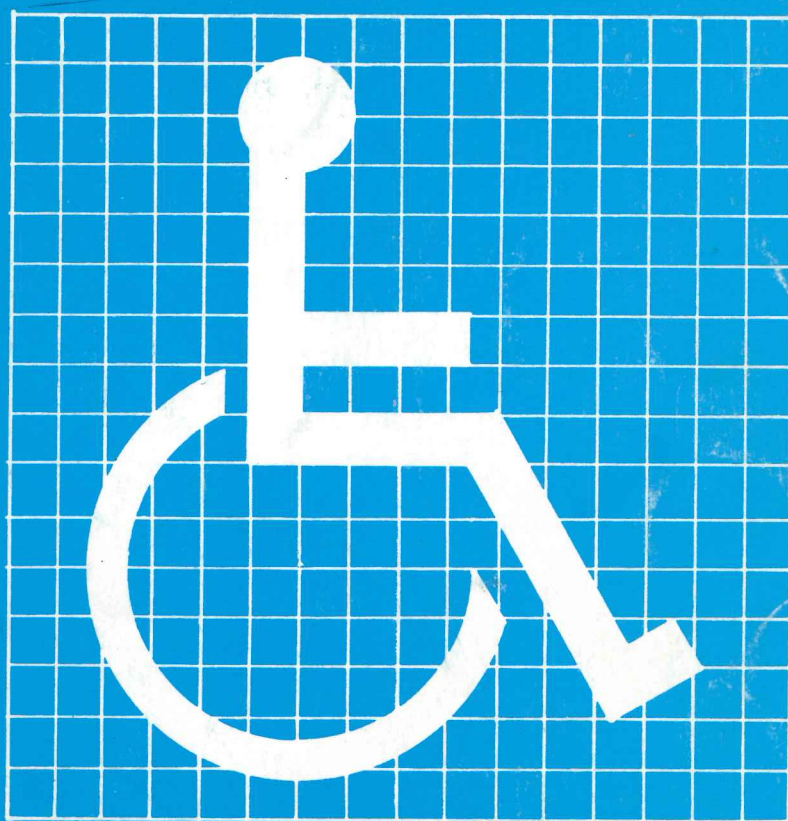


**DESIGN MANUAL
ACCESS FOR THE DISABLED
1984**



**BUILDING DEVELOPMENT DEPARTMENT
HONG KONG GOVERNMENT**

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FOREWORD

A code of practice on design requirements for handicapped people, which was only advisory, was issued in June 1976 to all Authorised Persons, registered Structural Engineers, interested Government Departments, and the Hong Kong Council of Social Service for distribution. Government agencies were requested to follow the Code and incorporate facilities for the disabled where practicable. The HKIA recommended its members to adopt the Code, as far as practicable, for public and publicly financed projects and to adhere to it as far as possible for all privately financed buildings.

In February 1978, after experiencing difficulties in the voluntary implementation of the Code particularly in the private sector, the HKIA recommended that compliance with the Code should be made obligatory after improvements had been considered.

In September 1978, the Director of Building Development set up a committee to undertake a review of the Code of Practice which in December 1981 was accepted by ExCo subject to it being possible to devise an element of compensation with restricted application to the access to a building and awarded by way of a bonus plot ratio. Investigations showed that a compensation formula was not practicable and the Code of Practice was approved by ExCo in December 1983.

Upon recommendations from the Attorney General's Chambers the obligatory design requirements in the code have been enacted as amendments to various building regulations under section 38 of the Buildings Ordinance (Chapter 123) by ExCo in October 1984.

This design manual incorporates the legislation which affects access for the disabled and makes recommendations in respect of other matters which will greatly assist their mobility.

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CHAPTER 1

INTRODUCTION

1.1 This Design Manual supersedes the Code of Practice—Access for the Disabled—published by the Public Works Department in 1976.

The Design Manual incorporates amendments to the following items of legislation made under section 38 of the Buildings Ordinance (Chapter 123)

Building (Planning) Regulations
Building (Administration) Regulations
Building (Construction) Regulations
Building (Lifts) Regulations
Building (Standards of Sanitary Fitments, Plumbing, Drainage Works and Latrines) Regulations

effected by

Building (Planning) (Amendment) Regulations 1984
Building (Administration) (Amendment) (No. 2) Regulations 1984
Building (Construction) (Amendment) Regulations 1984
Building (Lifts) (Amendment) Regulations 1984
Building (Standards of Sanitary Fitments, Plumbing, Drainage Works and Latrines) (Amendment) Regulations 1984

These amendments incorporate the mandatory requirements relating to access for the disabled.

These regulations shall apply in relation to buildings in respect of which application for the approval of plans or commencement of any works is submitted in accordance with the Building (Administration) Regulations on or after 1 August 1985.

Regulation 1(2) Building (Planning) (Amendment) Regulations 1984

In addition, recommendations are made as to other facilities which will ensure increased mobility, especially for the less severely disabled.

1.2 The publication of these regulations and this Design Manual rests on the belief that a disabled person has the same rights as any other individual—the rights to medical and rehabilitative services, education, housing, employment, transport, cultural, sports and leisure activities which will hasten the process of his social integration or reintegration (U.N. Declaration on Rights of Disabled Persons December 1975).

1.3 Barriers in the form of steps, doorways and the like are undoubtedly the greatest hindrance to the exercise of these rights not only for disabled people but for the elderly, for pregnant women, and indeed for a broad spectrum of the community. It is generally acknowledged that there is no clearly defined line between the able-bodied and the disabled since those who today are fit and well may, at some time in the future, suffer an accident or disabling disease. It is estimated that most people suffer some temporary disablement during their lifetime.

1.4 Architects with a little forethought and initiative can, by designing barrier-free buildings, help considerably towards the greater independence of the disabled in their everyday lives and their integration with the rest of the community. It should not be considered abnormal, or a special concession, to cater for the needs of the disabled when designing buildings for public use. The implementation of these standards will not detract from the normal use of buildings by those who are not handicapped, but will make buildings more accessible and safer for all who use them.

1.5 In order to ensure that in the future individual rights can be adequately transformed into practical reality, certain requirements have been made mandatory for all buildings except those listed as exempted or partially exempted in Chapter 3. However, compliance with these regulations may have practical difficulties in that some buildings will have their own particular development constraints, and exceptions may be granted in special circumstances.

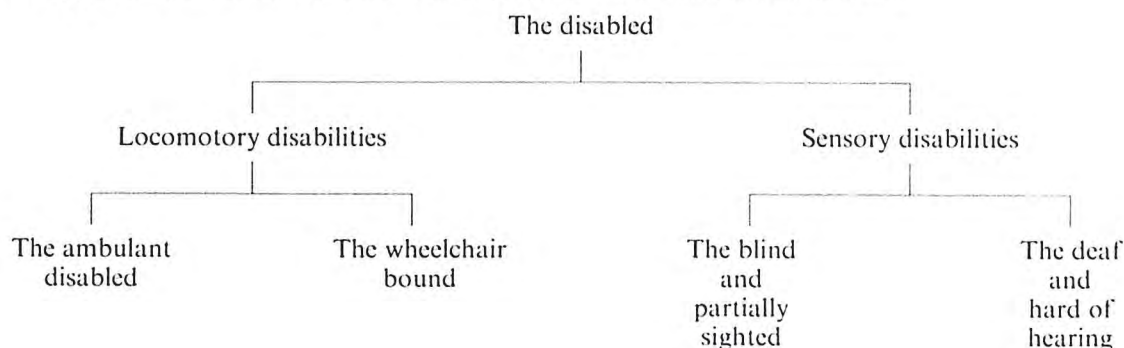
1.6 People who served on the committee which reviewed the original Code of Practice, Access for Disabled, and made the proposals resulting in the above legislation and the production of this Design Manual are listed in Appendix I.

CHAPTER 2

USE OF CODE

2.1 This Design Manual details the architectural provisions which should be incorporated in new buildings to make them as convenient as possible for the disabled to use. Requirements which are essential to achieve the purpose have been made obligatory by legislation and are in bold print and requirements which are desirable have been included as recommended requirements.

2.2 The types of disablement for which this Manual caters are indicated as follows:



2.3 For the purpose of the regulations, the term “disabled persons” is defined as follows:

“disabled persons” means persons who on account of injury, disease, or congenital deformity, are substantially handicapped in walking.

Building (Planning) Regulation 2 (Amended 1984)

2.4 For the purpose of the Design Manual other terms used are defined as follows:

The disabled The disabled are those people who, as a consequence of physical disability or impairment, may be restricted or inconvenienced in their use of and access to buildings because of:

- (a) the presence of physical barriers, such as steps or doors which are too narrow for wheelchairs; and
- (b) the lack of suitable facilities such as staircase handrails or grab bars beside W.C.s.

Locomotory disabilities People with locomotory disabilities are those with disabilities which affect mobility, i.e. impairment of the trunk, lower limbs, or the trunk and lower limbs. People who have impaired function in one or both upper limbs are manipulatory disabled. Many disabled people with impaired lower limbs also have impaired upper limbs. To satisfy the requirements of such people account shall be taken simultaneously of the limitation imposed by both upper and lower limbs impairment.

The ambulant disabled Ambulant disabled people who are those are able, either with or without personal assistance, to walk on the level and negotiate suitably graded steps provided that convenient handrails are available.

The wheelchair bound The wheelchair bound are those people who are unable to walk, either with or without assistance, and who, except when using mechanised transport, depend on a wheelchair for mobility.

Whilst being unable to walk, a minority of people in this group are not strictly chairbound, inasmuch as they are able to stand on their feet whilst transferring to and from a wheelchair.

Sensory disabilities People with sensory disabilities are those who, as a consequence of blindness, deafness, impaired sight or impaired hearing may be restricted or inconvenienced in their use of buildings because of the lack of suitable facilities.

2.5 Design requirements specific to the locomotory disabilities are given in Chapter 4. They are listed under the headings: Access, ramped kerbs, Ramps, Steps and staircases, Handrails, Corridors, lobbies and paths, Doors, W.C. cubicles, Lifts, Signs and Miscellaneous recommended design requirements.

2.6 Design requirements are given in Chapter 5 for people with sensory disabilities. In anticipation of the difficulties in implementation, these requirements are not made mandatory. It is however recommended that provision should be incorporated in buildings to cater wherever possible for these disabilities.

CHAPTER 3
APPLICATION AND EXEMPTIONS

3.1 *Buildings to be planned for use by disabled persons*

72(1) Subject to paragraph (3), where a building is one to which disabled persons have, or may reasonably be expected to have, access, that building shall be designed to the satisfaction of the Building Authority in such a manner as will facilitate the access to, and use of, that building and its facilities by disabled persons.

(2) A building shall be deemed to be designed in accordance with paragraph (1) if its design complies with the requirements set out in Part I of the Third Schedule.

(3) The provisions of this regulation shall apply to the categories of buildings specified in the first column of Part II of the Third Schedule only to the extent specified in the second column thereof.

Building (Planning) Regulation 72 (added 1984)

THIRD SCHEDULE

DISABLED PERSONS

PART II

BUILDINGS WHERE LIMITED FACILITIES FOR THE DISABLED
ARE TO BE PROVIDED

Category of building	Extent of the application of regulation 72
1. Domestic buildings and the domestic parts of composite buildings.	Regulation 72 does not apply.
2. Schools.	Schools providing education for disabled persons.
3. Buildings which are a place of public entertainment.	1. The area of the main foyer. 2. The spectator level in the auditorium provided in accordance with item 10 of Part I and means of access thereto. 3. Toilets for the use of the public.
4. Public swimming pools, gymnasia, games halls and sports stadia.	The games areas including any swimming pool, changing rooms, toilets and other facilities open to the public, and the means of access thereto.
5. Hotels.	1. Public areas and means of access to them. 2. Rooms for disabled persons provided in accordance with item 11 of Part I and means of access thereto.
6. Government aided housing.	Those areas which are in common use by the resident thereof, and the means of access thereto.

“Place of public entertainment” means a place of public entertainment within the meaning of the Places of Public Entertainment Ordinance

*Building (Planning) Regulations
“Third Schedule”—Disabled Persons—Part II (added 1984)*

“Government aided housing” is any housing towards which Government has or has agreed to in the future make a contribution by way of subsidy on land, building costs or by agreeing to purchase or subsidise the purchase price on completion.

“Common areas” are those areas which are accessible to the public and all residents as opposed to private areas which are accessible only to the individual resident.

Wheel chair spaces in concert halls etc.

10(1) There shall be provided in the auditorium of every building which is a place of public entertainment a spectator level with one wheel chair space for every 400 or part of 400 seats in the auditorium.

(2) For the purposes of this item a wheel chair space is a rectangle of 760 mm by 1.37 m with a side of 760 mm being toward the stage, podium or screen.

Rooms for the disabled in hotels

11 An hotel with 100 guest rooms or more shall provide not less than 2 guest rooms with full facilities for the disabled and a further room for every complete 100 guest rooms in excess of 200.

*Building (Planning) Regulations
“Third Schedule”—Disabled Persons—Part I (added 1984)*

3.2 Recommendations as to facilities in exempted buildings

It is recommended that in those buildings and those areas of building exempted from the compliance with this code attention should be given to provision of the requirements and recommendations. In the case of residential buildings they should be designed so that they are capable of being converted to suit the needs of the disabled.

3.3 Implementation of legislation relating to Access for the Disabled

In order to satisfy the Building Authority that adequate provision has been made for access for the disabled, prescribed plans in respect of building works shall be submitted, viz:

Where regulation 72 of the Building (Planning) Regulations applies, plans showing in detail the provision made for disabled persons in accordance with that regulation.

Building (Administration) Regulation 8(1)(m) (amended 1984)

CHAPTER 4

DESIGN REQUIREMENTS FOR PEOPLE WITH LOCOMOTORY DISABILITIES

4.1 ACCESS

If the basic "human rights" for the disabled are to be achieved, this is the first and probably most difficult problem to be overcome. Access to buildings can be by motor vehicle, wheelchair, or on foot and the intention of this section is to ensure that the practical essential requirements for each of these methods of access to a building from the street are made possible.

It is important to remember that wheelchair users cannot be expected to manage any steps without help, while some disabled with walking difficulties, particularly those using crutches, may find steps difficult if not impossible, without assistance.

4.1.1 *Obligatory Design Requirements*

Initial Access

1(1) Access shall be provided from a point or points on the lot boundary to at least one entrance and to a lift complying with item 4 (See paragraph 4.9).

(2) Such access shall be free from steps, kerbs other than dropped kerbs, steep ramps, doors or doorways which would impede the passage of a wheel chair or other form of barrier which would prevent access by the disabled.

(3) When car parking is provided, at least one car parking space shall be accessible to the said entrance and lift.

*Building (Planning) Regulations
"Third Schedule"—Disabled Persons—Part I (added 1984)*

4.1.2 *Recommended Design Requirements*

Specific car park spaces should be reserved for the disabled and have ramped access from them to a lift which complies with paragraph 4.9.

4.2 RAMPS

The disabled, and particularly those using crutches, find steep ramps difficult, if not impossible, to use, especially while descending. Similarly, wheelchair users, who include the young and the elderly, have to propel themselves upwards by the strength of their arms and this becomes increasingly difficult for them with any increase in the gradient or length of ramp without intermediate level resting bays.

4.2.1 *Obligatory Design Requirements*

At changes in level other than when served by a lift or at kerbs there shall be a ramp. Ramps shall be designed as follows:

- (a) ramps shall be not less than 1.05 m wide;**
- (b) a space not less than 1.5 m square shall be provided at the head and foot of every ramp;**
- (c) where a ramp is at a gradient of 1 in 20 or steeper, a landing 1.2 m long shall be provided for each 10 m length of horizontal run or part thereof;**
- (d) any ramp with a rise greater than 200 mm, leading down towards an area where vehicular traffic is possible, shall have a railing across the full width of its lower end, not less than 1.5 m from the foot of the ramp;**
- (e) no ramp shall be at a gradient exceeding 1 in 12;**
- (f) all ramps shall be provided with handrails on both sides. Supports shall not cause an obstruction to a height of 700 mm above ramp level.**

*Building (Planning) Regulations
"Third Schedule"—Disabled Persons—Part I (added 1984)*

4.2.2 Recommended Design Requirements

- (a) Widths should be at least 1.20 m to enable a wheelchair to turn or preferably at least 1.50 m to allow 2 wheelchairs to pass.
- (b) Slopes should be reduced to a gradient not exceeding 1:20 as an ideal.
- (c) Handrails at two levels should be provided—the higher one for ambulant disabled and the lower one for wheelchair bound.
- (d) A kerb at least 50 mm high, or rail about 200 mm above ramp level should be provided to prevent wheelchairs from slipping over the edge.
- (e) Ramps should have non-slippery surfaces however raised traction strips should be avoided.

4.3 DROPPED KERBS

It is often very difficult, if not impossible, for the disabled, and particularly users of wheelchairs or crutches, to overcome sudden rises or falls in pavement levels. For this reason it is essential that these should be reduced by means of dropped kerbs as set out below.

4.3.1 Obligatory Design Requirements

3. Changes in level at kerbs shall be by a dropped kerb. Dropped kerbs shall be provided at pedestrian crossings and at each end of the footpath of a private street or access road. Kerbs separating footpaths or ramps from vehicular areas shall be dropped kerbs. Dropped kerbs shall be constructed as follows:

- (a) the length of dropped kerbs shall be not less than 1.2 m;
- (b) the pavement at dropped kerbs shall be ramped at a gradient of less than 1 in 6 and there shall be a space of not less than 800 mm wide at the back of the ramp;
- (c) kerbs adjoining dropped kerbs shall be ramped at a gradient of less than 1 in 6.

*Building (Planning) Regulations
"Third Schedule"—Disabled Persons—Part I (added 1984)*

The layout of dropped kerbs shall comply with figure 1.

4.3.2 Recommended Design Requirements

- (a) Dropped kerbs should be located so that users have an unobstructed view of traffic approaching from any direction.
- (b) Dropped kerbs should be provided where required and in conjunction with pedestrian crossings, which should include visible, audible and tactile crossing devices with traffic lights.
- (c) Ramps should have non-slippery surfaces and be cued by texture and colour contrasts however raised traction strips should be avoided.

4.4 STEPS AND STAIRCASES

The disabled in many cases find the use of staircases a slow and difficult process. The object of this section is to define the minimum requirements to enable the ambulant disabled to negotiate steps and staircases with reasonable facility.

4.4.1 Obligatory Design Requirements

The main staircase of every building which exceeds 1 storey in height shall

- 39(3)(c) be constructed with treads not less than 225 mm in width (measured at the centre of the flight) from the face of one riser to the face of the next riser and with risers not exceeding 175 mm in height;**
- (d) have not more than 16 steps in any flight without the introduction of a landing;**
- (e) be provided on one side at least with properly fitted handrails;**

Building (Planning) Regulation 39(3)

4.4.2 Recommended Design Requirements

- (a) Risers shall be vertical or with a receding face not exceeding 15 mm from the vertical, without a projecting nosing. Open risers should be avoided.
- (b) Treads and nosings should be in contrasting colours to eliminate visual confusion.
- (c) Risers should be reduced to 150 mm high and treads increased to 250 mm wide for greater ease of use.
- (d) Individual flights should not exceed 1.8 m total rise or 12 risers.
- (e) Winders and splayed steps should be avoided.
- (f) The top nosing of any flight should be not less than 300 mm from the point at which the adjoining wall returns. (See Fig. 2)
- (g) All steps and staircases should have handrails on both sides.
- (h) Both natural and artificial lighting should throw light towards and not down staircases, i.e. the full tread should be lit to a minimum level of 100 lux and not be partially in shadow.

4.5 HANDRAILS

The disabled often require handrails to enable them to use staircases and to pull themselves up inclines, check themselves on declines and to assist them in sitting down or getting up. For this reason it is essential that handrails are of the correct size, strength and shape and are conveniently located so that they can provide secure hand-grips for the disabled to take their entire weight when required.

4.5.1 Obligatory Design Requirements

9(1) Handrails to ramps and steps shall be fixed not less than 30 mm and not more than 50 mm clear of walls and additionally or alternatively other obstructions and with a clear height of 70 mm from the top of the bracket to the top of the handrail.

(2) The tops of handrails shall be at a height of not less than 850 mm or more than 1 m above nosing, floor or landing level.

(3) Handrails shall extend horizontally not less than 300 mm beyond the first and last nosings of every flight of steps or beyond the ends of a ramp.

*Building (Planning) Regulations
"Third Schedule"—Disabled Persons—Part I (added 1984)*

39(3) The main staircase of every building which exceeds 1 storey in height shall

(e) be provided on one or both sides with properly fixed handrails which, in section, shall be—

- (i) if tubular, not less than 38 mm and not greater than 50 mm in external diameter;**
- (ii) if rectangular, not less than 40 mm and not more than 50 mm wide with an overall depth, or depth to a deep groove, of not more than 50 mm; and**
- (iii) in any other case, such as to afford to the user thereto a grip analogous to that specified in the case of either tubular or rectangular handrails, whichever may be the more appropriate having regard to the shape of the section.**

Building (Planning) Regulation 39(3) (amended 1984)

Typical handrail sections are shown at Figure 3.

4.6 CORRIDORS, LOBBIES, PATHS

The object of this section is to enable a disabled person to have the same choice of full freedom of movement as any able-bodied person within a building or on external paths.

4.6.1 Obligatory Design Requirements

5. Space shall be allowed for manoeuvring wheel chairs in corridors, lobbies, paths and similar areas as follows:

- (a) areas shall have a clear width of not less than 1.05 m;
- (b) a space not less than 1.5 m square shall be provided at or within 3.5 m of every dead end;
- (c) any lobby in a corridor shall be not less than 1.2 m long excluding space for door swings;
- (d) a level area, extending not less than 1.2 m beyond the swings of the doors and not less than 1.5 wide shall be provided on both sides of every entrance which requires compliance:

Provided that this item shall not apply to lobbies which lead only to staircases.

*Building (Planning) Regulations
"Third Schedule"—Disabled Persons—Part I (added 1984)*

"Dead end" is a corridor, lobby or path where the means of exit for a disabled person is in one direction only.

61(3) A cover in a footpath to a channel for the carriage of surface water shall be flush with the path surface and any hole in such cover or between such cover and another shall not exceed 20 mm in one dimension.

*Building (Standard of Sanitary Fitments, Plumbing, Drainage
Works and Latrines) Regulation 61 (amended 1984)*

4.6.2 Recommended Design Requirements

- (a) Widths should be at least 1.20 m to enable a wheelchair to turn or preferably at least 1.50 m to allow 2 wheelchairs to pass. At right angle turns, inside corners should be splayed or rounded to at least 300 mm radius. This allows the wheelchair bound to pass anybody else on a path or in a corridor including another disabled person and to turn round or have access to the entry of any room, corridor or opening which is connected to it.
- (b) All corridors should have non-slippery surfaces.
- (c) Soft loose surfaces, such as gravel or stone, are hazardous and should be avoided.
- (d) Hazards at floor level, caused, for instance, by unnecessary projections or by unexpected changes in level should be avoided.

4.7 DOORS

This section notes the detailed requirements necessary to enable any disabled person, and those in wheelchairs in particular, to enter and leave any room anywhere easily and unaided.

The limitations imposed by the manoeuvrability of wheelchairs and the restricted reach of their users have not always been fully appreciated by designers.

In order not to inhibit any disabled person from visiting any other room or persons, it is necessary for *all* doors in a project (with very limited exceptions) to be made suitable for use by the disabled.

Whether a door opens in or out, and whether it is hinged on the corner or away from the corner, greatly affects the ability of the disabled to operate a door independently.

4.7.1 *Obligatory Design Requirements*

6. Doors for use by the disabled shall comply with the following specification:

- (a) doors, including where applicable one leaf of a pair of double doors, shall have a clear width of not less than 750 mm between the open door and opposite jamb or other leaf;
- (b) the unobstructed area adjacent to the door handle on the leading face of a single door shall not be less than 380 mm wide;
- (c) doors, if less than 380 mm from the corner of a room, shall swing from the side nearer that corner.

*Building (Planning) Regulations
"Third Schedule"—Disabled Persons—Part I (added 1984)*

The dimension of the minimum conforming door are shown at Fig. 4.

191 Where any doors for disabled persons are provided in accordance with regulation 72 of the Building (Planning) Regulations—

- (a) double-action self-closing doors shall have a check mechanism to prevent the doors swinging beyond the closed position and a transparent panel with a bottom edge not more than one metre and the top edge not less than 1.5 m above floor level;
- (b) door handles shall be not less than 900 mm and not more than 1.05 m above floor level, measured from the top surface of the grip; and
- (c) door thresholds shall not exceed 25 mm in height.

Building (Construction) Regulation 191 (added 1984)

4.7.2 *Recommended Design Requirements*

- (a) Spring closers to corridor doors should be adjusted to allow the door to be opened with a minimum of effort; pneumatic type door closers should be of a kind that are slow in closing, to allow the uninterrupted passage of a wheelchair.
- (b) Frameless glass doors should be avoided but if used should be prominently marked so as to make them visible.
- (c) External doors should be single-action and open outwards (to obviate high tension in spring closers to combat wind pressure).
- (d) Where doors are latched, lever-type handles should be used.
- (e) All doors which allow the passage of wheelchair traffic should have kickplates not less than 200 mm high fitted on the face which swing away.

4.8 *W.C. CUBICLES*

This section gives all the special requirements to enable a disabled person in a wheelchair to function as normally as possible within a w.c. cubicle without help from anyone else. In particular the space requirements are noted for a wheelchair user to turn and manoeuvre into position for frontal, side or diagonal transfer to and from the w.c. seat without outside help. A typical cubicle is shown at Figure 5.

4.8.1 *Obligatory Design Requirements*

Number of Water Closet Cubicles

7(1) The minimum number of water closet cubicles for use by the disabled on each floor level, or on that part of a floor level which is designed for access by the disabled, shall be one where the total number of water closets provided on that level is 20 or less and 2 where the number of water closets exceeds 20.

(2) When water closet cubicles for use by the disabled are accessible from a corridor, the number of such cubicles shall be based on the number of water closets on the floor level or that part of a floor level which is designed for access by the disabled.

(3) When water closet cubicles for use by the disabled are accessible through a room with multiple cubicles, the number of such cubicles for each sex shall be based on the number of water closets for each sex on the floor level or that part of a floor level which is designed for access by the disabled.

(4) The water closet cubicles required by this Schedule shall be regarded as included of the number of soil fitments required under the Buildings (Standards of Sanitary Fitments, Plumbing, Drainage Works and Latrines) Regulations and Part VII of the Education Regulations.

Location of Water Closet Cubicles

8(1) Water closet cubicles which comply with this schedule shall be situated in those parts of a building which also comply.

(2) Such cubicles shall be accessible—

- (a) directly from a public corridor which complies with item 5; (*See paragraph 4.6*) and
- (b) when situated within a room containing cubicles, through a clear space not less than 1.5 m square immediately in front of the cubicle to allow manoeuvrability or by direct approach where no turning of the wheel chair is necessary.

*Building (Planning) Regulations
"Third Schedule"—Disabled Persons—Part I (added 1984)*

Water closet cubicles for the disabled

8A Where any water closet cubicle for disabled persons is provided in accordance with regulation 72 of the Building (Planning) Regulations that water closet cubicle shall be not less than 1.5 m by 1.75 m in area and—

- (a) the cubicle shall have in it a water closet and a wash basin both suitable for use by the disabled;
- (b) no coin box shall be affixed to the door of the cubicle;
- (c) any door fastening shall be capable of being operated from the outside in the event of an emergency;
- (d) where high-level cisterns are used, the chain shall extend to not more than 1.35 m above floor level;
- (e) there shall be not less than 3 grab bars which shall be not less than 25 mm nor more than 50 mm in external diameter and shall be fixed not less than 30 mm clear of the walls; and
- (f) the grab bars and wash basin shall be capable of carrying a static load of 150 kg.

Building (Standards of Sanitary Fitment, Plumbing, Drainage Works and Latrines) (Amendment) Regulation 8A (added 1984)

4.8.2 Recommended Design Requirements

- (a) W.C. cubicles should where possible be accessible from a corridor so that they can be used by either sex with assistance from a member of the opposite sex if necessary.
- (b) Steps should be avoided for urinals. Wall hung urinals with a front rim no higher than 400 mm should be provided. Vertical grab rails should also be provided at a height of 1.2 m above floor level for the use of ambulant disabled.

4.9 LIFTS

This section elaborates the space and other needs which must be met so that a disabled person in a wheelchair can use a lift unaided, although there should also be room for an escort. The key points are the space for manoeuvring into and out of the lift car and the accessibility of the landing and lift car controls from a wheelchair.

4.9.1 *Obligatory Design Requirements*

4. Access shall be provided to every floor of the building by a least one lift having minimum internal car dimensions of 1.2 m by 1.1 m wide, with a clear door width when opened of not less than 750 mm.

*Building (Planning) Regulations
"Third Schedule"—Disabled Persons—Part I (added 1984)*

54. Where any lift for disabled persons is provided in accordance with regulation 72 of the Building (Planning) Regulations—

- (a) essential lift control buttons or switches shall be not less than 900 mm and not more than 1.2 m above the floor of the car; and**
- (b) handrails extending to within 150 mm of the corners shall be provided at the rear and sides of the car and such handrails shall be suitable for use by the disabled.**

Building (Lifts) Regulation 54 (added 1984)

4.9.2 *Recommended Design Requirements*

- (a) If sensing devices are not provided with lift controls, the dwell time of an automatically closing door should be at least 5 seconds and the closing speed should not exceed 0.25 m/s. The kinetic energy of the closing door should be specified at not more than 8 Joules.
- (b) To allow a wheelchair to be turned inside the lift the minimum dimensions should be 1.5 m by 1.4 m wide and the door width increased to 850 mm for greater convenience.
- (c) Where the number of lifts in a building exceeds 3, access shall be provided to every floor by at least one lift having minimum internal car dimensions of 1.5 m × 1.4 m with a clear minimum door width when opened of 850 mm.
- (d) A glazed panel should be provided in lift doors.

4.10 *SIGNS*

The architectural provisions incorporated in buildings for the disabled will serve no useful purpose if the disabled are not aware of the facilities specially made available for them. It is therefore very important that suitable signs are erected at prominent positions to show the exact locations of these facilities.

4.10.1 *Recommended Design Requirements*

- (a) Signs as shown in Fig. 7 shall be erected to indicate clearly the exact locations of facilities available for use by the disabled.
- (b) All signs indicating the location for facilities for the disabled shall be identified by the International symbol of access for the disabled (see Figure 6). The symbol shall be copied exactly. The wheel chair shall face the right except where the sign points left. The symbol shall be white on a blue background and be used for the following purposes:
 - (i) Identifying accessible entrance to buildings
 - (ii) Identifying accessible exits from building
 - (iii) Identifying manageable routes through buildings
 - (iv) Identifying useable vertical circulation facilities
 - (v) Identifying useable cloakroom facilities
 - (vi) Identifying reserved car parking places
 - (vii) Advertising the availability of special services in buildings
 - (viii) Advertising the arrangements made for disabled people to use building
- (c) Signs shall be the following sizes
 - Height 60 mm for doors
 - 110 mm for corridors
 - 200 mm for external useLength to be in multiple units of height.
- (d) Lettering shall be Helvetica (medium) using lower case letters except for initial capitals.
- (e) Corners of signs may be rounded to 10 mm, 20 mm or 30 mm radius respectively for the three sizes.
- (f) Chinese characters to be "Gai Sue" style.
- (g) Typical signs are shown in Figure 7.

4.11 MISCELLANEOUS RECOMMENDED DESIGN REQUIREMENTS

In addition to Sections 4.1 to 4.10, other miscellaneous design requirements as set out below are also recommended for compliance where practicable.

- (a) Light switches should be located not higher to the centre of the switch than 1.3 m above floor level.
- (b) Electric sockets should be located not lower to the centre of the socket than 500 mm above floor level.
- (c) Where public telephones are provided within a building, one on each accessible floor level should have its dial and handset not higher than 900 mm above floor level and with easy access thereto by wheelchair.
- (d) Nothing should project beyond 90 mm into any corridor, ramp, stair or means of access to a building below 2 m from floor level.
- (e) Manually operated gear (e.g. for windows) should be located not lower than 900 mm and not higher than 1.4 m above floor level.
- (f) Taps should have a minimum clearance to the nearest vertical surface of 38 mm and be easy to manipulate. For persons with hand limitations, lever action taps are preferred to screw down valves subject to the approval of the Water Authority. Spring loaded taps should be avoided.
- (g) Alarms systems should incorporate flashing red lights of not less than 60 W marked "FIRE" in 150 mm letters in English and Chinese at the centre of one wall in every room with a designated occupancy of over 200 and near the alarm bell. It is essential that these controls are not placed out of reach of a disabled person in a wheelchair. Controls for fire alarms, therefore, should not be higher to the centre of the button or switch than 1.2 m from floor level.
- (h) At least one of the counters in a bank or similar location should be not more than 730 mm in height.

CHAPTER 5

DESIGN REQUIREMENTS FOR PEOPLE WITH SENSORY DISABILITIES

5.1 *THE BLIND AND PARTIALLY SIGHTED*

Some special design requirements for the blind and partially sighted are set out below for compliance where practicable.

5.1.1 *Recommended Design Requirements*

- (a) Tactile floor signals including changes of material, colour or texture can all give useful warnings to the blind but must be consistently used throughout a building.
- (b) Very slight slopes up or down to rising or falling flights can sometimes give useful indication to blind people.
- (c) In order to assist the partially blind, no part of a building should have an illumination level below 100 lux.
- (d) To assist the partially blind to see more clearly, the illumination level for lift landings and lift car interiors should be not less than 150 lux.
- (e) In lift halls an audible indication of the arrival and direction of the lift should be incorporated.

5.2 *THE DEAF AND HARD OF HEARING*

Provisions which should be incorporated in buildings to meet the special needs of the deaf and hard of hearing where practicable are set out below.

5.2.1 *Recommended Design Requirements*

- (a) Any audible alarm or indicator should be coupled with a visual aid such as a flashing light; such lights should be placed in strategic positions in the public areas of the buildings.
- (b) For private offices without visibility to the public areas and occupied by deaf people, a flashing light signal should be provided, wired back to the normal fire alarm system.
- (c) In lift halls, an illuminated sign indicating the arrival and direction of the lift should be incorporated. A clearly visible indicator should be provided inside lift cars to indicate the direction of travel and the floor level at which the lift is situated. The illumination level for lift landings and lift car interiors should not be less than 150 lux.

COMMITTEE ON REVIEW OF CODE OF PRACTICE ON
DESIGN REQUIREMENTS FOR HANDICAPPED PEOPLE

Chairman :	Mr. Joseph Lei, J.P.	Government Architect Building Development Department
Secretary :	Mr. J. S. Hirst #	Architectural Office Building Development Department
Members :	Mr. K. B. O'Sullivan †	Building Survey Adviser Building Development Department
	Mr. D. N. Allen ‡	Buildings Ordinance Office Building Development Department
	Mr. S. C. Poon	Construction Branch Housing Department
	Mrs. E. G. White	Occupational Therapy Sub-department Medical and Health Department
	Miss P. S. Duncan §	Occupational Therapy Sub-department Medical and Health Department
	Mr. K. C. Ko *	Social Welfare Department
	Miss Stella Leung	Social Welfare Department
	Fr. John Collins, S.J., M.B.S.	Joint Council for the Physically and Mentally Disabled
	Mr. C. Haffner	Spence Robinson Architects Engineers
	Mr. Edward Ho	Hong Kong Institute of Architects
Secretary & Editor of Manual	Mr. C. J. King	Architectural Office Building Development Department

† Retired from Government service since July 1979

‡ Replaced Mr. K. B. O'Sullivan since July 1979

§ In place of Mrs. E. G. White during her leave from 3.4.1980 to 5.10.1980

* Replaced by Miss Stella Leung since July 1979

Retired from Government service since March 1984

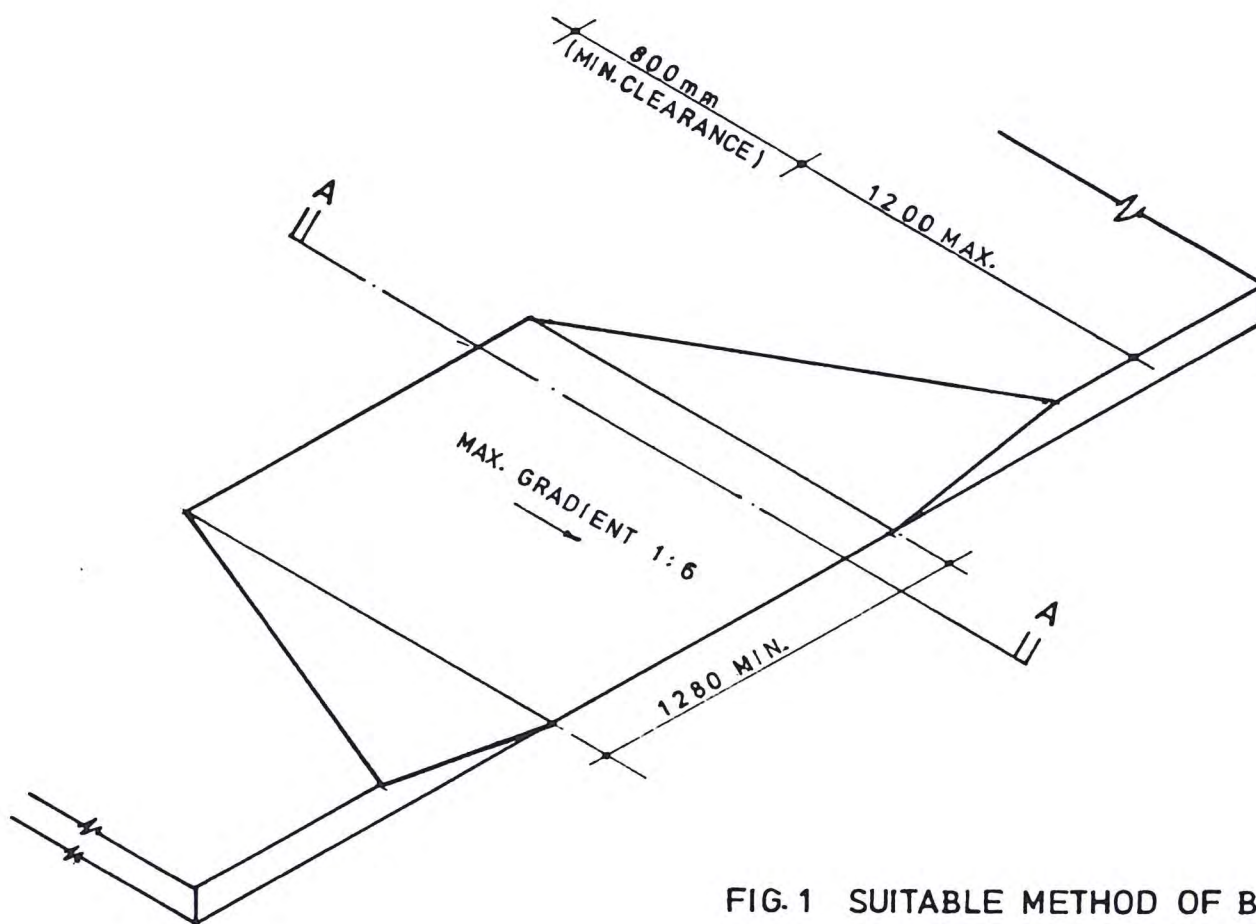
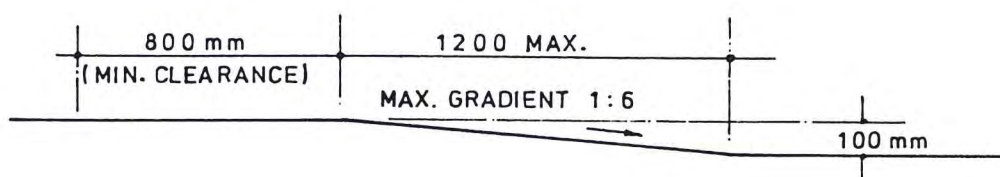


FIG.1 SUITABLE METHOD OF BLENDING PAVEMENT AND ROAD WAY SURFACES



SECTION A — A

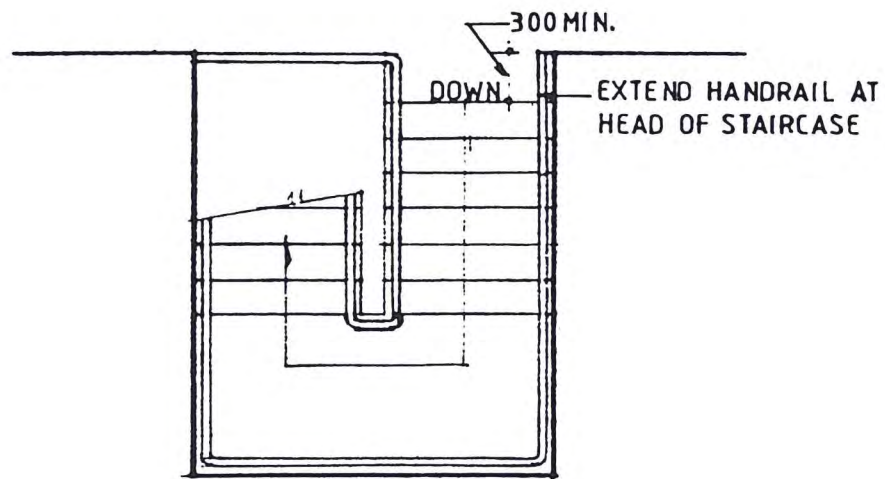


FIG. 2 EXAMPLE OF STAIRCASE PLAN
FOR AMBULANT DISABLED

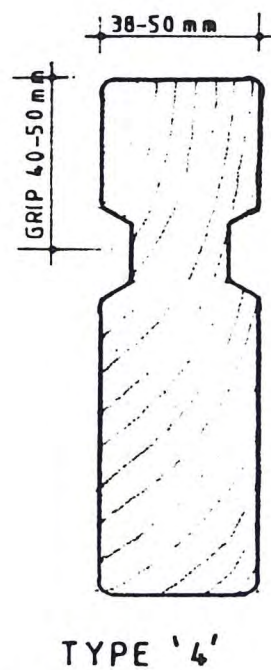
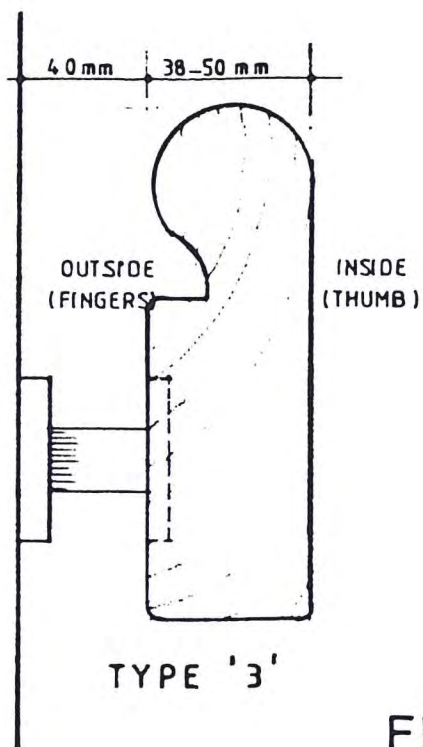
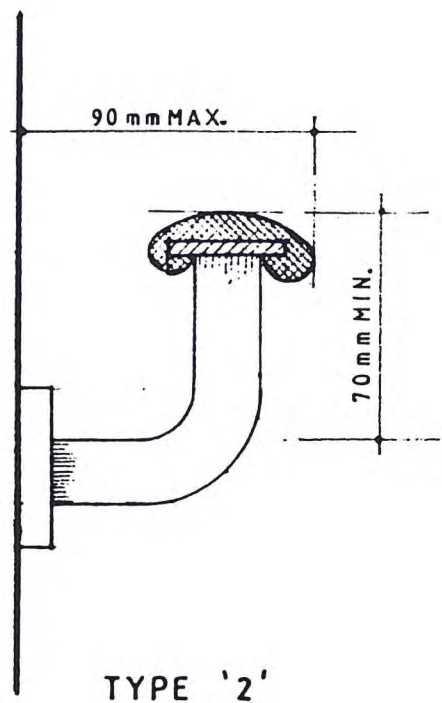
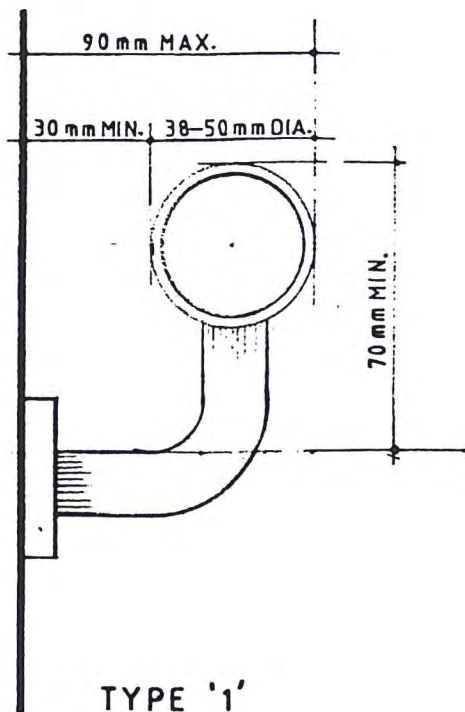


FIG. 3 HANDRAILS

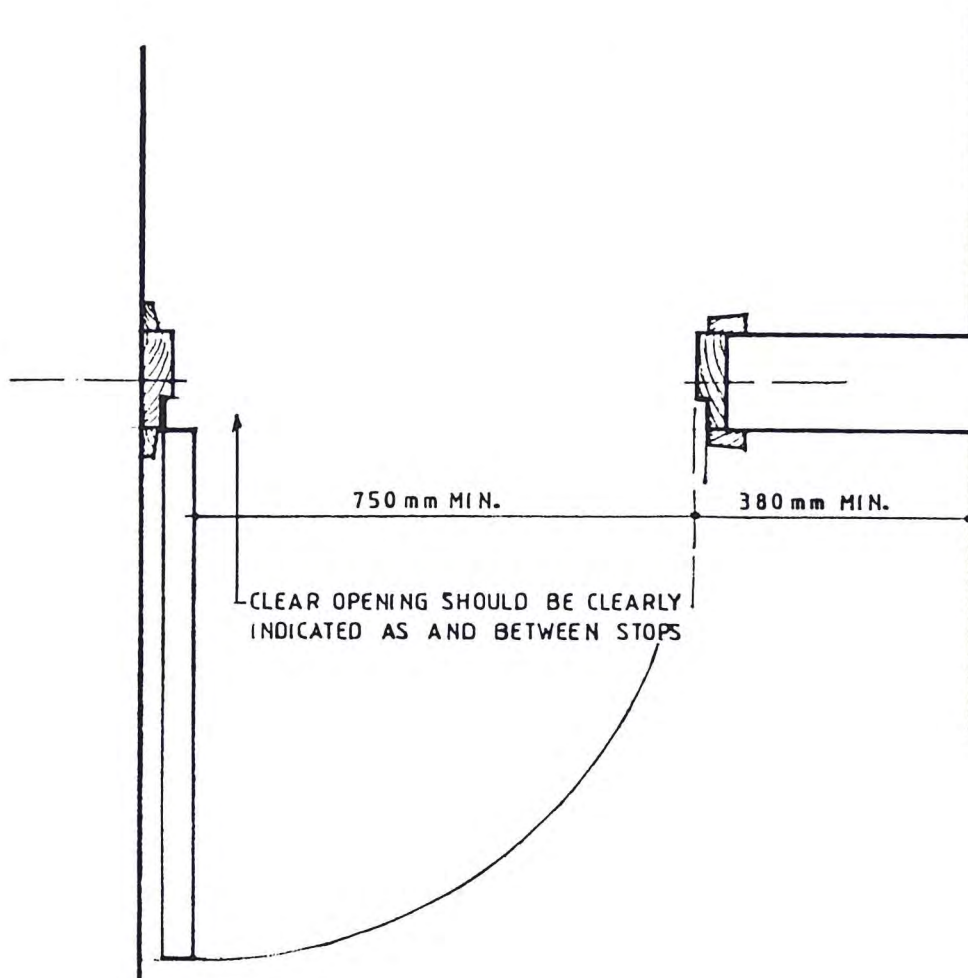
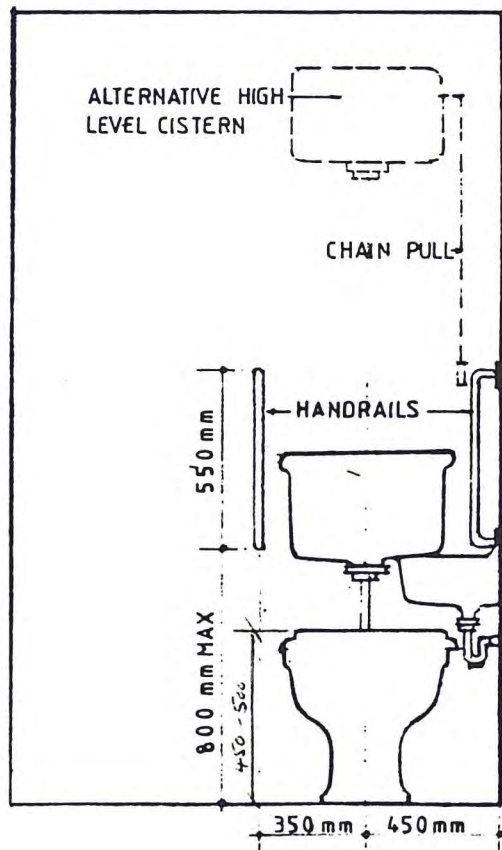
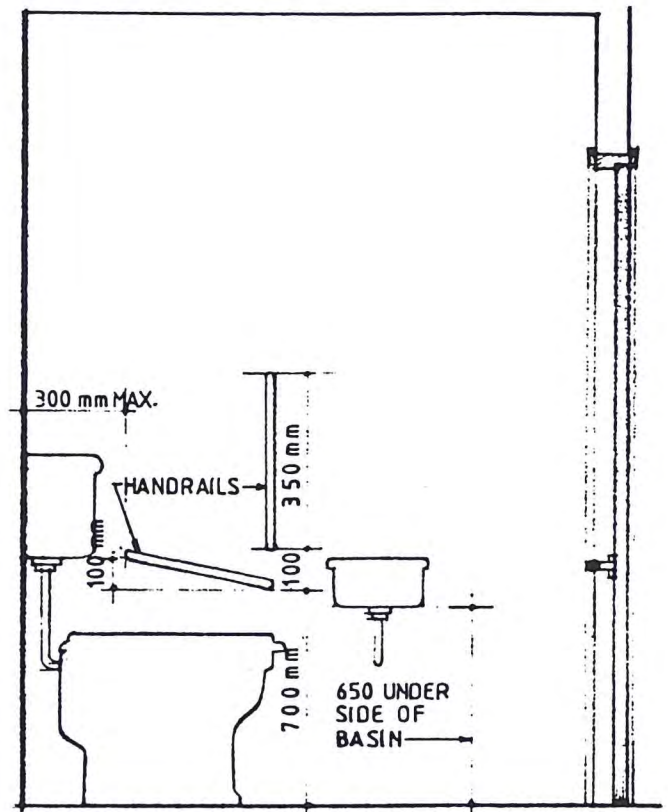


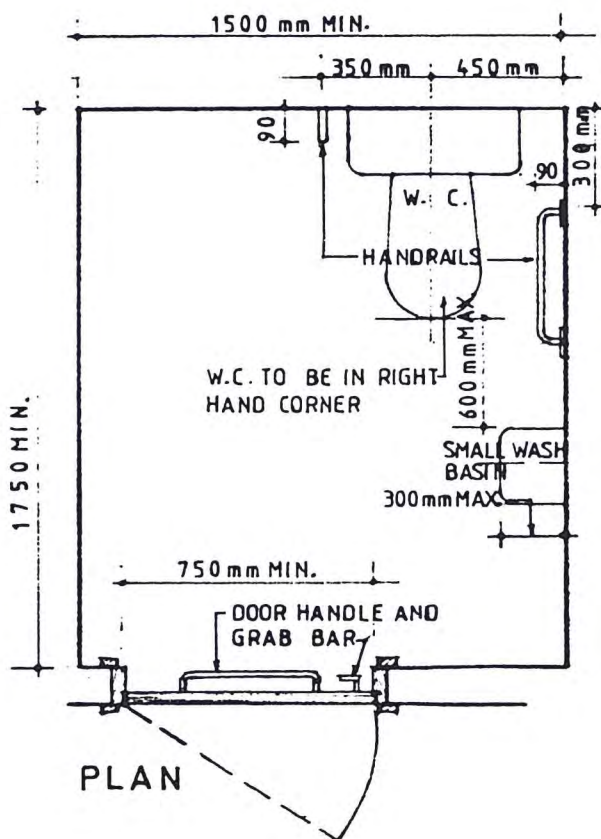
FIG. 4 PLAN OF DOORS SUITABLE FOR
WHEELCHAIR BOUND



CROSS SECTION



LONG SECTION



PLAN

FIG. 5
W.C. COMPARTMENT FOR
THE DISABLED

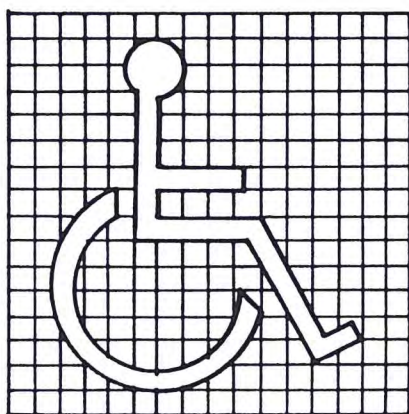
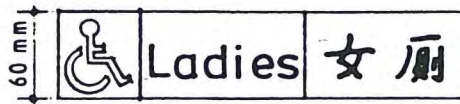
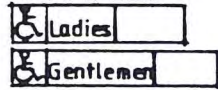


FIG. 6
PROPORTIONAL GEOMETRICAL LAYOUT
FOR INTERNATIONAL SYMBOL OF
ACCESS FOR THE DISABLED

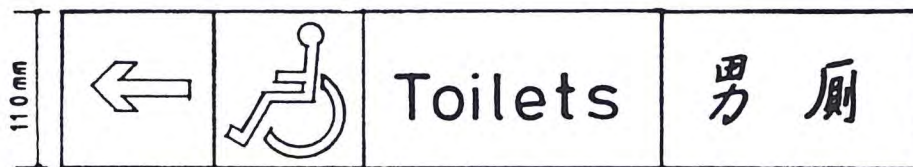
FOR DOORS - VIEWED AT 0-7M



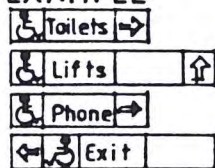
EXAMPLES



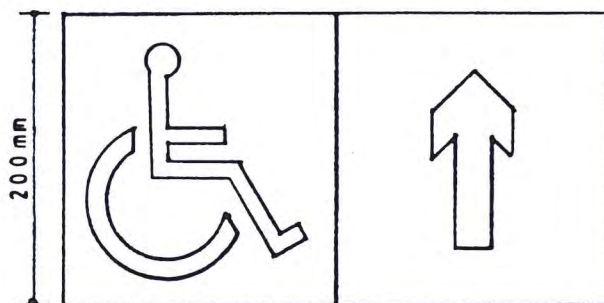
FOR CORRIDORS - HALLS - VIEWED AT 7-18M



EXAMPLE



EXTERNAL USE - VIEWED MIN. OF 18M



EXAMPLE

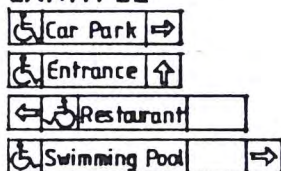


FIG. 7

