Appendix F

Means of escape

(A copy of this Appendix is available on www.routledge.com/books/details/9780415809696/)

F.1 Means of escape

F.1.1 The requirement

Subject to Section 30(3) of the Fire Precautions Act 1971, if a building (or proposed building) exceeds two storeys in height and the floor of any upper storey is more than 20ft above the surface of the street or ground on any side of the building and is:

• let out as flats or tenement dwellings;
• used as an inn, hotel, boarding house, hospital, nursing home, boarding school, children’s home or similar institution; or is
• used as a restaurant, shop, store or warehouse and has on an upper floor sleeping accommodation for persons employed on the premises;

then it must be equipped with adequate means of escape in case of fire, from each storey.

(Building Act 1984 Section 72)

The building shall be designed and constructed so that there are appropriate provisions for the early warning of fire, and appropriate means of escape in case of fire from the building to a place of safety outside the building capable of being safely and effectively used at all material times.

(Approved Document B1)

For a typical one- or two-storey dwelling, the requirement is limited to the provision of smoke alarms and to the provision of openable windows for emergency exit (see B1.i).

| There shall be sufficient escape routes that are suitably located to enable persons to evacuate the building in the event of a fire. | B1 |
| Safety routes shall be protected from the effects of fire. | B1 |
| In an emergency, the occupants of any part of the building shall be able to escape without any external assistance. | B1 i |
There should be alternative means of escape from ‘most situations’. The design of means of escape shall be based on an assessment of the risk to the occupants in the event of fire.

If direct escape to a place of safety is impracticable, it should be possible to reach a place of relative safety such as a protected stairway within a reasonable travel distance.

Unprotected escape routes should not require people to have to travel excessive distances while exposed to the immediate danger of fire and smoke.

People should be able to turn their backs on a fire wherever it occurs and travel away from it to a final exit or protected escape route leading to a place of safety.

The following are not considered acceptable as a means of escape:

- lifts (except suitably designed and installed evacuation lifts);
- portable ladders;
- throw-out ladders;
- fold-down ladders and chutes;
- escalators (although it is recognized that they are likely to be used by people who are escaping).

These facilities may, however, be used as an additional feature.

**Note:** Mechanized walkways could be accepted and their capacity assessed on the basis of their use as a walking route, while in the static mode.

**Risk assessment**

A risk assessment shall be carried out and the design of means of escape shall take into account:

- the nature of the building structure;
- the use of the building;
- the potential of fire spread through the building; and
- the proposed standard of fire safety management.
Dwelling houses

One- or two-storey dwelling houses shall be provided with:

- an early warning system in the event of fire;
- suitable means for emergency egress from each storey via windows or doors.

Floors more than 7.5 m above ground shall be provided with an alternative escape route.

Ground floor dwelling houses and flats

Except for kitchens, all habitable rooms on the ground floor should:

- either open directly onto a hall leading to the entrance or other suitable exit; or
- be provided with an emergency window (or door).

Any inner room that is a kitchen, laundry or utility room, dressing room, bathroom, WC or shower or situated not more than 4.5 m above ground level and whose only escape route is through another room, shall be provided with an emergency egress window.

**Note:** The means of escape from a flat with a floor not more than 4.5 m above ground level is relatively simple to provide. Few provisions are specified in the 2006 edition of Part B beyond ensuring that means shall be provided for giving early warning in the event of fire and suitable means are provided for emergency egress from these storeys. With increasing height, however, the situation becomes more complex because emergency egress through upper windows will become increasingly hazardous.

Upper floors not more than 4.5 m above ground level

Except for kitchens, all habitable rooms in the upper storey(s) of a dwelling-house that are served by only one stair, should be provided with:

- a window (or external door); or have
- direct access to a protected escape route.
Dwelling houses with one floor more than 4.5 m above ground level

The dwelling-house may either have a protected stairway which:

- extends to the final exit (see Figure E7); or
- gives access to at least two escape routes at ground level, each delivering to final exits and separated from each other by fire-resisting construction and fire doors (see Figure E7);

or the top floor can be separated from the lower storeys by fire-resisting construction and be provided with its own alternative escape route leading to its own final exit (see Figure E7).

Dwelling houses with more than one floor more than 4.5 m above ground level

Dwelling houses with floors more than 4.5 m above ground level shall (in addition to meeting requirement B1 2.6) have:

- an alternative escape route for each story or level that is more than 7.5 m above ground level; or
- a sprinkler system designed and installed in accordance with BS 9251:2005.

Note: The access to the alternative escape route should either be:

- via a protected stairway to an upper storey; or
- a landing within the protected stairway enclosure to an alternative escape route on the same storey; or
- the protected stairway that is at (or about) 7.5 m above ground level and which is separated from the lower storeys or levels by fire-resisting construction.

Buildings other than flats

Where the means of escape is based on phased evacuation, then a staged alarm system should be used. B1 1.25 (V2)

Where the means of escape is based on simultaneous evacuation, operation of a manual call point or fire detector should give an almost instantaneous warning from all the fire alarm sounders. B1 1.25 (V2)
**Note:** Automatic sprinkler systems can be used to operate a fire alarm system.

**Sheltered housing**

Whilst many of the provisions made in Part B 2007 for means of escape from flats are applicable to sheltered housing, the nature of the occupancy may necessitate some additional fire protection measures.

**Institutional buildings**

Special considerations may apply to some institutional buildings if residents need the assistance of staff to evacuate the building.

**Basements**

Owing to the risk that a single stairway may be blocked by smoke from a fire in the basement or ground storey:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basement storeys in a dwelling-house that contain a habitable room shall be</td>
<td>B1 2.13 (V1)</td>
</tr>
<tr>
<td>provided with either:</td>
<td></td>
</tr>
<tr>
<td>• an external door or window suitable for egress from the basement: or</td>
<td>B1 2.6 (V2)</td>
</tr>
<tr>
<td>• a protected stairway leading from the basement to a final exit.</td>
<td></td>
</tr>
</tbody>
</table>

**Galleries**

All galleries shall be provided with an alternative exit or, where the gallery floor is not more than 4.5 m above ground level, an emergency egress window.

If the gallery floor is not provided with an alternative exit or escape window:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>• the gallery should overlook at least 50% of the room below (see Figure F1);</td>
<td>B1 2.12 (V1)</td>
</tr>
<tr>
<td>• the distance between the foot of the access stair to the gallery and the</td>
<td>B1 2.8 (V2)</td>
</tr>
<tr>
<td>door to the room containing the gallery should not exceed 3 m; and</td>
<td></td>
</tr>
<tr>
<td>• the distance from the head of the access stair to any point on the gallery</td>
<td></td>
</tr>
<tr>
<td>should not exceed 7.5 m; and</td>
<td></td>
</tr>
<tr>
<td>• any cooking facilities within a room containing a gallery should either:</td>
<td></td>
</tr>
<tr>
<td>– be enclosed with fire-resisting construction; or</td>
<td></td>
</tr>
<tr>
<td>– be remote from the stair to the gallery.</td>
<td></td>
</tr>
</tbody>
</table>
Balconies and flat roofs

Any flat roof that forms part of a means of escape should:

- be part of the same building from which escape is being made;  
- lead to a storey exit or external escape route; and 
- provide 30 minutes fire resistance (see Appendix A, Table A1 of Approved Document B for fire resistance figures for elements of structure etc.).

**Note:** If a balcony or flat roof is provided for escape purposes, guarding may be required (see Approved Document K – Protection from falling, collision and impact).

Fire protected stairways

Fire protected stairways that, as far as reasonably possible:

- exclude all flames, smoke and gases shall be designed to provide effective ‘fire sterile’ areas that lead to places of safety outside the building;
- consist of fire-resistant material and fire-resistant doors and have an appropriate form of smoke control system.
External escape stairs

Where an external escape stair is provided: B1.15 (a, b and c)

- all doors giving access to the stair should be fire-resisting;
- any part of the external envelope of the building within 1800 mm of (and 9 m vertically below) the flights and landings of an external escape stair should be of fire resisting construction (see Figure F1);
- any part of the building (including doors) within 1800 mm of the escape route shall be protected by fire resisting construction.

External escape stairs greater than 6 m in vertical extent shall be protected from the effects of adverse weather conditions.

Note: Glazing in any fire-resisting construction should be fire resisting and fixed shut.

Figure F2  Fire resistance of areas adjacent to external stairs

Emergency egress windows and external doors

The window should be at least 450 mm high and 450 mm wide and have an unobstructed openable area of at least 0.33 m².
The bottom of the openable area should be not more than 1100 m above the floor.

The window or door should enable the person escaping to reach a place free from danger of fire (e.g. a courtyard or back garden which is at least as deep as the dwelling-house is high – see Figure F3).

Notes:

1. Approved Document K (Protection from falling, collision and impact) specifies a minimum guarding height of 800 mm, except in the case of a window in a roof where the bottom of the opening may be 600 mm above the floor.

2. Locks (with or without removable keys) and stays may be fitted to egress windows, provided that the stay is fitted with a child-resistant release catch.

3. Windows should be designed so that they remain in the open position without needing to be held open by the person making their escape.

Figure F3 Ground or basement storey exit into an enclosed space

Means of escape from the common parts of flats

The following requirements are primarily concerned with means of escape from the entrance doors of flats to a final exit.

Every flat should have access to alternative escape routes (but see Part B V2 paragraphs 2.20 to 2.22 for variations to this rule).

Escape routes in the common areas should comply with the limitations on travel distance shown in Table F1.
Escape routes should be planned so that people do not have to pass through one stairway enclosure to reach another.

Common corridors should be protected corridors. The wall between each flat and the corridor should be a compartment wall (see Section 8).

Means of ventilating common corridors/lobbies (i.e. to control smoke and so protect the common stairs) should be available.

In large buildings, the corridor or lobby adjoining the stair should be provided with a vent that is located as high as practicable and with its top edge at least as high as the top of the door to the stair.

There should also be a vent, with a free area of at least 1.0 $m^2$ from the top storey of the stairway to the outside.

In single stair buildings the smoke vents on the fire floor and at the head of the stair should be actuated by means of smoke detectors in the common access space providing access to the flats.

In buildings with more than one stair the smoke vents may be actuated manually.

Vents should either:

- be located on an external wall with minimum free area of 1.5 $m^2$;
- discharge into a vertical smoke shaft that is closed at the base (and meets the criteria listed in Part b V2 Paragraph 2.26b).

Smoke control of common escape routes by mechanical ventilation is permitted provided that it meets the requirements of BS EN 12101-6:2005.

Common corridors that connect two or more storey exits should be subdivided by a self-closing fire door with, if necessary, an associated fire-resisting screen (see Figure F4).

### Table F1 Limitations on distance of travel in common areas of blocks of flats

<table>
<thead>
<tr>
<th>Maximum distance of travel (m) from flat entrance door to common stair, or to stair lobby</th>
<th>Escape in one direction only</th>
<th>Escape in more than one direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.5m</td>
<td>30m</td>
<td></td>
</tr>
</tbody>
</table>

B1 2.23 (V2)

B1 2.24 (V2)

B1 2.24 (V2)

B1 2.25 (V2)

B1 2.26 (V2)

B1 2.26 (V2)

B1 2.26 (V2)

B1 2.26 (V2)

B1 2.26 (V2)

B1 2.26 (V2)
Note: Self-closing fire doors should be positioned so that smoke will not affect access to more than one stairway.

The dead-end portion of any common corridor should be separated from the rest of the corridor by a self-closing fire door (see Figure F4).

Stores and other ancillary accommodation should not be located within, or entered from, any protected lobby or protected corridor forming part of the only common escape route from a flat on the same storey as that ancillary accommodation.

If more than one escape route is available from a storey, or part of a building, one of those routes may be by way of a flat roof.

**Figure F4** Flats served by more than one common stair
Stairs

The flights and landings of every escape stair should be constructed using materials of limited combustibility particularly if it is:

- the only stair serving the building;
- within a basement storey;
- serves any storey having a floor level more than 18 m above ground or access level;
- external;
- a firefighting stair.

Single steps may only be used on escape routes where they are prominently marked.

Helical and spiral stairs forming part of an escape route should be:

- designed in accordance with BS 5395-2:1984;
- type B (Public stair) if they are intended to serve members of the public.

Fixed ladders should not be used as a means of escape for members of the public.

Note: See Part K for guidance on the design of helical and spiral stairs and fixed ladders.

If a protected stairway projects beyond, or is recessed from, or is in an internal angle adjoining external wall of the building, then the distance between any unprotected area in the external enclosures to the building and any unprotected area in the enclosure to the stairway should be at least 1800 mm (see Figure F5).

Where an external escape stair is provided in addition to another type of escape route (see paragraph 4.44) it should meet the following provisions:

- all doors giving access to the stair should be fire-resisting and self-closing;
- any part of the external envelope of the building within 1800 mm of (and 9 m vertically below) the flights and landings of an external escape stair should be fire resisting;
- there is protection by fire-resisting construction for any part of the building within 1800 mm of the escape route from the stair to a place of safety;
- glazing should also be fire resistant and fixed shut.
Width of escape stairs

The width of escape stairs should:

- not be less than the width of any exit(s);
- not be less than the minimum widths given in Table F2;
- not exceed 1400 mm if their vertical extent is more than 30 m, **unless** it is provided with a central handrail;
- not reduce in width at any point on the way to a final exit.

**Figure F5** External protection to protected stairways
In public buildings, if the width of the stair is more than 1800 mm, the stair should have a central handrail. Every escape stair should be wide enough to accommodate the number of persons needing to use it in an emergency.

**Note:** For further guidance and worked examples see Appendix C to Part B and Sections 4.18 (V2) to 4.25 (V2).

### Table F2 Minimum widths of escape stairs

<table>
<thead>
<tr>
<th>Stair situation</th>
<th>Maximum number of people served</th>
<th>Minimum stair width</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a In an Institutional building (unless the stair is only used by staff)</td>
<td>150</td>
<td>1000 mm</td>
</tr>
<tr>
<td>1b In an assembly building and serving an area used for assembly purposes (unless the area is less than 100 m²)</td>
<td>220</td>
<td>1100 mm</td>
</tr>
<tr>
<td>1c In any other building and serving an area with an occupancy of more than 50 people</td>
<td>Over 2200</td>
<td>1000–1800 mm*</td>
</tr>
<tr>
<td>2 Any stair not described above</td>
<td>50</td>
<td>800 mm</td>
</tr>
</tbody>
</table>

### Protection of escape stairs

Escape stairs need to have a satisfactory standard of fire protection.

Internal escape stairs should be a protected stairway within a fire-resisting enclosure.

Except for bars and restaurants, stairs may be open provided that:

- it does not connect more than two storeys and reaches the ground storey not more than 3 m from the final exit; and
- the storey is also served by a protected stairway; or
- it is a single stair in a small premises with the floor area in any storey not exceeding 90 m².
Basement stairs

Because of their situation, basement stairways are more likely to be filled with smoke and heat than stairs in ground and upper storeys. Special measures are therefore needed in order to prevent a basement fire endangering upper storeys.

If an escape stair forms part of the only escape route from an upper storey of a building it should not be continued down to serve any basement storey (i.e. the basement should be served by a separate stair).

If there is more than one escape stair from an upper storey of a building only one of the stairs serving the upper storeys of the building need be terminated at ground level.

External escape stairs

An external escape stair may be used, provided that:

• there is at least one internal escape stair from every part of each storey (excluding plant areas);
• in the case of an assembly and recreation building, the route is not intended for use by members of the public; or
• in the case of an institutional building, the route serves only office or residential staff accommodation.

Note: External escape stairs should meet the following provisions:

• all doors giving access to the stair should be fire-resisting and self-closing;
• any part of the external envelope of the building within 1800mm of (and 9m vertically below) the flights and landings of an external escape stair should be fire resisting;
• there is protection by fire-resisting construction for any part of the building within 1800mm of the escape route from the stair to a place of safety;
• glazing should also be fire resistant and fixed shut.

Common stairs

Normally a single common stair can be acceptable. In some cases, however, there should be access to more than one common stair for escape purposes.
Any stair used as a firefighting stair should be at least 1100 mm wide (see Part B V2, Appendix C for measurement of width).

All common stairs should be situated within a fire-resisting enclosure (i.e. it should be a protected stairway), to reduce the risk of smoke and heat making use of the stair hazardous.

Protected stairways should discharge:

• directly to a final exit; or
• via a protected exit passageway to a final exit.

Where two protected stairways (or exit passageways leading to different final exits) are adjacent, they should be separated by an imperforate enclosure.

A protected stairway needs to be relatively free of potential sources of fire.

If an escape stair forms part of the only escape route from an upper storey of a large building it should not be continued down to serve any basement storey.

The basement should be served by a separate stair.

If there is more than one escape stair from an upper storey of a building, only one of the stairs serving the upper storeys of the building need be terminated at ground level.

Note: Other stairs may connect with the basement storey(s) if there is a protected lobby or a protected corridor between the stair(s) and accommodation at each basement level.

Where a common stair forms part of the only escape route from a flat, it should not also serve any covered car park, boiler room, fuel storage space or other ancillary accommodation of similar fire risk.

Common stairs which do not form part of the only escape route from a flat may also serve ancillary accommodation if they are separated from the ancillary accommodation by a protected lobby or a protected corridor.

If the stair serves an enclosed (non-open-sided) car park, or place of special fire hazard, the lobby or corridor should have not less than 0.4 m² permanent ventilation or be protected by a mechanical smoke control system.
In single stair buildings, meters located within the stairway should be enclosed within a secure cupboard which is separated from the escape route with fire-resisting construction.

Gas service and installation pipes or associated meters should not be incorporated within a protected stairway unless the gas installation is in accordance with the requirements for installation and connection set out in the Pipelines Safety Regulations 1996, SI 1996 No 825 and the Gas Safety (installation and use) Regulations 1998 SI 1998 No 2451.

External escape stairs

If the building (or part of the building) is served by a single access stair, that stair may be external if it serves a floor not more than 6 m above the ground level. If there is more than one escape route available from a storey (or part of a building) an external escape stair may be used, provided that there is at least one internal escape stair from every part of each storey (excluding plant areas) and the external stair(s).

Flats in mixed-use buildings

The stairs of buildings which are no more than three storeys above the ground storey, may serve both flats and other occupancies, provided that the stairs are separated from each occupancy by protected lobbies at all levels.

The stairs of buildings which are more than three storeys above the ground storey, may serve both flats and other occupancies, provided that:

- the flat is ancillary to the main use of the building and is provided with an independent alternative escape route;
- the stair is separated from any other occupancies on the lower storeys by protected lobbies (at those storey levels);
- any automatic fire detection and alarm system with which the main part of the building is fitted also covers the flat;
- any security measures should not prevent escape at all material times.
Live/work units

If a flat is used as a workplace, the following additional fire precautions will be necessary:
• the maximum travel distance to the flat entrance door or an alternative means of escape (not a window) from any part of the working area should not exceed 18 m; and
• all windowless accommodation should have escape lighting (in accordance with BS 526, 6–1:2005) which illuminates the route.

Design for horizontal escape buildings other than flats

Exits in the central core of a building should be remote from one another. B1 3.11 (V2)

An escape route should not be within 4.5 m of an opening between floors (i.e. such as an escalator) unless:
• the direction of travel is away from the opening; or
• there is an alternative escape route which does not pass within 4.5 m of the open connection.

Any storey which has more than one escape stair should be planned so that it is not necessary to pass through one stairway to reach another. B1 3.13 (V2)

Storeys containing areas for the consumption of food and/or drink (and which are in addition to the main use of the building) shall have not less than two escape routes from each such area which lead directly to a storey exit without entering any kitchen or similar area of high fire hazard. B1 3.15 (V2)

The means of escape from storeys that are divided into separate occupancies:
• shall ensure that each occupancy does not have to pass through other occupancy; and (if the means of escape includes a common corridor or circulation space)
• should either be a protected corridor, or be equipped with an automatic fire detection and alarm system throughout the storey.

Except doorways, all escape routes should have a clear headroom of not less than 2 m. B1 3.16 (V2)
Although the width of escape routes and exits depends on the number of persons needing to use them, they should not be less than that shown in Table F3.

**Table F3  Widths of escape routes and exits**

<table>
<thead>
<tr>
<th>Maximum number of persons</th>
<th>Minimum width</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>750 mm</td>
</tr>
<tr>
<td>110</td>
<td>850 mm</td>
</tr>
<tr>
<td>220</td>
<td>1050 mm</td>
</tr>
<tr>
<td>More than 220</td>
<td>5 per person</td>
</tr>
</tbody>
</table>

Protected corridors shall be installed for:

- corridors serving bedrooms;
- dead-end corridors (excluding recesses not exceeding 2m deep);
- any corridor that is common to more than one different occupancies.

If, instead of a protected corridor, the means of escape is enclosed by partitions, those partitions shall:

- be carried up to the main soffit of the floor above or to a suspended ceiling;
- be fitted with doors into all openings into rooms off that corridor.

Every corridor more than 12m long and which connects two or more storey exits, should be subdivided by self-closing fire doors positioned approximately midway between the two storey exits.

Unless escape stairways and corridors are protected by a pressurization system complying with BS EN 12101-6:2005, every dead-end corridor exceeding 4.5m in length should be separated by self-closing fire doors (together with any necessary associated screens) from any part of the corridor which:

- provides two directions of escape;
- continues past one storey exit to another.
If an external escape route is beside an external wall of the building, that part of the external wall that is within 1800 mm of the escape route should be fire resistant up to a height of 1100 mm above the paving level of the route.

An escape over flat roofs is permissible if:

• the route does not serve an institutional building:
• is not part of a building intended for use by members of the public.

In small premises:

• floor areas should be generally undivided (except for kitchens, ancillary offices and stores) to ensure that exits are clearly visible from all parts of the floor areas;
• store rooms should be enclosed with fire-resisting construction;
• clear glazed areas should be provided in any partitioning separating a kitchen or ancillary office from the open floor area to enable any person within the kitchen or office to obtain early visual warning of an outbreak of fire.

Escape routes

The number of escape routes and exits to be provided will depend on the number of occupants in the room, tier or storey in question and the travel distance to the nearest exit (see Table 2 of B1 (V2)).

In mixed-use buildings, separate means of escape should be provided from any storeys (or parts of storeys) used for residential or assembly and recreation purposes.

There should be alternative escape routes from all parts of the building unless the travel distance is within set limits (see Table F2 of B1 (V2)).

Access control measures incorporated into the design of a building should not adversely affect fire safety provisions.

The minimum number of escape routes and exits from a room or storey shall be in accordance with the number of occupants (see Table F3).

Note: Further guidance concerning the number of occupants and exits is contained in Appendix C of Part B.
**Inner rooms**

If the only escape route from an inner room is through another room then:

- the occupant capacity of the inner room should not exceed 60;
- the inner room should not be a bedroom;
- the inner room should be entered directly off the access room (but not via a corridor);
- the escape route from the inner room should not pass through more than one access room;
- the travel distance from any point in the inner room to the exit(s) from the access room should not exceed the distances given in Table F2 of B1 (V2);
- the access room should not be a place of (i.e. potentially with) a special fire hazard;
- the access room should be in the control of the same occupier; and
- one of the following arrangements should be made;
  - the enclosures (walls or partitions) of the inner room should be stopped at least 500 mm below the ceiling; or
  - a vision panel not less 0.1 m² should be located in the door or walls of the inner room;
  - the access room should be fitted with an automatic fire detection and alarm system.

**Residential care homes**

**Note:** Generally speaking, in care homes for the elderly it is reasonable to assume that at least a proportion of the residents will need some assistance to evacuate.

Buildings should be designed for Progressive Horizontal Evacuation (PHE).

Areas used for the care of residents shall be subdivided into protected areas separated by compartment walls and compartment floors.

**Note:** This is to allow horizontal escape into an adjoining protected area.
Each storey used for the care of residents should be:

- divided into at least three protected areas by compartment wall; and
- all floors should be compartment floors.

Protected areas should be provided with at least two exits to adjoining, but separate, protected areas.

The maximum travel distances within a protected area to these exits should:

- not exceed those given in Table F2;
- not be more than 64 m to a storey exit or a final exit.

A fire in a protected area should not prevent the occupants of any other area from reaching a final exit.

Escape routes should not pass through ancillary accommodation (also see section 3.50 of Part B).

The number of residents beds in protected areas should not exceed ten.

A fire detection and alarm system should be provided to an L1 standard in accordance with BS 5839-1:2002.

Bedrooms should be enclosed in fire-resisting construction with fire-resisting doors and every corridor serving bedrooms should be a protected corridor.

Bedrooms should not contain more than one bed (this includes a double bed).

Design for vertical escape

An important aspect of means of escape in multi-storey buildings is the availability of a sufficient number of adequately sized and protected escape stairs.

The number of escape stairs needed in a building (or part of a building) will be determined by:

- the constraints imposed by the design of horizontal escape routes;
- whether independent stairs are required in mixed occupancy buildings;
- whether a single stair is acceptable; and
- the width for escape and the possibility that a stair may have to be discounted because of fire or smoke.
Provided that independent escape routes are not necessary from areas in different purpose groups, single escape stairs may be used from:

- small premises (other than bars or restaurants);
- office buildings comprising not more than five storeys above the ground storey;
- factories comprising not more than one storey above the ground storey if the building is of normal risk (two storeys if the building is of low risk); or
- process plant buildings with an occupant capacity of not more than ten people.

**Note:** In mixed-use buildings (i.e. where a building contains storeys (or parts of storeys) in different purpose groups) it is important to consider the effect of one risk on another – for example, a fire in a shop, or unattended office – could have serious consequences on a residential use in the same building. It is, therefore, important to consider whether completely separate routes of escape should be provided from each different use within the building or whether other effective means to protect common escape routes can be provided.

**General requirements**

All escape routes should have a clear headroom of not less than 2 m with no projection below this height (except for door frames).

The floors of all escape routes (including the treads of steps and surfaces of ramps and landings) should be chosen to minimize their slipperiness when wet.

Any sloping floor or tier should be constructed with a pitch of not more than 35° to the horizontal.

Where a ramp forms part of an escape route it shall meet the requirements of Part M Access to and Use of Buildings (see also Part K).

Final exits should:

- not be less in width than the minimum width required for the escape route(s) they serve;
- be sited to ensure rapid dispersal of persons from the vicinity of the building;
• not present an obstacle to wheelchair users and other people with disabilities; B1 5.32 (V2)
• be immediately apparent to persons who may need to use them; B1 5.33 (V2)
• be sited so that they are clear of any risk from fire or smoke in a basement, or from openings to transformer chambers. B1 5.34 (V2)

If an escape route is over a flat roof:
• the roof should be part of the same building from which escape is being made; B1 5.35 (V2)
• the route across the roof should lead to a storey exit or external escape route;
• the part of the roof forming the escape route and its supporting structure, together with any opening within 3 m of the escape route, should be fire-resisting;
• the route should be adequately defined and guarded by walls and/or protective barriers (which meet the provisions in Approved Document K). B1 5.35 (V2)

All escape routes should have adequate artificial lighting. B1 5.36 (V2)
Routes and areas listed in Table 9 of B1 (V2) should also have escape lighting which illuminates the route if the main supply fails. B1 5.35 (V2)
Lighting to escape stairs should be on a separate circuit from that supplying any other part of the escape route. B1 5.36 (V2)

The installation of an escape lighting system shall be in accordance with BS 5266-1:2005.

Escape routes (other than those in ordinary use and/or within a flat) should be marked by emergency exit sign(s) in accordance with BS 5499-1:2002. B1 5.37 (V2)

Note: Suitable signs should also be provided for refuges (see paragraph 4.10).

Where it is critical for electrical circuits to be able to continue to function during a fire, protected circuits (meeting the requirements of BS EN 50200:2006) are needed. B1 5.38 (V2)
Access lobbies and corridors

Escape stairs shall have a protected lobby or protected corridor at all levels (except the top storey, all basement levels and when the stair is a firefighting stair) if:

• the stair is the only one serving a building which has more than one storey above or below the ground storey;
• where the stair serves any storey at a height greater than 18 m; or
• where the building is designed for phased evacuation.

Protected lobbies (with not more than 0.4 m$^2$ permanent ventilation) should be provided between an escape stairway and a place of special fire hazard.

Protected stairways should discharge:

• directly to a final exit; or
• by way of a protected exit passageway to a final exit.

Note: Any such protected exit passageway should have the same standard of fire resistance and lobby protection as the stairway it serves.

If two protected stairways are adjacent, they (and any protected exit passageways linking them to final exits) shall be separated by an imperforate enclosure.

Protected stairways shall be free of potential sources of fire.

Cavity barriers

Cavity barriers should be provided above the enclosures to a protected stairway in a dwelling-house with a floor more than 4.5 m above ground level (see Figure F6).
Conversion to flats

If the existing building has timber floors and these are to be retained, the requirements for fire resistance may be difficult to meet. In these cases, provided that the means of escape conforms to Part B Section 3 and are adequately protected:

- doors on escape routes (both within and from the building) should be readily openable;  

- doors on escape routes (whether or not the doors are fire doors), should either not be fitted with lock, latch or bolt fastenings, or they should only be fitted with simple fastenings that can be readily operated from the side approached by people making an escape, without the use of a key and without having to manipulate more than one mechanism.

Figure F6 Alternative cavity barrier arrangements in roof space over protected stairway in a house with a floor more than 4.5m above
Where a secure door is operated by a code, combination, swipe or proximity card, biometric data or similar means, it should also be capable of being overridden from the side approached by people making their escape.

Electrically powered locks should return to the unlocked position:

- on operation of the fire alarm system;
- on loss of power or system error;
- on activation of a manual door release unit.

In assembly places, shops and commercial buildings, doors on escape routes from rooms with an occupant capacity of more than 60 should either not be fitted with lock, latch or bolt fastenings (or be fitted with panic fastenings in accordance with BS EN 1125:1997).

See also Appendix B for guidance about door closing and ‘hold open’ devices for fire doors.

The door of any doorway or exit should be hung to open in the direction of escape.

All doors on escape routes should be hung to open not less than 90°.

A door that opens towards a corridor or a stairway should be sufficiently recessed to prevent its swing from encroaching on the effective width of the stairway or corridor.

Vision panels shall be provided where doors on escape routes subdivide corridors, or where any doors are hung to swing both ways.

See also Parts M and N.

Revolving doors, automatic doors and turnstiles should not be placed across escape routes.

Fire doors

Roller shutters across a means of escape should only be released by a heat sensor, such as a fusible link or electric heat detector, in the immediate vicinity of the door.
Protection of escape routes

Generally, a 30 minute standard is sufficient for the protection of means of escape. (Details of fire resistance test criteria and standards of performance are contained in Appendix A to Part B.)

Walls, partitions and other enclosures that need to be fire-resisting (including roofs that form part of a means of escape), should have the appropriate performance given in Tables A1 and A2 of Appendix A to Part B.

All doors that need to be fire-resisting should meet the requirements given in Table B1 of Appendix B to Part B.

The use of glazed elements in fire-resisting enclosures and/or doors depends on whether that element forms part of a protected shaft (see Appendix A, Table A4 and also Part N).

Raised storage areas

Raised free-standing floors in single storey industrial and storage buildings which are effectively galleries or a floor forming an additional storey, in certain circumstances, might not be able to meet the requirements of Appendix A, Table A1. For the purposes of fire safety, they are, however, deemed acceptable provided that:

- the structure has only one tier and is used for storage purposes only;
- the number of persons likely to be on the floor at any one time is low and does not include members of the public;
- the floor is not more than 10 m wide or long and does not exceed one half of the floor area of the space in which it is situated;
- the floor is open above and below to the room or space in which it is situated; and
- the means of escape from the floor meets the relevant requirements of Part B (particularly Sections 3).
Table F4 Limitations on the use of uninsulated glazed elements on escape routes

<table>
<thead>
<tr>
<th>Position of glazed element</th>
<th>Maximum total glazed area in parts of the building with access to</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A single stairway</td>
</tr>
<tr>
<td></td>
<td>Walls</td>
</tr>
<tr>
<td>Single family dwelling houses</td>
<td></td>
</tr>
<tr>
<td>1  (a) Within the enclosures of (i) protected stairway (ii) existing stair (b) Within fire resisting separation (c) Existing window between an attached/integral garage and the house</td>
<td>Fixed fanlights only</td>
</tr>
<tr>
<td></td>
<td>Unlimited 100 mm from floor</td>
</tr>
<tr>
<td>Flats and maisonettes</td>
<td></td>
</tr>
<tr>
<td>2  Within the enclosures of a protected entrance hall or protected landing</td>
<td>Fixed fanlights only</td>
</tr>
</tbody>
</table>