Section 2 – Provisions of Means of Escape

Subsection B4 – Assessment of Occupant Capacity

Clause B4.1

As a guide to assessing the requirements on means of escape, the following Table B1 should be used as the basis for calculating the occupant capacity of a building or part of a building.

Table B1: Assessment of Occupant Capacity

Use Classification	**Type of Accommodation**	**Occupancy Factor (usable floor area in m^2 per person) or otherwise as specified**
1b	Flats: - with corridor or balcony access having five or more flats on each floor served by each staircase - flats not covered by the above	 4.5 9
1c	Tenement houses	3
2	Boarding houses, hostels, hotels, motels, Guesthouses	Number of bedspaces
	Dormitories	3
3a	Day care centres, nurseries, child care centres	4
	Hospitals (areas other than the patient care areas)	9
	Patient care areas	Number of bedspaces
3b	Detention and Correctional Centres	Number of bedspaces
4a	Offices - Board rooms, conference rooms, function rooms - Staff rooms	9 10 9
4b	Retail shops / Department Stores (including arcade and common areas) Basement, G/F, 1/F & 2/F 3rd floor & above	 3 4.5

Use Classification	Type of Accommodation	Occupancy Factor (usable floor area in m^2 per person) or otherwise as specified
	Markets, supermarkets, showrooms, jewellery and goldsmith shops, pawn shops and money changers	2
	Café, restaurants, dining areas, lounges, bars and pubs	1
	Banking halls (areas accessible to the public)	0.5
	Betting halls (areas accessible to the public)	0.5
	Places where public information or service counters are provided (areas accessible to the public)	0.5
5a	Art galleries, exhibition areas, museums	2
	Cinemas: Seating areas Foyer areas	 Number of seats 0.5
	Dance floors	0.75
	Sports Stadia standing removable seating fixed seating bench seating	 0.5 0.5 Number of seats 450mm/person
	Indoor sports facilities: Sports / activity areas standing removable seating fixed seating bench seating	 10 0.5 0.5 Number of seats 450mm/person
	Theatres: Seating areas Foyer areas	 Number of seats 0.5
5b	Libraries	2
	Reading rooms, study rooms	1
	Classrooms of school not covered by the Education Ordinance, lecture rooms	2 or number of seats

Use Classification	Type of Accommodation	Occupancy Factor (usable floor area in m^2 per person) or otherwise as specified
5c	Transport facilities like passenger terminals, railway stations, etc.	Based on actual design and layout
5d	Public halls, assembly halls, conference halls	
	removable seating	0.5
	fixed seating	Number of seats
	Gymnasia	3
	Swimming Pool	3
	Columbaria	2
	Viewing galleries	0.5
6a	Commercial Laundries	10
	Commercial Laboratories	10
	Factories / Workshops	4.5
	Commercial Kitchens	4.5
6b	Warehouses	30
6c	Storage, manufacturing of hazardous/ dangerous goods premises	30
7	Carparks	30
8	Plant rooms, switch rooms, transformer rooms, etc.	30

Notes:

1. The occupant capacity in a single user specialised industrial workplace will be determined by the Commissioner for Labour according to the specialised trade process proposed.
2. For any use not specified in this Table, the Building Authority should determine the factor to be used.
3. The Building Authority recognises actual counting as a reliable way to establish the occupant capacity of a building.
4. The occupant capacity in Karaoke Establishments should refer to “A Guide to Application for Karaoke Establishment Permits in Restaurant” issued by the Food and Environmental Hygiene Department.
5. The usable floor area for assessing the occupant capacity in the swimming pool in Use Classification 5d refers to the water surface area of the swimming pool.

6. Regarding columbaria in Use Classification 5d, for the avoidance of doubt, except the area for accommodation of niches and staircases, the prescribed width of exit routes including corridors of “balcony approach design” and the circulation areas such as lift lobbies etc. should be included in the calculation of usable floor area of a columbarium.

7. For Use Classification 8, the net floor area should be used in applying the occupancy factor. If the net floor area of a room does not exceeding 100m^2, the occupant capacity is considered to be zero.

Subsection B5 – General Requirements of Exit Routes

Clause B5.1

Every building to which this Part applies should be so constructed that there are available from each storey or fire compartment of the building such exits and exit routes as will comply with the requirements set out in this Part.

Clause B5.2

Every exit route should lead directly to an ultimate place of safety. Such exit route should not be closed with doors or gates unless such doors or gates are capable of being readily opened from inside and in the direction of the exit route without the use of key(s).

Clause B5.3

If an exit route leads to an open area at any upper floor levels of the building such as the podium level, instead of leading directly to an ultimate place of safety, the exit route at such floor level:

(a) should be adequately defined by permanent features e.g. handrail or railing;

(b) should lead to an ultimate place of safety; and

(c) should be designed and constructed as if it is part of the protected exit complying with the requirements in this Part and Clause C12.4.

See Diagram B1.

Clause B5.4

In a building where there is an area of special hazard that is directly associated with an area of normal hazard, any opening from such area of special hazard into any exit route should be provided with a protected lobby. The exit route from the area of normal hazard should not pass through any area of special hazard.

[Note: A restaurant with kitchens or food preparation rooms using gas fuel or electricity for food production is considered as “notifiable workplace” under Factories and Industrial Undertakings (Fire Precautions in Notifiable Workplaces) Regulations (Cap.59V). See Clause B13.6 regarding the provisions of means of escape for these premises.]

Clause B5.5

Every part of an exit route should be provided at all time with lighting of a horizontal illuminance at floor level of not less than 30 lux. The lighting can be a combination of natural and artificial light and should be backed up by an emergency lighting system that complies with the Code of Practice for Minimum Fire Service Installations and Equipment.

Clause B5.6

Exit routes from a building should not discharge into a private lane unless the lane is properly paved and free from any permanent obstruction and the Building Authority is satisfied with the integrity of the lane as an ultimate place of safety.

Clause B5.7

If the discharge point of the exit route to the ultimate place of safety is so sited that it adjoins another exit route or other accommodation, the walls enclosing the exit route should be returned along the frontage of the final discharge or project from the frontage for a distance of not less than 450mm, provided that any return should not reduce the effective width of the exit route.

Clause B5.8

If the discharge point of an exit route to the ultimate place of safety has a drop in level with a door or gate installed, the door or gate should be set back from the line of drop in level for a distance of not less than the width of the exit route. If the drop level consists of a single step, it should be so marked that the step is clearly visible.

Clause B5.9

Every part of an exit route should have a clear headroom of not less than 2000mm, provided that sprinkler heads may be installed along the side wall of the exit route and every such sprinkler head should not project:

(a) more than 90mm from such side wall; and

(b) so as to reduce the clear headroom of the exit route by more than 105mm.

Clause B5.10

Directional and exit signs should be provided to indicate the location of protected exits and assist occupants with their path of travel along the exit route. Such signs should comply with the requirements in the Code of Practice for Minimum Fire Service Installations and Equipment.

If the roof is not accessible by the required staircase(s), a notice in the following form with words and characters of not less than 50mm high should be securely fixed at a conspicuous position at the entrance to the required staircase(s) on every floor.

This staircase has no access to the roof

此樓梯不能通往天台

Subsection B6 – Buildings with Only One Required Staircase

Clause B6.1

Pursuant to Clause B8.1, no building will be permitted to have only one required staircase unless such building complies with the following requirements:

(a) The building does not exceed 6 storeys in height and the level of the floor of the uppermost storey is not more than 17m above the level of the ground at the discharge point of the required staircase;

(b) No room or storey of the building may be used for any occupancy other than domestic or offices, except the ground storey may be used for the purposes of a shop or carparking space provided that the requirements for required staircase enclosures in Part C are complied with;

(c) In the case of a building in which the level of the highest floor is not more than 13m above ground level the usable floor area of any storey above the ground storey should not exceed 250m^2; and

(d) In the case of a building in which the level of the highest floor is more than 13 m above ground level:

  (i) the usable floor area of any storey above the ground storey should not exceed 150m^2;

  (ii) access to the required staircase at each storey should be through a protected lobby. Such lobby should be designed as a common area and an integral part of the required staircase so that it could not be readily incorporated as part of any adjacent unit(s) of accommodation;

  (iii) the required staircase should be continued to the roof;

  (iv) there should be available on the roof an area of flat surface for refuge of not less than 0.5 m^2 per person based on the total population of the building above ground storey determined according to Table B1. Such flat roof should be accessible directly from the required staircase, clear of any obstruction, and is so positioned that it is readily accessible for rescue purposes; and

  (v) the roof should comply with the requirements in Subsection C12 of Part C.

Subsection B7 – Exits from Rooms and/or Fire Compartments

Clause B7.1

There should be available from every room or fire compartment of an occupant capacity exceeding 3 persons not less than the number of exit doors shown in Table B2 according to the occupant capacity of the room or the fire compartment. The width of each exit door and the total width of all the exit doors should be not less than the width shown in Table B2 according to the occupant capacity and the number of exit doors provided.

Commentary

For different situations, the number and width of exit doors required should be determined by assessing the occupant capacity within a room or within a fire compartment.

Clause B7.2

Every exit door provided according to Clause B7.1 should give access to an exit route which complies with Subsection B5 and which is independent of any other exit route to which access may be directly obtained from that room. Provided that the occupant capacity does not exceed 200 persons, the exit doors may give access to a single corridor or balcony approach from which it is possible to escape in more than one direction.

Clause B7.3

Where two or more exit doors (required by Table B2) vary in width, any width of an exit door in such group in excess of 50% above the width of the narrowest exit door in such group should not be included in the calculation for the minimum total width of exit doors as required in column 3 of Table B2.

Subsection B8 – Exits from Storeys

Clause B8.1

Every building, except those buildings permitted under Clause B6.1 to have only one required staircase, should be so constructed that there are available from each storey not less than 2 exit routes or such greater number as may be required by Table B2. The width of each exit route and the total width of all the exit routes should be not less than the width shown in Table B2 according to the occupant capacity and the number of exit routes provided. Provided that:

(a) this requirement should apply to only one of the storeys of a maisonette; and

(b) where two or more exit routes (required by Table B2 to serve a storey) vary in width, any width of an exit route in such group in excess of 50% above the width of the narrowest exit route in such group should not be included in the calculation for the minimum total width of exit routes as required by column 4 of Table B2.

Clause B8.2

Where two or more required staircases are needed, people using one required staircase should be able to gain access to at least one other required staircase at any time, without having to pass through other person's private premises. Such access should be provided in the following manners:

(a) at least every 5 storeys, and on the roof or the topmost floor accessible to the required staircases; or

(b) in case of refuge floor(s) are provided evenly between floors of the building, at the refuge floor(s) and the roof.

Security measures that prevent access to a required staircase must be automatically deactivated upon actuation of a fire alarm signal or in power failure situation.

Clause B8.3

A notice in the following form with words and characters in block letters of not less than 50 mm high should be fixed at a height of 1500 mm above floor level at a conspicuous position on the staircase enclosure wall of each landing on the floor with access to another required staircase under Clause B8.2. The notice should be illuminated by a light on two systems as the lighting referred to in Clause B5.5. The words and characters should not be easily defaced or damaged and should be in white colour on a background in green, or in green colour on a background in white or black.

Table B2: Minimum number and width of exit doors and exit routes from a room, fire compartment or storey

Occupant Capacity of room, fire compartment or storey (No. of persons)	Minimum No. of exit doors or exit routes	Minimum total width (in mm)		Minimum Width (in mm) of each	
		Exit doors	Exit routes	Exit door	Exit route
4- 30	1			750	1050
31-200	2	1750	2100	850	1050
201-300	2	2500	2500	1050	1050
301-500	2	3000	3000	1050	1050
501-750	3	4500	4500	1200	1200
751-1000	4	6000	6000	1200	1200
1001-1250	5	7500	7500	1350	1350
1251-1500	6	9000	9000	1350	1350
1501-1750	7	10500	10500	1500	1500
1751-2000	8	12000	12000	1500	1500
2001-2250	9	13500	13500	1500	1500
2251-2500	10	15000	15000	1500	1500
2501-2750	11	16500	16500	1500	1500
2751-3000	12	18000	18000	1500	1500
>3000 persons - the number of exit doors, exit routes and their width to be determined by the Building Authority					

Notes:

1. In the case of Places of Public Entertainment (Use Classification 5a), the requirements in Section 3 should be complied with.
2. The width of an exit door should be the least clear width measured between the vertical members of the door frame.
3. The width of a required staircase, staircase landing, passage or corridor comprising an exit route should be measured between the finished surfaces of the walls or of the inner sides of any balustrade and should not be decreased by the introduction of any projections other than handrails the projection of which should not exceed 90mm.
4. The Table shows the minimum requirement on the assumption that doors can be readily and freely opened by occupants in case of fire.

Commentary

Floors containing more than 3000 people may be designed by fire engineering. This is particularly relevant for large floor area buildings such as exhibition spaces, conference halls, sports facilities.

Subsection B9 – Exits at Ground Storey

Clause B9.1

The enclosing walls of every required staircase should be so continued at ground storey as to separate from the remainder of the building any passage or corridor leading from the required staircase to its ground storey discharge point. Every opening from the ground storey to such passage or corridor should be separated from it by a protected lobby; provided that:

(a) in the case of a building served by two or more required staircases, a cloakroom, lavatory, water-closet, caretaker's office, fire control room or caretaker's counter may open off such passageway; and

(b) in the case of a building served by three or more required staircases, one in every three such required staircase may discharge through fire rated doors to an entrance hall and that part of the entrance hall which forms the exit route should comply with the requirements of Subsection B5.

Clause B9.2

Where an exit route from a ground storey also forms part of the exit route from a required staircase, the width of such exit route should be not less than the sum of:

(a) half the width required for the exit route from the ground storey;

(b) the width required for the required staircase from the upper storeys; and

(c) the width required for the required staircase, if any, from the basements.

Subsection B10 – Access to Required Staircase(s) within a Building

Clause B10.1

In case of a building with one required staircase, attention is drawn to the requirements in Subsection B6.

Clause B10.2

In the case of a building with two or more required staircases, the access to the required staircases should be so arranged that:

(a) each required staircase is approached from a different direction provided that deadends are permitted, in accordance with Clause B11.2; and

(b) the door of one required staircase, or the nearest point in the perimeter of the landing to the required staircase where there is no door, should not be nearer than 6m from the door or a similar point of any other required staircase measured in straight lines either along the wall or the centerline of a route in-between, whichever the less. See Diagrams B2 and B4.

Clause B10.3

The means of escape from any part of a building should be so arranged that it is not necessary to pass through one required staircase enclosure including the protected lobby provided under Clause B10.4(b) or Clause B17.5 or the landing of one required staircase, as the case may be, in order to reach another required staircase.

Clause B10.4

Where internal access is provided:

(a) no door opening on to an internal common corridor should at any part of its swing reduce the minimum required width of such corridor;

(b) a protected lobby should be provided to each and every required staircase forming part of a protected exit unless the required staircase is:

  (i) in a building with only one required staircase described in Subsection B6 in which the level of the highest floor is not more than 13m above ground level; or

  (ii) in a building which is provided with two or more required staircases and the level of the highest floor is not more than 20m above ground level; or

  (iii) provided with a pressurization system complying with the Code of Practice for Minimum Fire Service Installations and Equipment; or

  (iv) a ventilated staircase.

Such lobby should be designed as a common area and an integral part of the required staircase so that it could not be readily incorporated as part of any adjacent unit(s) of accommodation.

Clause B10.5

A ventilated staircase in Clause B10.4(b)(iv) should have openings that provide effective cross ventilation at each storey level. Such staircase should comply with the following requirements:

(a) At least 50% of its perimeter is open to external air including; at least 50% of the opening is on the long face of the staircase and at least 25% of the opening is on the other faces;

(b) The length of opening should be measured on plan and is open from the top of the balustrade or parapet to the underside of the flight of the staircase immediately above;

(c) The openings should be evenly distributed across the elevations; and

(d) The requirements in Part C.

Clause B10.6

Where balcony approach is provided:

(a) the balcony approach should be protected in accordance with the requirements in Part C;

(b) the landing of any required staircase should not form part of the balcony approach;

(c) no door opening on to the balcony approach should at any part of its swing reduce the minimum required width of the balcony approach; and

(d) where there is a choice of exit routes (no deadend travel distance), every window opening on to the balcony approach should be so arranged that it should not be possible to fix any such window in an open position in such a manner as will reduce the minimum required width of the balcony approach. Windows are allowed to open through 180^{o} and be fixed open in that position or fanlights at a height not less than 2000mm above the balcony level.

Subsection B11 – Travel Distance

Clause B11.1

Travel distance is defined and explained in Part A.

Clause B11.2

The deadend travel distance is limited to:

(a) for Use Classifications 1 and 2:

  (i) 24m from any point within a flat/hotel guestroom to the exit door of that flat/guestroom;

  (ii) 15m from the flat/hotel guestroom exit door to the required staircase or to a point, from which travel in different directions to 2 or more exits is available;

(b) for Use Classification 3:

  (i) 12m to the protected exit or to a point, from which travel in different directions to 2 or more protected exits is available;

  (ii) Where balcony approach is provided to the storeys complying with Clause B10.6, 24m to the protected exit or to a point of choice, from which travel in different directions to 2 or more protected exits is available;

(c) for all other Use Classifications:

  (i) 18m to the protected exit or to a point, from which travel in different directions to 2 or more exits is available;

  (ii) Where balcony approach is provided to the storeys complying with Clause B10.6, 24m to the protected exit or to a point of choice, from which travel in different directions to 2 or more protected exits is available.

Clause B11.3

(a) In a storey which is served by two or more protected exits or points of discharge to an ultimate place of safety, the maximum travel distance including any deadend travel distance, is limited to:

(i) for Use Classifications 1 and 2: 24m from the flat/guestroom exit door to the nearest required staircase; 45m if along balcony approach.

(ii) for Use Classification 3: 30m to the nearest protected exit; 45m if along balcony approach.

(iii) for all other Use Classifications not provided with balcony approach: 36m to the nearest protected exit; 45m if along balcony approach.

(b) The horizontal distance measured on plan along the centreline of the exit route between a required staircase or a discharge point and any one of the other required staircases or discharge points, as the case may be, should not exceed 48m. The distance should be measured between:

(i) the centre of the fire rated doors to the enclosures of the required staircases;

(ii) if there is no such door, the landings of the required staircases; or

(iii) in the case of an open podium floor, the points as described in (i) or (ii) above, or the first treads of the open required staircases nearest to the podium.

The requirements stipulated in this Subsection are illustrated in:

- Diagram B2 Internal Corridor Access
- Diagram B3 Open Plan Layout
- Diagram B4 Balcony Approach

Clause B11.4

Where a flat has three or more levels, at least two levels should each have an access to a protected exit.

Clause B11.5

An inner room, i.e. a room from which the only exit route is through another room, should not be acceptable unless the following conditions are complied with:

(a) the occupant capacity of the inner room does not exceed 30;

(b) the exit route from the inner room does not pass through more than one other room;

(c) the distance from any point in the inner room to the exit of the room providing the access to the inner room, does not exceed the deadend travel distances stipulated in Clause B11.2;

(d) the room giving access to the inner room is not an area of special hazard and is under the control of the same occupant; and

(e) a vision panel, except in the case of a toilet, is located in the door or walls of the inner room. This may be substituted by alternative provisions, such as a fire alarm system audible in the room, which may serve to alert persons in the inner room of any danger from fire or smoke.

This clause does not apply to areas or rooms of a flat escaping through living/dining room or kitchen of the flat.

Clause B11.6

Where two or more exit doors are required to be provided under Table B2 for:

(a) a room; or

(b) a compartment or storey that is not partitioned into rooms, or the internal layout of partitions, fittings, etc. is not known when plans are submitted (i.e. open plan layout),

the disposition of exit doors should be arranged such that a line measured from any point, except those points in compliance with the provision under Clause B11.2, to one of the exit doors should form an angle of not less than 30° with a line measured from the same point to any other exit door. See Diagrams B2, B3 and B4.

Clause B11.7

For the purposes of Clauses B11.2 and B11.3, an alternative exit or different directions is not considered to be provided at a point unless a line measured from that point to one of the exits forms an angle of not less than 30° with a line measured from the same point to the other exit. See Diagrams B2, B3 and B4.

Subsection B12 - Discharge Value and Width of Required Staircase

Clause B12.1

The required staircases serving the storeys of a building above the ground storey should have a total discharge value of not less than the total occupant capacity of those storeys assessed in accordance with Subsection B4.

Clause B12.2

The required staircases serving the basements of a building should have a total discharge value of not less than the total occupant capacity of those basements assessed in accordance with Subsection B4.

Clause B12.3

The discharge value of a required staircase in a non-sprinkler protected building should be assessed from Table B3 according to the width of the required staircase and the number of storeys it serves.

Clause B12.4

The discharge value of a required staircase in a sprinkler protected building should be assessed from Table B4 according to the width of the required staircase and the number of storeys it serves.

Clause B12.5

For the purpose of this Subsection, sprinkler protected buildings are those where the whole building is protected by sprinklers complying with the Code of Practice for Minimum Fire Service Installations and Equipment. Where part of a building is protected by sprinklers and other part is not and the required staircases serving these different parts are not separated, the discharge value of such required staircase should be assessed from Table B3.

Table B3: Discharge Value of a Required Staircase in a Non-Sprinkler Protected Building

No. of storeys served	Width of required staircase					
	1050mm but under 1200mm	1200mm but under 1350mm	1350mm but under 1500mm	1500mm but under 1600mm	1600mm but under 1700mm	1700mm to 1800mm
1	210	240	270	300	320	340
2	242	278	315	351	377	402
3	274	316	360	402	434	464
4	306	354	405	453	491	526
5	338	392	450	504	548	588
6	370	430	495	555	605	650
7	402	468	540	606	662	712
8	434	506	585	657	719	774
9	466	544	630	708	776	836
10	498	582	675	759	833	898
Each additional storey add	32	38	45	51	57	62

Note:

1. The discharge value of a required staircase having a width of more than 1800mm may be obtained by using linear projection from the table.

Table B4: Discharge Value of a Required Staircase in a Sprinkler Protected Building

No. of storeys served	Width of required staircase					
	1050mm but under 1200mm	1200mm but under 1350mm	1350mm but under 1500mm	1500mm but under 1600mm	1600mm but under 1700mm	1700mm to 1800mm
1	420	480	540	600	640	680
2	452	518	585	651	697	742
3	484	556	630	702	754	804
4	516	594	675	753	811	866
5	548	632	720	804	868	928
6	580	670	765	855	925	990
7	612	708	810	906	982	1052
8	644	746	855	957	1039	1114
9	676	784	900	1008	1096	1176
10	708	822	945	1059	1153	1238
Each additional storey add	32	38	45	51	57	62

Note:

1. The discharge value of a required staircase having a width more than 1800mm may be obtained by using linear projection from the table.

Clause B12.6

The discharge value of a required staircase where the direction of exit is upwards should be assessed from Table B3 for non-sprinkler protected building or Table B4 for sprinkler protected building, as the case may be, and multiplied by a reduction factor of 0.8.

Clause B12.7

The discharge value of a scissors staircase without any intermediate landing between 2 consecutive floors should be assessed from Table B3 for non-sprinkler protected building or Table B4 for sprinkler protected building, as the case may be, and multiplied by a reduction factor of 0.7.

Subsection B13 - Doors in Relation to Exits

Clause B13.1

Every door across an exit, or into an exit route from a room or storey with the occupant capacity exceeding 30, should:

(a) open in the direction of exit; or

(b) if constructed to open both ways, have a transparent upper view panel.

Clause B13.2

If it is necessary to secure an exit door against entry from outside, the locking device should be of the type that is capable of being readily opened from the inside without the use of a key. When a push plate, push bar or a single action lever handle is installed, it should not be encased. An electrical locking device for an exit door across a common area of a building should be capable of automatic release upon actuation of a fire alarm signal by the fire service installation(s) designed and installed to the satisfaction of the Director of Fire Services. Upon power failure, the electrical locking device should be released automatically. Local manual override should also be provided from the inside near the exit door for people to gain access to an exit route without the use of a key. In the case of a door to a required staircase or a protected lobby of the required staircase, the security mechanism should not affect compliance with the requirements in Clause B8.2.

Clause B13.3

Every door opening on to a landing between flights of a required staircase should not at any point of its swing, reduce the effective radius of the landing to less than the width of the required staircase.

Clause B13.4

Exit door from a room or storey having an occupant capacity in excess of 3 persons should not be less than 750 mm in width. In the case of a double leaf door, no leaf of such door should be less than 600 mm in width and, where the meeting stiles are rebated, a checking device to control the closing order of the doors should be installed. Such checking device should ensure that both leaves of door are closed in the correct order and position.

Clause B13.5

Every door giving access to a protected lobby from a required staircase enclosure or from a storey should be provided with a transparent upper view panel of the required FRR.

Clause B13.6

In the case of factories and industrial undertakings that are required to be notified to the Commissioner for Labour, i.e. notifiable workplace:

(a) every exit door leading out of a notifiable workplace, and the doors of every room in a notifiable workplace in which 10 persons or more are employed, should be constructed so as to open outward; and

(b) every exit door leading out of a notifiable workplace should be fitted with an effective self-closing device.

Clause B13.7

Every door to a required staircase or a protected lobby of the required staircase should comply with the following requirements:

(a) The self-closing mechanism should not be capable of allowing a check action to hold the door open; and

(b) Appropriate notices should be fixed to both sides of the doors to remind building users that the doors should normally be kept closed.

Clause B13.8

Every door across an exit or into an exit route from a room, except a door to a required staircase or a protected lobby of the required staircase, if required to be self-closing, may be held open in normal times provided that the hold-open device can be manually and, in the event of power failure, automatically release to allow the door to become self-closing again. The device should be capable of releasing the door automatically upon actuation of a fire alarm signal by the fire service installation(s) or smoke detectors in the form of automatic actuation devices, which should be provided on both sides of the door, designed and installed to the satisfaction of the Director of Fire Services.

Subsection B14 – Construction of Required Staircases

Clause B14.1

Every required staircase should be constructed in accordance with the requirements in Part C.

Clause B14.2

Required staircases should be arranged in straight flights without winders, each flight should consist of not more than 16 risers nor less than 2 risers. Treads should be not less than 225mm wide, measured clear of nosings and risers should be not more than 175mm high. Provided that:-

(a) the treads in Use Classification 5a should be not less than 280mm wide and the risers should be not more than 150mm high; and

(b) the treads in Use Classification 5b should be not less than 250mm wide and the risers should be not more than 150mm nor less than 75mm high.

Clause B14.3

Landings should be provided at the top and bottom of each flight not less in width and length than the width of required staircase, and no exit door should be at any part of its swing reduce the effective width or effective radius of such landing as the case may be.

Clause B14.4

Every required staircase should have a clear width of not less than that required by Clause B8.1 and a clear headroom of not less than 2000mm.

Clause B14.5

No required staircase should exceed 1800mm in width. If a wider staircase is required, it should be divided by a central handrail into separate sections such that each section should be not less than 1050mm but not more than 1800mm in width.

Clause B14.6

A handrail should be provided on each side of the required staircase. Every such handrail should:

(a) be at a height not less than 850mm nor more than 1100mm;

(b) not project so as to reduce the clear width of the required staircase by more than 90mm, for each handrail; and

(c) be continuous throughout each flight, but need not be carried round a landing or half landing except in the case of a premises of Use Classification 5a.

Subsection B15 - Ramps

Clause B15.1

The gradient of every ramp forming part of an exit route should not at any part be steeper than 1:12.

Subsection B16 – Lift Lobbies

Clause B16.1

Every lift lobby should have access, without any obstruction and lockable door, to an exit route. Such access should be available at all times to any person who may come out from a lift car to the lift lobby. The provision of a direct intercom link backed up by emergency power for at least 2 hours connecting a lift lobby with the management office of the building will be accepted as an adequate alternative.

Subsection B17 - Basements

Clause B17.1

Every basement should have not less than two exits, except a basement:

(a) the floor of which is not more than 3000mm below the level of the ground to which the exit serving such basement gives access;

(b) the area of which does not exceed 150m^2; and

(c) which is used solely for a lavatory or plant room.

Clause B17.2

Sufficient directional and exit signs to indicate the direction of exit should be displayed within each required staircase serving the basement. Such signs should comply with the Code of Practice for Minimum Fire Service Installations and Equipment.

Clause B17.3

No required staircase serving the storeys of a building above the ground storey should be continued direct to a basement.

Clause B17.4

In the case of a basement, except a basement used solely as a lavatory, which is below the lowest ground storey and from which all the required exit routes discharge in an upward direction, at least one exit from each floor of the basement should serve that floor only and discharge independently of any other exit into an ultimate place of safety.

Clause B17.5

A protected lobby should be provided to every required staircase serving the basement, except for the required staircase provided with a pressurization system complying with the Code of Practice for Minimum Fire Service Installations and Equipment or it is an independent staircase complying with Clause B17.4.

Subsection B18 – Refuge Floors

Clause B18.1

Save as provided in Clause B18.5, refuge floors should be provided for all buildings exceeding 25 storeys in height above the lowest ground storey, at not more than 20 storeys and 25 storeys respectively for the buildings in Use Classification 6 and in other Use Classifications from any other refuge floor; or above the street or the ultimate place of safety. For the purpose of this clause, the number of storeys may exclude storeys which contain solely mechanical plants.

Clause B18.2

Every refuge floor, except that provided under Clauses B18.3 and B18.5, should comply with the following requirements:

(a) There is no occupied accommodation or accessible mechanical plant room, except fire services water tanks and associated fire service installation plant room, at the same level as the refuge floor;

(b) The net area for refuge should be not less than 50% of the total gross floor area of the refuge floor and should have a clear headroom of not less than 2300mm;

(c) The minimum dimension of the area for refuge should be at least 50% greater than the width of the widest required staircase passing through the refuge floor;

(d) The area for refuge should be separated from the remainder of the building in accordance with the requirements in Part C;

(e) The area for refuge should be open-sided above safe parapet height on at least two opposite sides to provide adequate cross ventilation; the open sides should comply with the requirements in the Part C;

(f) Any required staircase passing through a refuge floor should be discontinued at such level so that the exit route is diverted to pass over part of the refuge area before it is continued to exit downwards;

(g) Every part of the area for refuge should be provided with at all time with lighting of a horizontal illuminance at floor level of not less than 30 lux. The lighting can be a combination of natural and artificial light and should be backed up by an emergency lighting system that complies with the Code of Practice for Minimum Fire Service Installations and Equipment;

(h) A refuge floor should be provided with such fire service installation and equipment as may be required by the Director of Fire Services; and

(i) A refuge floor should be served by fireman's lift but not other lifts. The fireman's lift should not open onto the refuge floor in normal operation and the lift landing door at this level should be locked at all times until automatically released upon actuation of the fireman's switch.

See Diagram B5.

Clause B18.3

The main roof of a building may be regarded as a refuge floor for the purpose of Clauses B18.1 and B18.5 provided that:

(a) it should be of flat surface and should comply with the requirements in Part C;

(b) the net area for refuge should be not less than 50% of the gross floor area of a typical floor below the main roof;

(c) any required staircase serving the floors immediately below the main roof should be continued to give access to the main roof without any obstruction at all times;

(d) the minimum dimension of the area for refuge should be at least 50% greater than the width of the widest required staircase serving the roof; and

(e) every part of the area for refuge should be provided with at all time with lighting of a horizontal illuminance at floor level of not less than 30 lux. The lighting can be a combination of natural and artificial light and should be backed up by an emergency lighting system that complies with the Code of Practice for Minimum Fire Service Installations and Equipment.

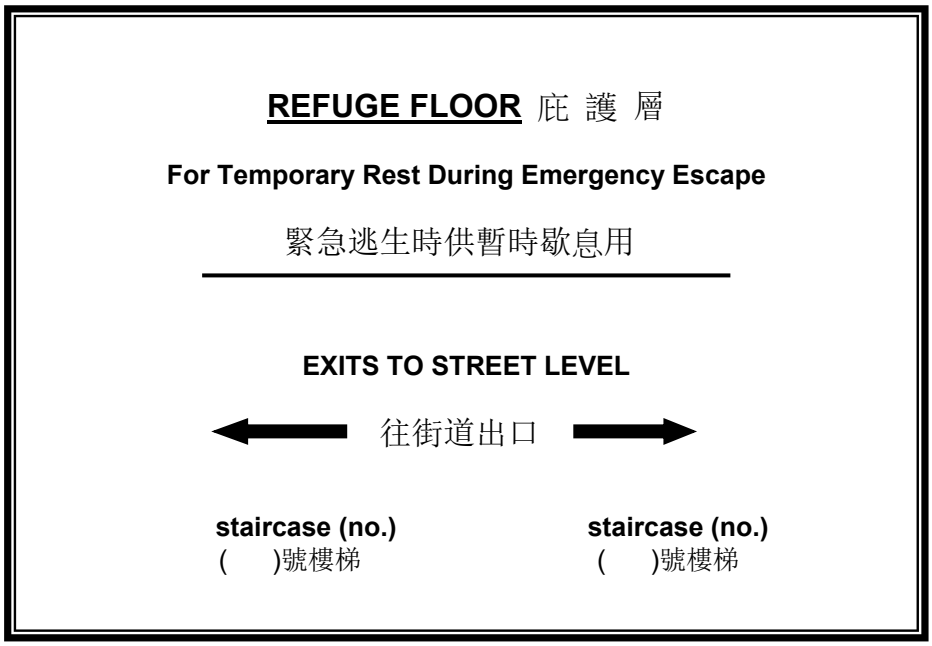
Commentary

It is not acceptable for an internal staircase from a private flat to access directly to a portion of the main roof which has been designated as the required refuge area. The remaining roof area (not designated as refuge area) may be used as a private roof provided that no structures other than a stairhood is allowed. Such area should be separated from the refuge area by a solid fence wall of not less than 1.5m high. Any stairhood to be erected within 1.8m of the refuge area should have an FRR of not less than -/60/60. In addition, plant rooms adjoining the refuge area should have an FRR of not less than -/120/120 and any unprotected opening of the plant rooms should be located not less than 1.8m away from the refuge area.

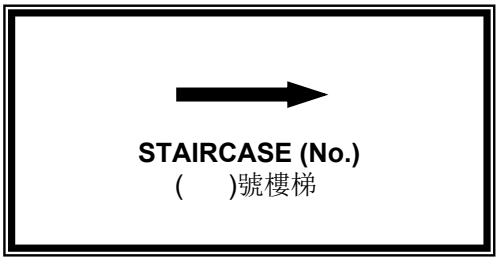
At each refuge floor, notices and signs should be provided in the following manner:

(a) A sign indicating the required staircase number and a sign indicating the entrance to the refuge floor should be displayed inside each required staircase at a position immediately before entering the refuge floor at a height of 1500mm above the landing or the step immediately below the required staircase;

(b) A notice in rectangular shape and in the following form should be displayed at a position immediately after entering the refuge floor from each required staircase at a height of 1500mm above the floor level;



(c) Sufficient directional signs in the following form should be displayed at appropriate positions at the refuge floor at a height of 1500mm above the floor level, to indicate the direction of travel in order to enter the respective required staircase;



(d) All signs and notices provided under (a), (b) and (c) should: -

(i) be in English and Chinese;
(ii) be illuminated by a light on two systems as the lighting referred to in Clause B5.5;
(iii) have words and characters in block letters not less than 50mm high in white colour on a background in green or the words and characters in green on a background in white or black; and
(iv) not be easily defaced or damaged;

(e) Appropriate notices in English and Chinese in words and characters not less than 25mm high should be provided in a conspicuous part at the main entrance of the building to indicate where the refuge floors are situated.

Clause B18.5

A domestic building or a composite building exceeding 25 storeys but not exceeding 40 storeys in height above the lowest ground storey is not required to comply with Clauses B18.1 and B18.2 if the main roof of the building is designed as a refuge floor complying with the requirements in Clauses B18.3 and B18.4.

Commentary

A Performance Requirement has been developed in Part A to provide guidance for the safe evacuation from tall buildings. The following aspects should be complied with:

(a) provide means of escape for building occupants - Means by which all occupants can escape from a building should be provided.

(b) allow for occupants to take a short rest, whilst evacuating - It is recognised that persons walking many flights of stairs need to take a short rest during the evacuation.

(c) minimise the threat of smoke within required staircases – required staircases should be designed to prevent smoke clogging and should provide a tenable environment for evacuation.

(d) provide an area for firefighting staging activities – Space should be required to provide a means for firefighting staging activities.

Subsection B18 provides the Deemed-to-Comply provisions to comply with the Performance Requirement stipulated in Part A.