases, e.g. abnormal fire load.

5.10 Openings in compartment walls and compartment floors

1 No openings should be formed in a wall or floor between compartments unless the approval of the Council first be obtained.

2 No opening in a compartment wall should exceed in size 7 feet (2·134 m) in width and 8 feet (2·438 m) in height where fitted with doors or 8 feet (2·438 m) in width and 7 feet (2·134 m) in height where fitted with steel rolling shutters and the total width of all openings in such wall should not aggregate in any storey more than one-half of the length of the wall in which they are formed.

In buildings with non-combustible floors the Council is prepared to consider allowing in compartment walls openings of a larger size but no opening should, except in special circumstances, exceed 144 square feet (13·378 m²) in area.

3 Except as described in (**4**) and (**6**) following, all openings in compartment walls should be fitted with:

a two Class 'C' doors or,

b two steel rolling shutters or,

c one Class 'C' door and one steel rolling shutter,

which together would provide a four-hour standard of fire-resistance.

In the case of openings substantially exceeding the sizes referred to in paragraph (**2**) foregoing, steel rolling shutters only should be provided.

4 Openings not exceeding 56 square feet (5·2 m²) in area in compartment walls not required to have a standard of fire-resistance exceeding two hours (see item **5.09**) may be fitted with two Class 'B' doors or with a single Class 'C' door of a type incorporating an insulating material to limit the transmission of heat.

5 All Class 'C' doors and steel shutters should be kept at least 9 inches (225 mm) apart or the full thickness of the wall (whichever be the greater distance) if the opening does not exceed 8 feet (2·400 m) in width; 1 foot 6 inches (450 mm) apart if over 8 feet (2·400 m) but not more than 10 feet (3 m) in width and 2 feet 6 inches (750 mm) apart if more than 10 feet (3 m) in width.

6 Perforations formed in compartment walls and floors for vent, conveyor and similar openings should each be fitted with two $\frac{1}{4}$ inch (6 mm) thick steel dampers or such other types as the Council may approve (except in the case of compartment walls and floors not required to have a standard of fire-resistance exceeding two hours where a single $\frac{1}{4}$ inch (6 mm) steel damper

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would be accepted) arranged to shut into an iron frame fixed substantially to the structure of the building within the thickness of the wall or floor so as to completely close the opening. The dampers should be held open only by means of a fusible link or links of approved pattern set to fuse at a temperature not exceeding 165°F (74°C) and arranged in an exposed position within the wall or floor perforation.

In the case of openings for conveyors the closure of the dampers thereto should automatically stop the operation of the conveyor and steps should be taken to ensure that no articles or materials remain on the conveyor belt within the opening when the conveyor is not in use.

In the case of openings for the passage of trunks or ducts, an inspection door of adequate size should be provided to the trunk or duct in an adjacent and suitable position to enable the dampers to be examined and the links renewed when necessary.
Full details of the dampers and fusible link or links arrangements must be submitted to the Council and its approval obtained thereto before the installation is commenced.

7 No combustible materials should be used in the construction and finish of openings in compartment walls and floors.

5.11 Shutters and doors

1 All steel rolling shutters and the openings therefor should conform in all respects with the Regulations made by the Council under Section 145 of the London Building Acts (Amendment) Act 1939, in respect of steel rolling shutters, including informative items (**a**) to (***e***) and (**g**) to (**j**) thereof where applicable, and every shutter should be fitted with a fusible link of approved pattern set to fuse at a temperature not exceeding 165°F (74°C) and so arranged as to permit the shutter to close automatically upon the fusing of the link.

Note
Where double steel rolling shutters are required to protect any openings they should be so arranged as to close automatically on the fusing of a single link.

2 No floor grooves should be provided for sliding Class 'C' doors but such doors should be held tightly to the jambs when closed by means of fixed floor rollers engaging with metal wedges on the lower parts of the doors, or by other satisfactory means.

3 All Class 'C' doors and any Class 'B' doors in compartment walls should be arranged to be self-closing. In the case of hinged doors, this should be in the form of a roller engaging with a rising track or by a fully enclosed rising hinge with machined bearings. If required to be retained in the open position the doors should be held open only by means of an approved type fusible link set to operate at a temperature not exceeding 165°F (74°C), arranged near the soffit of the opening and so adjusted that the doors will shut automatically into their frames completely to close the opening upon the fusing of the link. The frames should be of iron in the case of Class 'C' doors.
Full details of these requirements will be given in the conditions of the Council's consent.
Self-closing arrangements by means of springs or oil check devices may be accepted in the case of doors likely to be in constant use.

Note
Where two Class 'C' doors or where a Class 'C' door in combination with a steel rolling shutter are used to protect an opening in a compartment wall each door (or shutter) may be actuated by its own fusible link.

4 Where it is proposed to fit vertical shoot bolts to any Class 'B' or Class 'C' door required to be self-closing the bolts should be so arranged that when the door is in an open position, they are held in the retracted position and are not capable of being released from such position until actuated mechanically when the door is at or very near closure.

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5.11 cont.

Full details of the arrangements proposed to comply with this requirement should be submitted for prior approval unless the District Surveyor is satisfied that such details are in accordance with prototypes previously sanctioned by the Council.

5 All Class 'A', 'B' and 'C' doors and steel rolling shutters, should be fitted so as not to obstruct each other when opened and the spaces between the doors and/or shutters should be at all times kept clear of obstructions.

6 Where doors other than Class 'A' doors have central meeting styles, such styles should be rebated or similarly treated to restrict the passage of smoke and should be fitted with an approved device to ensure that, upon the fusing of the link, the leaves of the doors will close in correct sequence.

5.12 Locking of Class 'B' and 'C' doors and steel rolling shutters

In cases where it is desired that Class 'B' and 'C' doors be kept locked shut for purposes of security, etc., subject always to no objection arising from the point of view of means of escape in case of fire, locking by means of a padlock will be permitted provided:

1 the fastenings for the padlock be secured to the door only by means of $\frac{3}{8}$ inch (10 mm) cast iron bolts;

2 the bolts be not threaded in the thickness of the doors and the bolt holes be 1/16 inch (1·6 mm) clearing; and

3 the nuts and bolt heads project not less than $\frac{1}{2}$ inch (13 mm) from each face of the door and be maintained painted white.

No objection will be raised to means being incorporated to prevent the nuts being unscrewed after fixing.

Similarly any locking arrangements to steel rolling shutters must be to the Council's approval and the locks should be of a type which in an emergency can be broken by a fireman from either side of the opening and so enable the shutters to be raised. Approval has been given to prototypes of the locking arrangements recommended by some manufacturers.

5.13 Staircases, lifts and other shafts

1 Siting of staircases

A sufficient number of staircases should be sited on the external walls next to streets or open spaces accessible to Fire Brigade vehicles and preferably at the extremities of the building so arranged that free and unobstructed access to them is maintained at all times and that the travel distance between them, having regard to the possible lay-out of partitions and siting of machinery, etc. does not exceed 200 feet (61 m).

When the staircases are in a building of excess height they should be sited in conformity with item **4.08** of this Code.

2 Fire-fighting lobby-approach staircases

Fire-fighting lobby-approach staircases should conform to the standards as set out in Appendix 'A'. In a building containing more than two storeys above the ground storey where the total extent exceeds 1,000,000 cubic feet (28 400 m³), but does not exceed 2,000,000 cubic feet (56 800 m³), at least one fire-fighting lobby-approach staircase should be provided. Where the extent of the building exceeds the foregoing, the number of fire-fighting lobby-approach staircases to be provided should be in accordance with the following scale:

Two fire-fighting lobby-approach staircases to buildings over 2,000,000 cubic feet (56 800 m³).

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Three fire-fighting lobby-approach staircases to buildings over 4,000,000 cubic feet (113 600 m³).

Four fire-fighting lobby-approach staircases to buildings over 6,000,000 cubic feet (170 400 m³).

These requirements are to be regarded as a minimum and additional fire-fighting lobby-approach staircases may be required having regard to the siting, planning, use and fire risk of the building under consideration. (See also item **4.08 3** – Fire-fighting lobby-approach staircases, etc., in high buildings.)

3 Fire lifts

A fire lift should be associated with each fire-fighting lobby-approach staircase if the building exceeds 60 feet (18 m) in height or five storeys above ground level whichever is the lower and should conform with the standards set out in Appendix 'A'.

4 Staircases, lifts and other shafts

a The flights and landings of all staircases should be constructed wholly of non-combustible materials.

Where necessary for the proper sub-division of the building into compartments (see item **5.03**), the staircases, lifts, hoists, etc., and any continuous shafts perforating floors for the purpose of ventilation and for pipes, wires, etc., should be enclosed with walls having not less than a two-hour standard of fire-resistance and no combustible linings or insulating material should be provided therein, or to or within ventilating shafts and ducts except with the prior approval of the Council.

All openings in such enclosures should be fitted with a Class 'A' self-closing door and, in addition, with:

i a steel rolling shutter, or

ii a Class 'C' door.

The Class 'A' doors should be fixed not less than 9 inches (225 mm) from (***i***) or (***ii***) and in such a position that they will not, when fully open, prevent the proper operation thereof. Doorways to lavatories entered only from staircases, where the lavatories are to be separated from the floor areas by walls or partitions of not less than a one-hour standard of fire-resistance, need only be fitted with Class 'A' self-closing doors.

In the case of access openings to continuous shafts for the purpose of ventilation and for pipes, wires, etc., such openings need be fitted only with a Class 'C' door kept locked shut or bolted in position. The necessary openings for ventilating grilles or trunks should each be fitted with a single fusible link operated $\frac{1}{4}$ inch (6 mm) steel damper all in accordance with item **5.10** of this Code.

b Where enclosures to staircases, lifts, shafts, etc., are not required for the purpose of the sub-division of the building into compartments but are required for the purposes of means of escape, the enclosures need only be walls or non-combustible partitions of not less than a half-hour standard of fire-resistance with single Class 'A' self-closing doors to the accesses except in the case of a building exceeding 80 feet (24·384 m) in height when they should be enclosed with two-hour walls in the basement and one-hour walls above. (See item **4.08 4**).

c Subsidiary staircases and escalators perforating floors between compartments may be unenclosed in one compartment, provided they are enclosed in the adjoining compartment(s) by walls having not less than a two-hour standard of fire-resistance with ail openings therein fitted with a steel rolling shutter and a Class 'A' self-closing door.

In cases involving a high fire risk such staircases and escalators should be enclosed in the adjoining compartment(s) by walls having not less than a four-hour standard of fire-resistance and the openings therein protected by a steel rolling shutter and a Class 'C' door.

The Council may require certain safety features to be incorporated in escalators where shutters are required and the Council's officers should be consulted before any installation is commenced.

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5.13 cont.

d Provision should be made for ventilation and glazing to staircase, lift and other vertical shafts in accordance with the requirements set out in item **4.08**.

In the case of a shaft not carried up to and through a roof, it should be sealed over at the top with appropriate floor construction and if serving more than two storeys the shaft should be ventilated at the top as required in item **4.08** any trunking provided to reach the external air being of the same standard of construction as the shaft.

5.14 Partitions, false ceilings, wall and ceiling linings, etc.

1 These should be constructed in accordance with the standards set out in Appendix 'C'.

2 Racking, etc.

All storage racks and shelving in open floor areas of bulk storage buildings should be constructed of non-combustible materials and plans showing the layout of the spacing of such racking should be submitted for approval before installation.

In this connection attention is drawn to the Building By-laws relating to imposed loads. Any additional loading imposed by way of racking, etc. and its contents should first be approved by the District Surveyor.

5.15 Protection of adjacent buildings

1 All openings in the external walls and roofs where within 30 feet (9 m) from any other buildings except those buildings or parts of buildings which form laterally one continuous face should be fitted with Class 'A' doors, fire-resisting shutters or fire-resisting glazing; where the openings are within 20 feet (6 m) automatic drencher protection may also be required. This will not apply to lavatories and staircase windows, nor to shop windows in the ground storey if the show spaces are separated from the remainder of the storey by walls or partitions (not hollow stud partitions) of not less than a half-hour standard of fire-resistance from floor to ceiling with any doors therein being Class 'A' and rendered self-closing or kept locked shut.

2 Openings in external walls in the same plane should not be nearer than 3 feet (900 mm) from the centre line of party walls or the centre line of walls between compartments or fire risks, unless a satisfactory standard of separation is proposed by other means which may be obtained by any such openings being fitted with fire-resisting glass in metal frames (not aluminium) fixed shut.

3 Where openings in external walls are not in the same plane and are adjacent to party walls or walls between compartments or fire risks they should be not less than 6 feet (1·800 m) apart at their nearest point unless protected as described above.

5.16 Bridges and tunnels

Bridges and tunnels uniting buildings should be fitted at each end with a steel rolling shutter (or with double shutters at one end) on a fusible link of an approved pattern set to fuse at a temperature not exceeding 165°F (74°C) and, unless the Council otherwise consents, no openings should be provided within a distance of 3 feet (900 mm) from the junction of the bridge with the main building on either side and the walls within this distance should be of non-combustible construction having a standard of fire-resistance of not less than two hours. Bridges and tunnels may be used for the display of goods provided a clear gangway at least 5 feet (1·500 m) wide is maintained throughout and clearly indicated.

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5.17 Heating, lighting, electrical and ventilating arrangements

1 In the following types of cases conditions will be imposed requiring details of the heating, lighting, electrical and ventilating arrangements to be submitted to the Council for approval before commencement of the works and for such works to be provided and maintained to the satisfaction of the Council:

a Types of garages referred to in item **4.24 1 a**. Where a garage forms part of a 'high fire risk' building (in Class (**d**) below), the condition will include the garage portion of the building irrespective of its size.

b Departmental stores and similar shop risks together with any garage or car park in the same building.

c Parts of buildings used for the purpose of a hotel.

d Buildings used wholly or in part for purposes involving a high fire risk. Where the 'high fire risk' portion is of limited extent and is satisfactorily separated from the remainder of the building, the condition will only be applied to the high risk portion.

e Major alterations and extensions to any of the buildings or parts of buildings referred to in (**a**), (**b**), (**c**) and (**d**) foregoing.

2 Details of the mechanical ventilation arrangements will be required to be submitted to the Council and its approval thereto obtained in respect of all buildings.

3 Full details of the electrical arrangements in connection with fire lifts and in particular those arrangements which enable firemen to gain control of and operate such lifts.

4 Periodic inspections will be made of the approved heating, lighting, electrical and ventilation installations.

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Part VI
Fire Extinguisher Appliances etc.

Applying both to buildings of excess height and/or additional cubical extent.

6.01 Details and particulars to be submitted

Before any work is commenced plans and particulars should be submitted for approval showing details of all fire extinguishing installations and, where applicable, of the proposed water supplies.

6.02 Fire extinguishing appliances and installations

Fire extinguishing appliances and installations should be provided within the building and, when considered necessary by the Council, in any building within the same curtilage and ownership. The type of appliances and installations which the Council may require should be provided in accordance with the following:

1 Extemal fire hydrants

External fire hydrants should be provided where buildings are some distance from public thoroughfares and street hydrants.

2 Internal fire hydrants

Internal fire hydrants may be required in exceptional cases and the water supply thereto should be independent of the sprinkler or drencher installation supplies.

3 Dry rising mains

Dry rising mains should be provided in approved positions in the following cases:

a in the lobbies of the fire-fighting lobby-approach staircases;

b in other buildings and/or staircases as may be necessary to provide adequate cover against the spread of fire to other buildings or for the whole of any floor area concerned.

Note
Dry rising mains should be installed progressively floor by floor after the building reaches a height where any floor is greater than 60 feet (18 m) above the adjacent street level.

4 Wet rising mains

In all buildings exceeding 200 feet (61 m) in height measured to the underside of the ceiling of the topmost storey, wet rising mains (independent of sprinkler, drencher installations and hose reel supplies) should be provided in place of dry rising mains referred to in (**3**) above, within the lobbies of the fire-fighting lobby-approach staircases and within such other staircases as the Council may require.

Note
Wet rising mains should be installed progressively (as detailed in (**3**) *above) as dry rising mains until the building reaches a height of 200 feet (61 m) and thereafter as wet rising mains unless other arrangements to give fire-fighting facilities during the progress of works are agreed with the Fire Prevention Branch of the London Fire Brigade, Headquarters, Albert Embankment, London, S.E.1.*

5 Falling mains

Falling mains should generally be provided in the lobbies of the fire-fighting

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lobby-approach staircases or other approved positions in buildings involving deep basements. They should be installed progressively floor by floor and should discharge in a position at ground level (before excavation) satisfactory to the Chief Officer of the London Fire Brigade.

6 Automatic sprinkler installations

An automatic sprinkler installation with adequate water supplies and an external alarm should be provided in the following cases:

a in all buildings used for trade, manufacture or warehousing;

Note
Consideration will be given to the omission of an automatic sprinkler installation in buildings or parts of buildings used solely for the storage or manipulation of non-flammable materials, or in which a wet process is carried on, or where the use of water might entail a special risk to the plant or process carried on.

b in garages, car parks and certain loading docks (see item **4.11**) within buildings;

Note
A sprinkler installation may not be required where the garage or car park does not exceed 5,000 square feet (500 m²) in area (see Appendix B) or in the case of garages or car parks provided with additional ventilation (see Appendix B – Part IV).

c in portions of buildings used for trade purposes, for the storage or handling of combustible goods or materials or for any purpose involving a substantial fire risk (e.g. certain types of exhibitions, trade fairs, etc., in hotels).
Where the space above an imperforate false ceiling is sealed completely, does not contain any combustible materials and the void is not more than 2 feet 6 inches deep (750 mm) sprinkler heads need only be provided on the underside of the false ceiling. In other cases not conforming with these conditions, sprinkler heads would be required both above and below the false ceiling.
In cases where it appears that any alteration to the building, erection of partitioning, etc., may impair the efficient operation of the sprinkler installation a condition will be imposed requiring any necessary alteration to the sprinkler installation to be carried out to the satisfaction of the Council.
Where goods are stored within buildings and/or where extensive shelving, racking or sub-floors are provided for a similar purpose the goods should be so stored and/or the shelving, racking or sub-floors so sited as not to impair the efficient operation or coverage of the sprinkler installation.

7 Drenchers

Drenchers, automatic in operation, may be required in the following cases:

a to openings in external walls where there is a special risk of spread of fire to or from another building;

b to openings within 20 feet (6 m) of unprotected openings of garages;

c to openings within 20 feet (6 m) of petroleum filling points;

d to openings to cellulose spraying rooms, film vaults and similar risks;

e to openings to buildings of exceptional fire risk likely to endanger adjoining buildings or divisions of buildings; and

f to openings to other buildings or parts of the same building where considered necessary by the Council.

8 Automatic fire extinguishing installations

A suitable fixed automatic fire extinguishing installation should be provided in the following cases:

a in oil fuel heating chambers;

b in transformer chambers or switch rooms containing oil-immersed electrical apparatus;

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where they are not satisfactorily separated from the remainder of the building or are difficult of access or where the ventilation is not in accordance with items **4.13** and/or **4.18**;

c for the protection of other plant offering a substantial risk of fire or explosion.

9 Foam inlets

Foam inlets may be required for oil risks where access for fire-fighting is difficult or where ventilation is not of the required standard.

10 Hose reels and hand fire appliances

Hose reels connected to a suitable water supply (independent of sprinkler, wet rising mains and drencher installations supplies) and hand fire appliances of approved type, pattern and capacity, should be provided in all buildings. Consideration will be given to the omission of hose reels and hand fire appliances in flats and/or maisonettes.

11 General

Consideration would be given to any other form or type of fire-extinguishing equipment, etc. which may be regarded by the Council as appropriate to the fire hazard involved.

6.03 Internal fire alarms and automatic fire detection

1 Internal fire alarms would normally be required in buildings coming within the control of the Factories Act 1961, and/or the Offices, Shops and Railway Premises Act 1963, and in most other buildings where a fire may offer a high risk to life or is liable to spread quickly.

2 Automatic fire detection devices and equipment, etc., may be necessary in buildings where the risks involved warrant them, e.g. large hotels, very high office buildings, sleeping accommodation over trade and/or warehousing user, etc. In some cases the installation of such devices may be regarded as an alternative to an automatic sprinkler installation but each case will be dealt with on its merits.

6.04 Inspections and tests

An initial test will be made on installation by an authorised officer of the Fire Brigade and thereafter such authorised officer will inspect periodically and test, where considered necessary, the fire extinguishing appliances and special fire protection equipment required to be provided in all premises in respect of which the Council has consented to excess height and/or additional cubical extent, in order to ascertain whether such equipment is satisfactorily maintained. Inspecting officers will, if considered necessary, notify the occupier or owner in writing of his responsibilities regarding any defects in such equipment which may be noted during the inspections.

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Appendix A

Construction and Ventilaiton of fire-fighting lobby-approach staircases and fire lifts

A Part I - General

A1.01 Access to floors and landings

The staircases should afford access to all floors, and to the roof. Access from the topmost landing of a staircase to the roof by an approved fixed ladder may be accepted in certain cases.

A1.02 Enclosing walls of and construction of staircase, etc.

The enclosing walls of each staircase and the landings, flights, balustrades and handrails thereto should be constructed wholly of non-combustible materials and no combustible finishings including wall, ceiling linings and floor finishings should be provided in the staircase or its associated lobby.
In a building provided with a single staircase only (where permitted) the treads, risers (where provided), landings and supports should be capable of resisting the action of fire for a period of not less than one hour.

A1.03 "Perimeter enclosures", construction

1 The walls separating the staircase, fire lift (where required) and ventilated lobby from the floor areas in each storey (hereafter called the 'perimeter enclosures') together with any supporting structure and floor slabs forming the enclosures of the fire-fighting lobby-approach staircase should have a standard of fire-resistance at least equal to twice the standard of fire-resistance required for the elements of construction in the storey concerned, with a maximum of four hours in all cases except in basements used for bulk storage of materials constituting an abnormal fire-load, where six hour construction may be necessary (see item **5.08 2**); the perimeter enclosures should also be of that standard.
In order to withstand impact loading the perimeter enclosures in buildings used predominantly for warehousing or bulk storage should be not less than 8 inches (200 mm) thick if of bricks, blocks or concrete or 7 inches (180 mm) thick if of reinforced concrete.

2 The walls or partitions within the perimeter enclosures serving only to separate the staircase, lift and lobby from each other, need only have a half-hour standard of fire-resistance, but should be of non-combustible construction, with a minimal amount of glazing of fire-resisting quality therein.

3 The doors between the stairs and the lobby and between the lobby and the floor areas should be Class 'A' self-closing doors, but may be two-leaf double-swing doors provided the minimum amount of clearance is given around the edges and meeting stiles to restrict the passage of smoke. The doors between the stairs and the lobby should not be fitted with any bolts, locks or other fastenings which cannot be easily and immediately operated from both sides without the use of a key.

A1.04 Siting and ventilation of staircase

Except as provided for in A Part II of this Appendix the staircase should be on an external wall and should be ventilated as follows:

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1 by a permanent vent at the top of the staircase at least equal in area to 5 per cent. of the internal area of the staircase; and

2 by windows (at each storey level above the ground storey) capable of being opened without the aid of a key to an extent at least equal to 15 per cent. of the internal area of the staircase (see also item **A1.07** of this Appendix).

A1.05 Details of lobby, ventilation and smoke outlets

The staircase, which must be maintained unobstructed, should be approached from the floor areas, in every storey, including those below ground level, only through a lobby which should:

1 be on an external wall easily accessible to Fire Brigade appliances; have a floor area of not less than 60 square feet (5·5 m²) on all floors, including those below ground level, and all lobbies must be kept clear and free of all obstruction and must not be used for any purpose of trade, display, reception office or similar use. The lobbies must be planned so as not to form part of a general circulation route within any storey;

2 be enclosed as described in **A1.03** above with the accesses thereto from the floor areas and staircase each provided with Class 'A' self-closing doors;

3 in storeys below the ground level;

a be provided with a fusible link operated steel rolling shutter to the doorway opening between the lobby and the main floor areas in addition to Class 'A' self-closing doors. The shutter should be operated by mechanical gearing irrespective of the size of the opening (but see item **A2.01 1** and **2** of this Appendix), and be fitted on the main floor side of the opening not less than 9 inches (225 mm) from the Class 'A' doors and so that the shutter is not impeded when such doors are fully open.

b be provided with unobstructed smoke outlets having a minimum cross-sectional area of 10 square feet (0·9 m²) arranged to deliver direct to the open air in positions where the exits from the building would not be affected by smoke. The outlets should be enclosed and separated from each other with non-combustible materials and provided next the street with approved metal frames fitted with widely spaced metal louvres.
Where permanent ventilation to each lobby below ground level is provided to an extent of not less than 72 square inches (0·046 m²), the smoke outlets may be covered by an approved pattern stallboard or pavement light not less than 10 square feet (0·9 m²) in area in a position easily accessible to the fire brigade. The position of all such outlets will be required to be indicated by means of metal plates or other approved permanent marking at least 50 square inches (0·03 m²) in area marked 'SMOKE OUTLET FROM BASEMENT LOBBY' or, where there is a sub-basement, 'SMOKE OUTLET FROM SUB-BASEMENT LOBBY' and affixed to the external face of the building in positions to be approved by the Council adjacent to the outlet;

4 in all storeys above the ground level be provided with a permanent opening on the side next to the open air not less in area than 25 per cent. of the floor area of the lobby (see item **A1.06** hereunder).

Note
i *The enclosures of and separations between the smoke outlets from basement lobbies need have only a half-hour standard of fire-resistance except where passing outside the perimeter enclosure to the fire-fighting lobby-approach staircase.*
ii *No openings should be formed in the external enclosures of the building within 1 foot 6 inches (450 mm) measured horizontally, from any other opening in the external wall(s) of the staircase and/or lobby unless the approval of the Council is first obtained to an alternative arrangement.*

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A1.06 Openings to lobbies

The ventilation openings to the lobbies at ground floor level and above may be filled with frames and glazing where the following additional requirements are complied with:

1 The lobbies in each storey above ground level are ventilated by:

a a permanent vent at or near ceiling level having a clear area of not less than 72 square inches (0·046 m²) fitted only with widely spaced louvres; and

b windows capable of being opened without the aid of a key to an extent at least equal in area to 25 per cent. of the floor area of the lobby (see also item **A1.07** below); and

2 Except as provided in item **A2.01 1** and **2** of this Appendix for office and residential buildings the doorway openings between the lobby and the floor area in each storey are provided with a shutter, as detailed in item **A1.05 3 a** of this Appendix above, in addition to the requisite Class 'A' self-closing doors.

Note
*In the ground or entrance storey the windows referred to in (***1b***) above may be omitted provided that the entrance door thereto opens direct to the external air and is not less in area than that required for the windows.*

A1.07 Locking of windows in exceptional cases

In exceptional circumstances, consideration will be given to the windows referred to in paragraph **A1.04 2** and **A1.06 1 b** of this Appendix being fitted with budget locks of the carriage key type, provided that the locks are so positioned, at a suitable height (normally not exceeding 5 feet (1·5 m) above floor level), that there is no obstruction to prevent the point of a fireman's axe being inserted into the socket and turned to release the locking mechanism. The socket should be 5/16 inch (7·94 mm) square and not less than 1 inch (25 mm) in depth.

A1.08 Protection of lift shafts within lobbies

Openings to lift shafts within the lobbies should be fitted with Class 'A' self-closing doors each fitted with an automatic device to keep the doors locked shut (except the door opposite the lift cage when it is at rest at a floor level) and such lifts should not deliver elsewhere than within the lobbies.
See Diagram **1** for typical layout, etc. of a fire-fighting lobby-approach staircase on an external wall.

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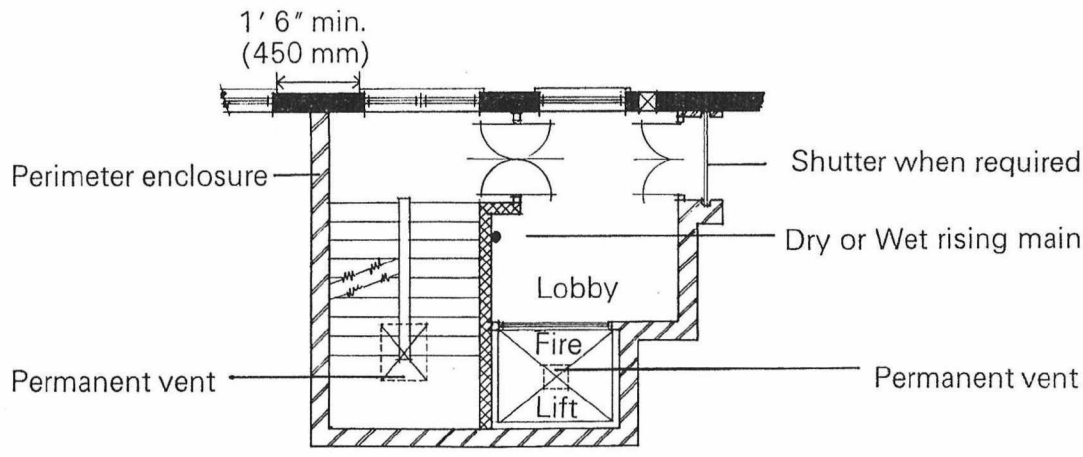
1 Typical fire-fighting lobby-approach staircase next to an external wall



N.B. Fire lift not generally required in buildings of additional cubic extent under 60′ high (18 m) or less than five storeys above ground level, whichever is the lower.

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A2.01 Fire-fighting lobby-approach staircase on an external wall

Where a fire-fighting lobby-approach staircase in a residential building and/or an office building adjoins an external wall, the provisions of A Part I of this Appendix should be applied where appropriate (see diagram 1) but relaxations of the foregoing requirements regarding steel rolling shutters would normally be permitted to fire-fighting lobby-approach staircases as follows:

1 Shutters would only be required below ground level and then only when the below ground risk is considered to warrant such protection.

2 Where shutters are required below ground level, unless they exceed 7 feet (2·134 m) in height and/or 8 feet (2·438 m) in width they need not be operated by mechanical gearing providing the openings lead into a permanent corridor constructed generally of fire-resisting materials.

A2.02 Fire-fighting lobby-approach staircase *not* on an external wall

Where a fire-fighting lobby-approach staircase is planned away from external walls the staircase and its lobbies may be ventilated,
i into a common open well (i.e., an enclosed space open only to the sky) or
ii into independent vertical shafts fully open to the external air at the bottom and top providing the following requirements are complied with:

1 Where the staircase and its lobbies ventilate into a common open well

a The open well should be roughly square on plan, having a superficial area of not less than 100 square feet (10 m²) *or* one square foot (0·1 m²) for each foot (300 mm) of height of the building, whichever be the greater (0·3 m² for each metre of height of the building). The enclosing walls of the well should have a similar standard of fire-resistance to that required for the perimeter enclosures of the fire-fighting lobby-approach staircase and no windows other than those required to the lobby and the staircase should open into the well except the minimum ventilation required for lavatories. Other openings will be considered on the merits of each case (e.g., having regard to the size of the well).

b The openable windows and permanent ventilation should be fully in accordance with the requirements of A Part I of this Appendix. (See Diagram **2**.)

2 Where the staircase and lobbies ventilate into independent vertical shafts

a The vertical shaft ventilating the staircase should be at least equal in area to 15 per cent. of the internal area of the staircase, or 15 square feet (1·4 m²) whichever be the greater, and have a minimum internal dimension of 2 feet 6 inches (750 mm).

b The vertical shaft ventilating the lobbies should be at least equal in area to 25 per cent. of the floor area of the lobby or 30 square feet (2·8 m²) whichever be the greater, and have a minimum internal dimension of 3 feet (900 mm).

c The openable windows and top ventilation to the staircase and the openable windows and permanent ventilation to each of the lobbies should be fully in accordance with A Part I of this Appendix and, in addition the windows to the staircase should be outward opening casement windows.

The window in each lobby should be designed so that:
i the head of the opening is at the ceiling level of the lobby;
ii the sill is at a height of not more than 3 feet 6 inches (1·100 m) above the level of the lobby floor;
iii the upper one-third of the window area is an outward-opening bottom-hinged hopper with metal side baffles at an angle not greater than 30° to the

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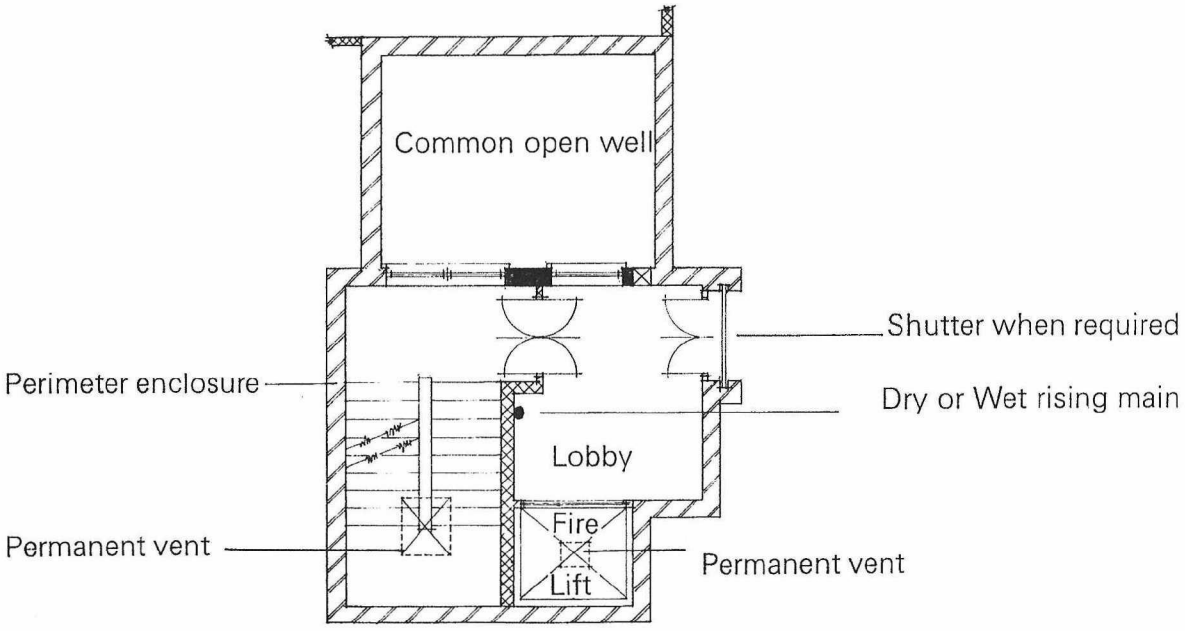
2 Typical fire-fighting lobby-approach staircase in an internal position with an open well

Note Office and residential buildings only



vertical; the remaining two-thirds of the window to be outward-opening side hung casements;

iv the window is glazed with fire-resisting glazing in metal frames (see Diagram **3**).

Note

Any glazed areas extending below normal sill height should be adequately protected by close balustrading of non-combustible construction.

3 Where lobbies are below ground level

a For the purpose of ventilating the lobbies the well or shaft should extend to the lowest level and, in the case of a shaft, the ventilation at the lower end should be in the lowest storey where this can be satisfactorily arranged. Otherwise the vertical shaft should be ventilated in the ground storey or immediately above and this ventilation may be by means of a straight horizontal trunk from the bottom of the shaft direct to the external air, maintaining the same internal area throughout. The staircase need not be ventilated below the ground storey unless specifically required by the Council.

b Where it is impracticable to carry a shaft or well to the storeys below ground level, the lobbies below that level should be ventilated and provided with smoke outlets as described in A Part I, paragraph **A1.05 3 b** of this Appendix.

4 The two or four-hour standard of fire-resistance required in A Part I of this Appendix for 'perimeter enclosures' should also be provided to enclose the internal wells or shafts.

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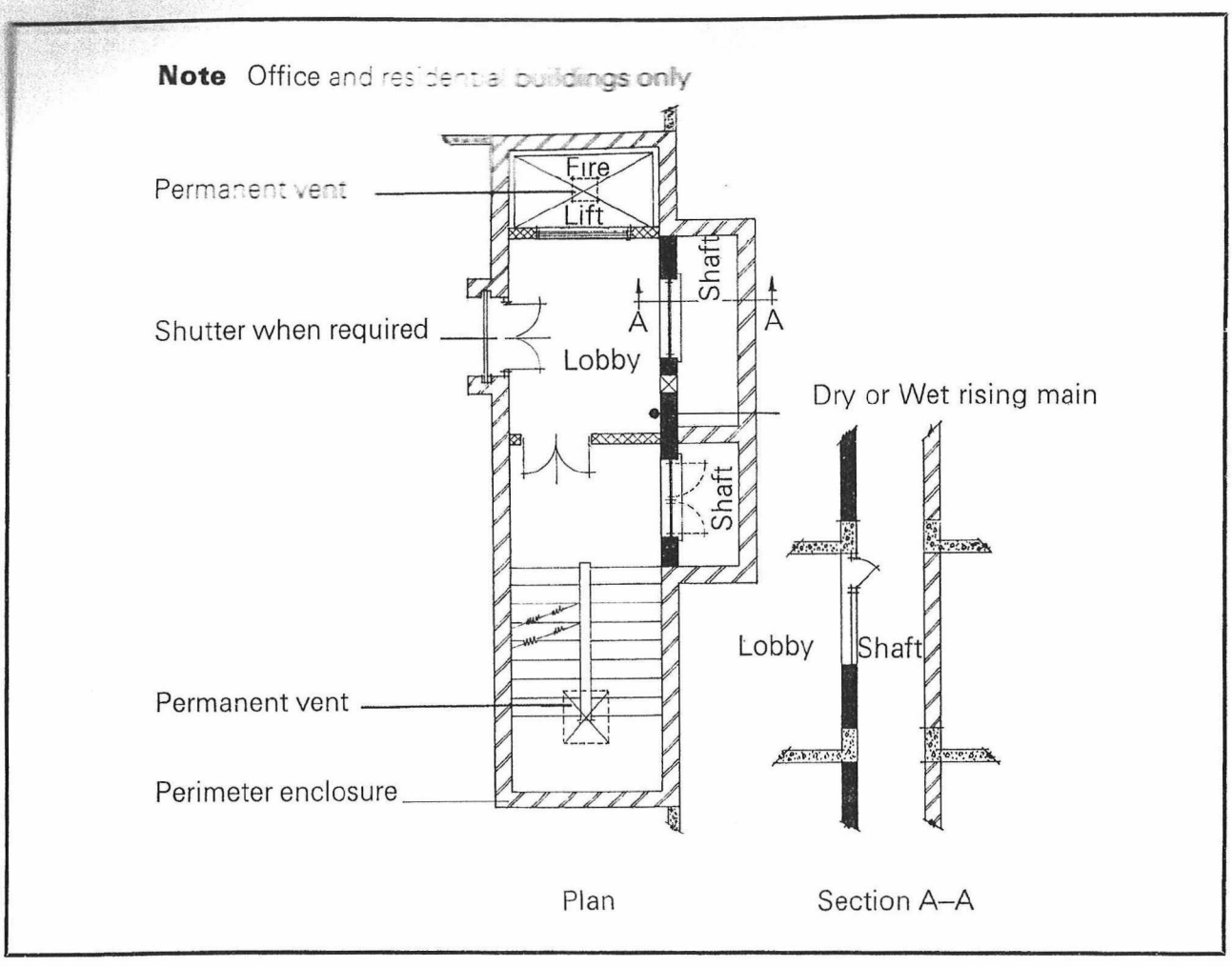
3 Typical fire-fighting lobby-approach staircase in an internal position with shafts



A2.03 Fire-fighting lobby-approach staircase in a single staircase block of flats and/or maisonettes

Where in a block of flats and/or maisonettes a single staircase is permitted the requirements contained in the Council's Code of Practice for Means of Escape in Case of Fire relating to the ventilation of the staircase and lobby or lobbies would normally be acceptable to the Council for the purpose of this Code which are as follows:

1 Single lobby schemes

a the lobby of the staircase should be cross ventilated by means of permanent openings totalling in net area not less than 25 per cent. of the vertical cross section of the lobby or 30 square feet (2·8 m²) whichever is the greater, or

b the total amount of possible ventilation should be not less than 30 square feet (2·8 m²) divided into at least two areas so located as to provide good cross ventilation. One-third of this amount should be in the form of permanent vents but the remainder may be in the form of windows. The permanent vents should extend horizontally across not less than one-half of the effective width of the lobby and downwards to about 6 feet (1·800 m) from the level of the floor but not lower, and the top of each permanent vent should be at or near to the ceiling of the lobby.
The permanent vents should be in the form of widely spaced louvres and, where protected from the weather, the louvres should slope upwards from the lobby to the outer air.
The windows should be capable of being opened without the aid of a key but in special circumstances consideration will be given to such windows being fitted with budget locks as described in A Part I – item **A1.07** of this Appendix. (See Diagram **4**.)

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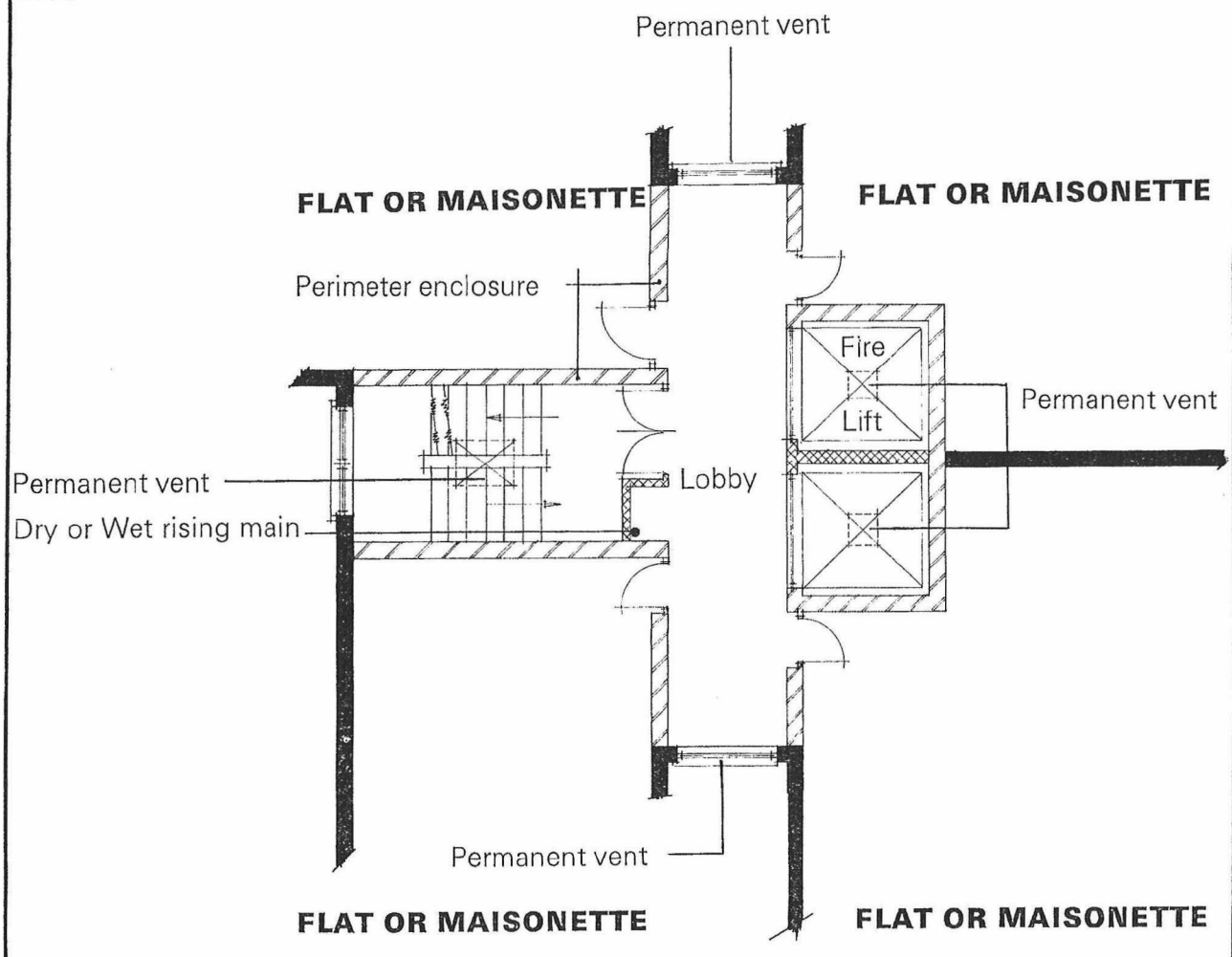
4 Typical cross-ventilated fire-fighting lobby approach staircase

Note Residential buildings only



2 Double lobby schemes

As an alternative to providing a single cross-ventilated lobby the provision of an additional (inner) lobby to separate the dwellings from the outer lobby and the staircase may be provided subject to:

a the 'inner' lobby being provided with permanent cross ventilation by two openings remote from one another, each not less than 4 square feet (0·4 m²) in clear area and having a depth of not less than 1 foot (300 mm), fitted only with widely spaced louvres discharging direct to the external air;

b the 'outer' lobby should be provided with a permanent opening to the external air not less than 15 square feet in area (1·4 m²) but this may be modified in the manner described in (**1 b**) above.

Horizontal ducts should be separated from the tenancies as required by Part XI of the London Building (Constructional) Amending By-laws (No. 1) 1964 and from lobbies by suitable non-combustible construction, which may be metal.

3 Ventilation of internal staircase

Where access to the staircase is through a single or double lobby as described in (**1**) and (**2**) above, the staircase may be internal provided it is ventilated:

a into a vertical shaft as described in item **A2.02 2** of this Appendix. A casement window, opening outwards into the shaft and capable of being

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A2.03 cont

opened without the aid of *a* key (see also A Part I – item **A1.07** of this Appendix) should be provided at each floor or landing level having *an* openable area equal to 15 per cent. of the internal area of the staircase enclosure or 15 square feet (1·4 m²) whichever be the greater. In addition a permanent vent should be provided at the top of the staircase equal in area to 5 per cent. of the internal area of the staircase; or

b by a permanent opening to the open air at the bottom and top each opening having an unobstructed area of not less than 10 square feet (0·9 m²).

Note
The enclosures of a shaft provided to comply with the foregoing should have a standard of fire-resistance at least equal to that required under Part XI of the London Building (Constructional) Amending By-laws (No. 1') 1964 for the separations between tenancies in the building.

4 General

In all other respects the staircase and lobbies should be fully in accordance with Parts A I and A II of this Appendix where appropriate.

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A Part III - Fire lifts

A3.01 Enclosures to fire lift and switch control

1 A fire lift should be enclosed with walls in conformity with A Part I – item **A1.03** of this Appendix and be arranged so as to be available for the exclusive use of firemen in an emergency. A switch-operated control in a glass-fronted box, clearly marked 'FIRE SWITCH', should be provided at ground level or other level to be decided by the Chief Officer of the London Fire Brigade, adjacent to the lift opening, whereby firemen can obtain immediate control of the lift without interference by the ordinary call points.

2 Service lifts should not be adapted for use as fire lifts without the prior approval of the Council.

A3.02 Access to fire lift

The fire lift should be entered,

1 above and below ground level only from the staircase lobby or, in the case of existing buildings where this is impracticable, from the staircase enclosure, and

2 at ground level direct from the outer air if possible. The lift should not be smaller than an '8-person lift' with an effective platform area not less than 15½ square feet (1·4 m²) and capable of carrying a load of 1,200 lb (550 kg). The speed of the lift should be such that it should be able to reach the topmost storey of the building in one minute. The lift shaft should be provided at the top with a permanent vent not less than 1 square foot in area (0·1 m²) and the access doors to the lift should be arranged to close automatically upon any landing call button being pressed.

A3.03 Electric supply

The electric supply to the fire lift should be connected to a sub-main circuit exclusive thereto after the main isolator of the building and independent of any other main or sub-main circuit; the cables supplying current to the lift motor should be installed in an approved system of wiring by a route of negligible fire risk, where possible within the lift shaft, or otherwise with adequate protection. Where the fire lift is one of a battery of not more than six lifts, the other lifts may be fed from the same supply provided it is adequate for this purpose and that the arrangements are such that a fault occurring in connection with any other lift in the battery will not affect in any way the efficient operation of the fire lift.

A3.04 Use of fire lift and termination point in office or residential buildings

1 The lift may be used normally by the occupants of the building.

2 In cases of offices or residential buildings where the staircases are sited in positions entirely satisfactory to the Council, consideration would be given to the fire lift(s) not serving the top storey but in this respect each case will be considered on its merits to ensure that no undue risk is involved.

Important Note
In all the foregoing cases in Parts AI, AII and AIII of this Appendix a special condition will be imposed to the effect that detailed plans, elevations and sections of the staircase, lobby and shaft arrangements, to a scale of half-inch to one foot (1:20) be submitted and approval obtained thereto before any work is commenced.

Appendix B

Garages and Car Parks

Contents

Note
Certain of the following requirements may be relaxed in the event of the garage or car park being used only for the accommodation of vehicles not petrol driven and where no petroleum spirit is contained within the garage or car park.

B Part I - General - Applicable to all garages

B1.01 Interpretation

Where used throughout this Appendix the expressions:

'garage' includes a car park and 'small garage' means a garage not exceeding 5,000 square feet in area (500 m^2).

B1.02 The Structure

Garages should be constructed wholly of non-combustible materials.

B1.03 Access ramps

Any ramps providing access should be designed with a gradient preferably not steeper than 1 in 10.

Outlets from ramps should be positioned so as not to prejudice the exits from the building or adjoining buildings.

B1.04 Staircases

A sufficient number of enclosed staircases should be provided throughout the garage for means of escape and fire-fighting purposes. Staircases generally should be sited next the external walls with access direct to the external air at ground level, and should be not more than 200 feet apart (61 m).

Fire-fighting lobby-approach staircases and fire lifts should be provided in garages exceeding 80 feet in height (24·384 m) or 1,000,000 cubic feet in extent (28 400 m^3) in accordance with items **4.08**, **5.13** of the principal Code and Appendix A.

B1.05 Areas of special risk

Special risks such as transformer chambers, boiler rooms, battery rooms, etc., should be completely separated from garages by imperforate walls and floors.

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B1.06 Heating, lighting, electrical and ventilation arrangements

In most cases it will be necessary to submit details of the various installations for approval.

Garages should be provided with adequate ventilation and, except where specifically referred to herein, this should be by natural means with permanent openings aggregating not less than $2\frac{1}{2}$ per cent. of the floor area so arranged to create through currents of air and sited so as to prevent the spread of fire (by way of adjacent openings in the external walls) to other parts of the building or to adjoining buildings.

B1.07 Repair service

Any portion of a garage used for repair services should be separated from the main floor area by non-combustible walls and/or partitions possessing not less than one-hour standard of fire-resistance. Doorways in such separation should be fitted with a Class 'A' self-closing door and all necessary precautions will need to be taken to ensure that any flame producing apparatus is a safe distance from the main garage risk.

B1.08 Fire extinguishing equipment

1 **Automatic sprinklers/drenchers.** An automatic sprinkler installation with adequate water supplies and an external alarm should be provided within all garages. A relaxation of this requirement will be considered in respect of

a 'small garages' subject to satisfactory separation from the remainder of the building and the provision of adequate natural ventilation within the garage, and

b certain open-sided or partially open-sided garages with additional natural ventilation (see Part B IV of this Appendix).
External openings in a garage, where in very close proximity to openings to the remainder of the building or to adjoining buildings will need to be protected by drenchers.

2 **Hose reels/extinguishers, etc.** Hose reels and/or hand fire appliances should be provided, and buckets of sand should be readily available for use in the event of petrol being spilled on the garage floor.

B1.09 Loading bays and docks

Loading bays and docks where permitted to be within or united with a garage should be in accordance with item **4.11** of the principal Code.

B1.10 Electrical and mechanical equipment

1 Electrical equipment (including electric lamps), if installed below the general garage floor level or in other hazardous positions, should be of certified flame-proof pattern (Group II gases) in accordance with B.S.229: 1957.

Electrical equipment (including electric lamps), if installed at garage floor level or within four feet above floor level (1·200 m) should be of a type suitable for use in Division 2 areas (see British Standard 4137: 1967).

All electrical equipment should be suitably protected from mechanical damage.

Note
Where a mechanical system of parking is proposed the Council will require full details to be submitted.

2 Electrical equipment installed within the air stream of the extract ventilation system should be of the certified flameproof type pattern (Group II gases).

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B1.11 Heating equipment

Any heating equipment inside the garage should be of a type safe in the presence of flammable vapour.

B1.12 Operational

1 The filling or emptying of car tanks within the garage or the taking of cans of petrol into the garage should not be permitted. Suitable notices to this effect should be conspicuously exhibited.

2 Smoking within the garage should be prohibited and prominent permanent notices to this effect, in block letters, should be conspicuously exhibited. Naked flame, portable heating appliances or other equipment capable of igniting petrol vapour should not be taken into the garage.

3 The garage should at all times be adequately supervised.

B1.13 Bulk petroleum spirit

1 The petroleum spirit storage area and tank wagon stands should be situated in well ventilated positions in the open air and external to the building.

2 No discharge of petroleum spirit from a tank wagon and no filling of car tanks should take place on a ramp to the garage.

3 Petroleum spirit storage areas and vehicle charging areas should be separated from the garage by means of walls having not less than a two-hour standard of fire-resistance with any openings therein protected by Class 'B' self-closing doors on fusible links or with steel rolling shutters on a fusible link. Openings to the garage within 40 feet (12 m) of petroleum storage tanks or within 30 feet (9 m) of petrol pumps may need to be protected by steel rolling shutters on a fusible link, or, in the case of window openings, by fire-resisting glazing unless otherwise suitably protected to the satisfaction of the Council.

4 The petroleum spirit storage area and vehicle charging area should be drained to a petroleum interceptor situated outside the garage and arrangements generally should be made to guard against any leakage or seepage of petroleum spirit from the petroleum spirit installation entering the garage.

5 Where any illuminated sign in or near a petroleum spirit filling station is proposed the Council will require full details to be submitted. Any such sign should be well removed from the ventilating pipes of petroleum spirit storage tanks.

6 No facilities for the filling of car tanks should be provided below ground level except in suitable positions in the open air.

B1.14 Petroleum (Consolidation) Act 1928

Attention is drawn to the need for consulting the Licensing Department (Petroleum Branch) of the Council regarding the position under the Petroleum (Consolidation) Act 1928. The Licensing Department for this purpose is located at Egginton House, 25 Buckingham Gate, S.W.1 (telephone 01-839 7799).

B1.15 Steel rolling shutters

Where steel rolling shutters are installed attention is drawn to the need for ensuring that adequate head room is provided (normally 6 feet 6 inches (2 m)) beneath the shutter box.

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B Part II—Underground garages and car parks

B2.01 Separation

The garage should be separated from any other part of the building and from any adjoining building by solid brick or reinforced concrete walls and reinforced concrete floors possessing not less than a four-hour standard of fire-resistance. All supporting members thereto, together with the supporting members to any building over the garage should be constructed or protected to a similar standard of fire-resistance.

'Small garages' (see B Part I – item **B1.01** of this Appendix) where provided with adequate and effective natural ventilation, may be separated from any other part of the building in which they are situated by solid walls and floors possessing not less than a two-hour standard of fire-resistance.

B2.02 Construction

Save as described by item **B2.01**, the elements of construction within the garage, together with any necessary compartment walls and floors, should be constructed to not less than a two-hour standard of fire-resistance.

B2.03 Sub-division

1 The garage should be sub-divided into fire compartments so that each storey forms a separate compartment and no compartment exceeds 500,000 cubic feet in extent (14 200 m^3) or 40,000 square feet in area (3 800 m^2). Staircases and lifts, etc., should be properly enclosed in accordance with item **5.13 4** of the Principal Code, and where necessary for the proper sub-division into compartments, ramps should be provided with a single steel rolling shutter on a fusible link set to fuse at a temperature not exceeding 165°F (74°C). Openings in compartment walls should be fitted with a single steel rolling shutter on a fusible link, and perforations in compartment walls and/or floors for ventilation and similar openings should be fitted with a $\frac{1}{4}$ inch (6 mm) thick steel damper (or other approved type damper) arranged to shut into an iron frame and held open only by means of an approved fusible link.

2 In cases where fire-fighting is difficult it may be necessary to further sub-divide the garage into smaller compartments, with due regard to the provision of a satisfactory circulation of air.

3 Special consideration will be given to compartments in excess of the limits referred to, having regard to the circumstances of the proposal.

B2.04 Communication with remainder of building

Communication between the garage and the remainder of the building may be permitted subject to adequate safeguards including the following:

1 Communication between the garage and other parts of the building at the same level other than by way of a staircase

a The use of the remainder of the building must be to the satisfaction of the Council and the portion of the building united with the garage must be provided with adequate means of escape in case of fire, independent of the communication with the garage.

b Access should be by means of a ventilated lobby constructed to not less than a four-hour standard of fire-resistance. The doorways between the garage and the lobby and between the lobby and the remainder of the building should each be fitted with a Class 'A' self-closing door and in addition with a steel rolling shutter fitted on each side of the ventilated lobby next the respective floor areas. The shutters should each be fitted with a fusible link and be provided with mechanical gearing.

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The floor of the lobby should be constructed of solid non-combustible material and should be raised not less than 6 inches (150 mm) above the level of the garage floor.

c The lobby should be provided with natural ventilation to the external air to an extent not less than 4 square feet in free area (0·4 m²). Any shaft or duct in connection therewith should be separated from the remainder of the building by construction having the same standard of fire-resistance as the enclosures to the lobby (see also item **B1.06** of this Appendix regarding the siting of openings in external walls).

d In the case of a 'small garage' the ventilated lobby may be constructed to a two-hour standard of fire-resistance and the doorway openings therein each fitted with a Class 'B' self-closing door in lieu of shutters and Class 'A' doors.

2 Communication by staircase or passenger lift with the ground and/or the upper storeys

a The main building should be provided with one or more staircases additional to the staircase which communicates with the garage.

b The staircase connecting the garage with the upper storeys should, where practicable, be a secondary staircase. It should be sited in a position where, in the event of fire in the garage, it will not prejudice or affect the escape routes from the upper storeys. Similarly any lift affording communication between the garage and the upper storeys should be so sited that its involvement in a garage fire will not jeopardise the means of escape from the upper storeys.

c The enclosure to the staircase of lift, where within the garage, should be constructed of solid brick or reinforced concrete walls and reinforced concrete floors possessing not less than a four-hour standard of fire-resistance.

d Access from the garage to the staircase or lift should be by means of a lobby constructed and ventilated as described in (**1 b**) and (**c**) foregoing. The doorway between the garage and the lobby, and between the lobby and the staircase or lift should each be fitted with a Class 'A' self-closing door and in addition the doorway between the garage and the lobby should be fitted on the garage side with a steel rolling shutter on a fusible link and provided with mechanical gearing.

e In the case of a 'small garage' the enclosure to the staircase of lift and to the ventilated lobby may be constructed to a two-hour standard of fire-resistance with the doorway openings therein protected as described in (**2 d**) above.

3 Communication by staircase to the ground storey only

Where the staircase communicates with the ground storey only, and is sited to the satisfaction of the Council, consideration will be given to the following relaxations of the standards referred to in (**2**) foregoing, each case being considered on its merits:

a the enclosure to the staircase in the basement and ground storeys may be constructed to have a standard of fire-resistance of not less than two hours;

b the ventilated lobby between the garage and the staircase may be omitted, and the doorway between the garage and the staircase fitted with a Class 'A' self-closing door and a steel rolling shutter on a fusible link on the garage side and provided with mechanical gearing. The doorway at the head of the staircase should be fitted with a Class 'A' self-closing door.

B2.05 Ventilation

1 Wherever practicable all basement garages should be provided with natural ventilation by means of openings positioned to induce cross currents and having a total area of not less than 2½ per cent. of the area of the floor. Entrances may be included as providing part of this ventilation when closed only by lattice type gates, and any such gates, shutters or doors to entrances should be locked shut only by means of a padlock fastening such as can be easily broken by a fireman in an emergency.

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2 In addition to natural ventilation, mechanical ventilation should be provided independent of any ventilating plant for other parts of the building. Where natural ventilation to the full standard described in (**1**) foregoing is provided, it will usually be sufficient for the mechanical ventilation to provide for three changes of air per hour.

3 Where natural ventilation to the standard of (**1**) foregoing cannot be provided, the mechanical ventilation will be required to overcome the worst conditions likely to arise from the discharge of exhaust gases. The plant will need to be arranged so that it can be run in two equal parts, each capable of providing not less than three changes of air per hour when run separately, and so controlled that in the event of failure of one part the other part continues to function. A secondary source of electrical supply (or other suitable source of power) should be provided to ensure that one part of the ventilation plant continues to function in the event of a failure occurring in the principal source of supply. When the plant is not controlled automatically it will be required that a competent person be in constant attendance to supervise the plant.

4 Ventilating ducts should be constructed of non-combustible materials and where adjacent to or passing through other parts of the building the ducts should be constructed or protected so as to afford the same standard of fire-resistance as required for the separation of the garage under item **B2.01** of this Appendix.

B2.06 Smoke outlets

Where natural ventilation to the extent referred to in item **B2.05** above cannot be obtained, an adequate number of smoke outlets should be provided in accordance with item **4.06 3** of the Principal Code. In any event, additional smoke outlets may be necessary, each case being considered on its merits. Full details should be submitted indicating the positions, sizes and types of all smoke outlets and pavement light covers, etc.

B2.07 Basement plans

Suitable plans of all basement storeys will be required to be displayed in accordance with item **4.06 1**c of the Principal Code.

B2.08 Deep basements

Proposals involving the formation of multi-storey garages below ground will (if permitted) require special consideration to ensure adequate facilities for fire-fighting, removal of smoke, etc., and special arrangements to ensure adequate ventilation (see also item **4.06 1**c of the principal Code).

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B Part III—Enclosed garages and car parks above ground

B3.01 Separation and construction

1 The garage should be separated from the remainder of the building by walls and floors constructed of solid brick or reinforced concrete possessing not less than a two-hour standard of fire-resistance. The elements of construction within the garage, together with any necessary compartment walls and floors should be to a similar standard of fire-resistance.

2 Where a garage comprises accommodation above and below ground level, the basement storeys should be in accordance with B Part II of this Appendix.

3 'Small garages' (see B Part I—item **B1.01** of this Appendix) where provided with adequate effective natural ventilation, may be constructed and separated from the remainder of the building to a standard of fire-resistance in accordance with Part XI of the London Building (Constructional) Amending By-laws (No. 1) 1964.

B3.02 Sub-division

1 The garage should be sub-divided into fire compartments by floors, walls and enclosed staircases, etc., so that no compartment exceeds 500,000 cubic feet in extent (14 200 m^3) or 40,000 square feet in area (3 800 m^2). Below a height of 80 feet (24·384 m) above pavement level not more than three storeys should be contained in one compartment. Each storey or part of a storey, the floor level of which is at a greater height than 80 feet (24·384 m) above pavement level should be arranged as a separate compartment and no compartment should exceed 250,000 cubic feet in extent (7 100 m^3) or 20,000 square feet in area (1 900 m^2).

2 Openings in compartment walls should be fitted with a steel rolling shutter on a fusible link; perforations in compartment walls and floors for ventilation and similar openings should be fitted with a $\frac{1}{4}$ inch thick steel damper (6 mm) (or other approved type damper) arranged to shut into an iron frame and held open only by means of an approved fusible link.

3 Staircases, lifts, etc., should be enclosed in accordance with item **5.13 4** of the Principal Code and where necessary for the sub-division into compartments, ramps should be provided with a single steel rolling shutter on a fusible link.

B3.03 Communication with remainder of building

Communication between the garage and the remainder of the building may be permitted subject to adequate safeguards including the following:

1 Communication between the garage and other parts of the building at the same level other than by way of a staircase.

a Access should be by means of a ventilated lobby constructed to not less than a two-hour standard of fire-resistance and provided with inner and outer Class 'B' self-closing doors. The lobby should be provided with permanent ventilation to the external air to an extent not less than 4 square feet in free area (0·4 m^2).

b Access from 'small garages' may be direct by doorway communication (without a ventilated lobby) provided that such doorway is fitted with a Class 'B' self-closing door.

c In the case of a building provided with a single staircase only, the access from the garage into the building should not discharge into a principal circulation route of the building and should be sited so as not to prejudice or affect the means of escape in the event of fire.

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2 Communication by staircase or passenger lift.

a The main building should be provided with one or more staircases additional to the staircase which communicates with the garage to the satisfaction of the Council.

b The staircase connecting the garage with the upper storeys should, where practicable, be a secondary staircase. It should be sited in a position where, in the event of it becoming unusable in the event of a fire in the garage, it will not prejudice or affect the escape routes from the upper storeys. Similarly any lift affording communication between the garage and the upper storeys should be so sited that its involvement in a garage fire will not jeopardise means of escape from the upper storeys.

c The enclosure to the staircase or lift, where within the garage should be constructed of solid brick or reinforced concrete possessing not less than a two-hour standard of fire-resistance.

d Access from the garage to the staircase or lift should be by means of a lobby, constructed and ventilated as described in (**1 a**) foregoing. The doorway between the garage and the lobby, and between the lobby and the staircase or lift should each be fitted with a Class 'A' self-closing door and in addition the doorway from the garage to the lobby should be fitted with a steel rolling shutter on a fusible link and provided with mechanical gearing.

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B Part IV—Garages and car parks with additional natural ventilation
(e.g. Open-sided or partially open-sided)

B4.01 General

Many garages above ground can be provided with a high standard of natural ventilation and subject to satisfactory siting of the building, the Council is prepared to consider a relaxation of certain of the standards referred to in B Part III including the omission of an automatic sprinkler installation, a reduction of the necessary standard of fire-resistance and the omission of any restriction on compartment sizes.

To secure the utmost relaxation, the garage should conform with the following:–

1 be provided with openings in the external enclosures to afford permanent ventilation to each storey from the external air to an extent not less than 5 per cent. in free area of the floor area of the garage, so arranged on opposing faces as to provide adequate cross ventilation to all parts;

2 be so designed that no car parking space is more than 100 feet (30 m) from a source of the ventilation referred to in (**1**) foregoing;

3 be not less than 30 feet (9 m) from other buildings or sites unless a satisfactory standard of imperforate separation is provided therefrom. Alternatively, drenchers may be provided to protect any openings within 30 feet (9 m) but openings will not be permitted less than 15 feet (4·500 m) from other buildings or sites except where they are in the same plane as the face of an adjoining building or site and are not less than 10 feet (3 m) distance therefrom;

4 be so positioned next streets or upon a site as to permit easy access for fire brigade appliances to a sufficient part of its perimeter to enable fire within any part of the structure to be attacked from the exterior and in this respect the openings referred to in (**1**) above should be kept unobstructed or be designed in such a manner so as not to obstruct the admission of water from hose pipes, etc.;

5 have any petrol service facilities external to the main structure, with a satisfactory standard of separation.

B4.02 Separation and Construction

The garage should be separated from any other portion of the building over by brick or reinforced concrete walls and by solid floors of reinforced concrete construction possessing not less than a two-hour standard of fire-resistance with any supporting members thereto constructed or protected to a similar standard of fire-resistance.

Elements of construction within the garage, other than the supports last referred to, may be constructed to a one-hour standard of fire-resistance.

Note
Where a building comprises a garage in the lower storeys, with other accommodation over, additional precautions may be necessary to safeguard against the spread of fire, including the provision of projecting floor slabs or drencher protection, as may be considered necessary by the Council.

B4.03 Mechanical car parking

In the case of a garage where parking is by mechanical means only, solid floors need not be provided at every floor level, but an imperforate non-combustible membrane should be provided at every third level of parking, over the whole of the actual parking area.

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Further, where a mechanical car park is completely isolated from other buildings and does not exceed 80 feet in height (24·384 m), consideration will be given to the omission of fire protection to structural steel.

B4.04 Semi-basements

The relaxations and standard of ventilation, etc., referred to in **B4.01** to **B4.03** of this Appendix (above) may also be applied to a storey situated partly below ground level, where the Council is satisfied with the general arrangements and with the effectiveness of the ventilation provided.

B4.05 Enclosures to car spaces

Where it is proposed to provide single car lock-up facilities within a single-storey garage not exceeding 250,000 cubic feet in extent (7 100 m^3), consideration will be given to the provision of enclosures in the following manner, subject in each case to the arrangements not interfering with the efficiency of the garage ventilation required in **B4.01 1** of this Appendix (above):

1 Wire mesh enclosures

a The enclosures to the lock-ups and the doors thereto should be constructed of wire mesh in metal frames or the doors may be of timber framing 1¾ inches thick (45 mm) with wire mesh infilling; and

b each set of four lock-ups should be separated from adjoining similar sets by solid non-combustible partitions extending from floor to the underside of the ceiling and possessing not less than a one-hour standard of fire-resistance.

2 Solid brick or block enclosures

a The enclosing walls or partitions to the three sides of each lock-up should be constructed so as to extend from the floor to the underside of the ceiling over. The enclosing walls or partitions (except where otherwise required to be imperforate for fire separation purposes) should be built with the top and bottom four courses arranged honeycombed, so as to provide in all cases permanent and effective cross-ventilation totalling not less than 10 per cent of the floor area of the lock-up;

b the door to each lock-up should be constructed and fitted so as to provide a ventilation opening at both the top and bottom of the door, extending the full width of the door and having in aggregate a total depth of 6 inches (150 mm).

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Appendix C

Partitions, false ceilings, wall and ceiling linings, encasements to ventilation ductwork, ventilation units etc.

C1.01 Partitions

1 Partitions may be either solid or hollow and should be constructed either

a of wholly non-combustible materials, or

b of timber, compressed board incorporating timber or such other similar material satisfactory to the Council completely covered on both sides with an outer cladding of solid non-combustible material not less than $\frac{1}{8}$ inch (3 mm) finished thickness firmly secured direct to the core. Structural timber framing at not less than 3 feet (0·9 m) centres may be left exposed provided that the framing is not less than 2 inches (50 mm) thick in any part.

Note
Non-combustible material for the purpose of cladding partitions means asbestos wallboard, plasterboard, plaster, or similar material but does not include asbestos cement sheeting or any other material liable to shatter when exposed to heat.

2 Unless otherwise required by the Council (e.g. on escape routes or to protected areas) ordinary glazing, timber doors, frames, skirtings and other normal timber trim would be permitted in partitions.

3 Cavities in hollow partitions of combustible construction should be fire-stopped at the top and bottom and vertically at intervals by members not exceeding 30 feet apart (9 m). All fire stops should be of non-combustible material or of timber not less than 2 inches (50 mm) thick in any part.

4 Where partitions form enclosures to special risks they should be constructed to have a minimum standard of fire-resistance of not less than *a* half-hour and any glazing permitted therein should be fire-resisting in frames fixed shut. In cases where the risk of spread of fire is substantial such partitions should be constructed of solid non-combustible material having a minimum standard of fire-resistance of not less than one hour with no glazing therein unless *a* higher standard is required by this Code.

5 **Decorative combustible finishings** (other than nitro-cellulose or similarly highly flammable coatings) may be applied direct to the non-combustible surface of partitions provided

a they do not exceed 1/32 inch in thickness (1 mm), or

b in the case of timber veneers exceeding 1/32 inch in thickness (1 mm) they do not exceed 1/20 inch (1·3 mm) in thickness and the material when tested in accordance with B.S.476: Part I: 1953 is classified Class 1 or 2 for surface spread of flame, or

c they do not exceed $\frac{1}{2}$ inch in thickness (13 mm) and the material when tested in accordance with B.S.476: Part I: 1953 is classified Class 1 for surface spread of flame and is throughout its thickness of no greater combustibility than its surface.

d Any decorative finish on the corridor side of an escape corridor should be limited to (**5** a) above;

e Other types of finishes in special areas such as board rooms, etc., will be

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considered on their merits and, where permitted, the rooms should be enclosed with partitions having not less than a half-hour standard of fire-resistance and constructed as described in (**1**) above.

C1.02 Linings to walls other than to partitions (e.g., external non-combustible walls), permanent brick or block walls

Wall linings in these positions may be constructed of:

1 Non-combustible material fixed direct to the wall or to timber battening so arranged that the cavity is fire-stopped at the top and bottom and also vertically at intervals not exceeding 6 feet (2 m) to avoid extensive voids.

Decorative surface finishes when required should comply with **C1.01 5 a**, **b** or **c** above, or

2 Combustible material complying with **C1.01 5 a**, **b** or **c** above applied or fixed direct to the surface of the wall. Timber battens for fixing will be permitted provided they are bedded solidly in non-combustible material (i.e., plaster, cement rendering, etc.).

Note
Linings next an escape route or a protected area should be non-combustible, any decorative finish being only as in **C1.01 5 a** above.

C1.03 Wall linings and/or encasements to horizontal ductwork, voids, undersill ventilation units, etc.

Wall linings in these positions should be of non-combustible material not less than $\frac{1}{8}$ inch (3 mm) in thickness with non-combustible supports. Decorative finishes in accordance with **C1.01 5 a**, **b** or **c** above may be applied to the exposed faces only (i.e., the room side).

Continuous voids should be stopped by non-combustible fire-resisting material not less than 3/16 inch (5 mm) in thickness at intervals of approximately 30 feet (9 m) or at suitable points dictated by the construction of the building.

Timber window boards to windows should be protected on the underside by a non-combustible backing not less than $\frac{1}{8}$ inch (3 mm) in thickness where there is an under-sill ventilating duct or unit.

Where ventilation grilles perforate linings or timber sills all edges of the perforations should be protected for their full thickness by a metal frame (not aluminium) and such grilles should be of non-combustible material.

No timber skirtings or combustible architectural features should be provided within a distance of 3 inches (75 mm) of ventilating ducts or grilles and where they form part of the enclosure thereto they should be backed with non-combustible material not less than $\frac{1}{8}$ inch in thickness (3 mm).

C1.04 Ceiling linings

Ceiling linings should be constructed of either:

1 Non-combustible material fixed

a direct to the underside of a non-combustible floor, or

b to timber battens which are fixed direct to a non-combustible floor and so arranged that the cavity is fire-stopped (a half-hour standard) by non-combustible material to divide it into areas not exceeding 2,000 square feet (200 m²).

Decorative finishes in accordance with **C1.01 5 a**, **b** or **c** above would normally be permitted, or

2 Combustible material complying with **C1.01 5 a**, **b** or **c** above applied or fixed direct to the underside of a non-combustible floor without any cavity.

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C1.05 False ceilings

Where false ceilings are suspended from the main structural floor the supports should be constructed of non-combustible material.

The false ceilings should be constructed of non-combustible material. Any decorative finish should be on the exposed face constructed only with material as described in **C1.01 5 a** above. No paper backing or other combustible material should be provided on the internal side.

Large voids should be divided into areas not exceeding 5,000 square feet each (500 m^2), by suitable fire-resisting construction.

Note
i *Removable false ceilings (e.g. metal trays, plaster slabs, etc.) will not be accepted as giving fire-resistance to structural steelwork or to floors above. An imperforate false ceiling of the appropriate standard of fire-resistance will be permitted as protection to structural steelwork beams (but not to structural columns) provided that the void is completely sealed and used for no purpose other than for electrical wiring in steel conduit and metal pipes other than gas pipes.*
ii *Special arrangements may be necessary where false and/or illuminated ceilings are provided (where permitted) in areas which are required to be protected by a sprinkler installation and in this connection the Council's officers should be consulted at an early stage (see also item* **6.02 5** *of the Principal Code).*

C1.06 Illuminated ceilings and illuminated panels in ceilings

Illuminated ceilings and illuminated panels in ceilings and flush light fittings, where permitted, should be constructed of material classified as being of very low flammability conforming with the current test (B.S.2782: 1965 – Methods of Testing Plastics: Miscellaneous Methods) and such ceilings or panels should be supported by a system of suspension composed entirely of non-combustible material.

C1.07 Electric wiring

Electric wiring within the hollow portion of any partition having a core of combustible material or behind any applied wall or ceiling lining having combustible material on the unexposed face should be protected by screwed metal conduit or metal trunking or should consist of mineral-insulated metal-sheathed cable. Similar protection should be provided for any wiring in any ceiling void or other void space if such void is used for conveying air in connection with any ventilation arrangements.

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Note
The letter A, B or C indicated in front of any Item Number refers to an item in Appendix A, B or C as the case may be.

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Designed in the GLC Department of Architecture and Civic Design
Printed for GLC Supplies Dept, (Printing & Graphic Design Division (28429/65143))
by C. F. Hodgson & Son Ltd., Pakenham St
London, WC1X 0LB

CTAR00000042/79