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I. Objectives

1. Objectives

(1) The Barrier-Free Design Standards for Facilities (hereinafter referred to as the “Guidelines”) at EXPO 2005, have been drawn up to help ensure the safety and comfort of all visitors, including the elderly and disabled, using the facilities on the site of the 2005 World Exposition, Aichi, Japan (EXPO 2005 Aichi). The Japan Association for the 2005 World Exposition (hereinafter referred to as the “Organizer”) shall design, construct and install all related facilities in compliance with the provisions presented herein. The Official Participants (hereinafter referred to as “Participants”) are also kindly requested to pay due consideration to said provisions.
Prior to the opening of EXPO 2005 Aichi, the Organizer, in collaboration with disabled persons, intends to conduct surveys to measure the barrier-free condition of site facilities and report on the results in future barrier-free guidebooks (official name to be finalized) and on the EXPO 2005 Web site.

2. Related Laws, Regulations and Ordinances

(1) The Law for Buildings Accessible to and Usable by the Elderly and Physically Disabled Persons (“Heart Building Law,” Law No. 44 of 1994)

(2) The Law for Promoting Easily Accessible Public Transportation Infrastructure for the Aged and the Disabled (“Barrier-free Transportation Law,” enforced on November 15, 2000).

(3) Prefectural Ordinance for People-friendly Community Development (Aichi Prefecture Ordinance No. 33 of October 14, 1994)

II. Barrier-Free Design Standards for Facilities

1. Applicability

The Guidelines shall be applicable to buildings and other structures to be constructed on the site of the EXPO 2005 Aichi, particularly sections of such buildings and structures used by visitors (hereinafter referred to as “visitor-contact facilities”), excluding exhibition zones of the EXPO 2005 Aichi to be completed by preserving their natural topography.

2. Principles of Visitor-contact Facilities Construction

Visitor-contact facilities on the EXPO 2005 Aichi site shall be constructed in compliance with criteria stipulated under subsequent headings. Matters not stipulated in the Guidelines shall conform to the provisions stipulated in the Heart Building Law, the Prefectural Ordinance for People-friendly Community Development and the Barrier-free Transportation Law.

3. Criteria Concerning On-site Visitor Movements

(1) Criteria under this heading concern visitor-contact facilities that are mainly located outdoors and serve as passages (hereinafter referred to as “site passages”); criteria concerning buildings are found under the subsequent heading.

(2) At least one entrance gate and one exit gate located in the gate zone and used by visitors for passage shall be 90 cm in effective width or wider; the ground surface for visitor passage shall be level (Fig. 1).

(3) Principal site passages shall be 180 cm in effective width or wider; the ground surface shall have a non-slip finish and be level. Openings of covers on drainage ditches located along passages shall be 10 mm wide or less (Fig. 3).

(4) Garden pathways that correspond to site passages shall have an incline of up to 1/20; passage sections with steeper incline shall be provided with a ramp (Fig. 5).

(5) Vertical visitor movement in site passages shall be effected in principle via ramps and elevators.

(6) Ramps (only those provided to mitigate surface height differences on site passages, and excluding loops, garden pathways, and sloped plazas; the same definition of “ramp” shall pertain throughout the Guidelines) shall conform to the following criteria, which are not, however, applicable to ramps provided at passage sections where elevators and stairs are provided in compliance with criteria under the present heading to ensure smooth visitor movements.

1) The ramps shall have an incline of up to 1/20 (or up to 1/12 indoors), be 180 cm in effective width or wider, and have a non-slip surface finish. Handrails shall be provided on both sides of the ramps, risers, fences or other necessary anti-fall devices where falls may occur (Fig. 5).

2) When the overall height differential of a ramp exceeds 75 cm, one landing shall be provided between two points on the ramp whose height differential does not exceed 75 cm. The starting and ending sections of ramp and landings shall have a level area of 150 cm or longer in the direction of movement (Fig. 5).

3) Ramps shall be straight in principle; when curves are unavoidable, sufficient consideration shall be given to prevent falls by devising necessary preventive measures.
4) Elevator structure shall fulfill the “guidance criteria” of the Heart Building Law, in default of which it shall fulfill the “basic criteria” of the same Law (Fig. 7).
5) Stairs shall be 150 cm in effective width or wider, and be provided with handrails on both sides; in principle, the riser shall not exceed 16 cm, and the tread shall be 30 cm or longer. However, these requirements shall not pertain to stairs provided along with elevators and ramps in conformity with the criteria under this heading, or when smooth visitor movement is ensured by means other than stairs. The tread shall have a non-slip finish and be clearly distinguishable from the riser by a color scheme, etc.; the nosing shall not protrude. When a stairway has an incline of 1/4 or greater and is 400 cm or wider in effective width, a handrail shall be provided in the middle (Fig. 6).
7) When the overall height difference of a stairway exceeds 300 cm, one landing shall be provided between two points on the stairway whose height differential does not exceed 300 cm. The landing shall have a depth of 150 cm or more and shall be level (Fig. 6).
8) Handrails along stairs and ramps shall in principle have two rails at a height of about 65 cm and 85 cm from the floor surface (or ground surface, if outdoors; the same definition of “floor surface” shall pertain hereafter). When single-rail handrails must be used, the rail shall be approximately 75 - 80 cm from the floor/ground surface (Fig. 6).

4. Rules concerning Visitor-contact Facilities

(1) At least one of the entrances and exits of visitor-contact facilities (excluding lavatories; this exclusion shall pertain hereafter) shall be 120 cm in effective width or wider when the floor area of visitor-contact facilities served by these entrances/exits is 500 m^2 or larger, and 90 cm or wider otherwise.

(2) The entrances and exits to rooms inside the facilities shall be each 90 cm in effective width or wider when the floor area of the visitor-contact facilities served by these entrances/exits is 200 m^2 or larger, and 80 cm in effective width or wider otherwise.

(3) When doors are provided (excluding doors permanently left open or operated by facility controllers; this exclusion is valid hereafter), consideration shall be given to facilitating passage by visitors in wheelchairs; by, for example, using built-in mat-type doors, sensor-operated automatic sliding doors etc.

(4) Necessary safety measures shall be devised for doors with a transparent front to prevent collision. The floor surface where visitor passage occurs shall be level.

(5) Visitor passages in visitor-contact facilities (including at least one outdoor passage used for entry into and exit from such buildings) and hallways (hereinafter referred to as “facility passages”) shall be level.

(6) Facility passages that serve as principal visitor routes shall be 180 cm in effective width or wider; other facility passages shall be 140 cm in effective width or wider. However, passages limited to one-way visitor movement or designed to provide a widened section at intervals of no longer than 50 m to allow two wheelchairs to pass at the same time may be 120 cm or wider.

(7) In site facilities with multi-level visitor routes, wheelchair routes shall be secured with ramps, elevators and the like, along ordinary visitor routes.

(8) Ramps with incline 1/15 or below (or 1/12 or below indoors) shall be 180 cm in effective width or wider, and surfaced with a non-slip finish. Ramps provided next to steps may be 120 cm in effective width or wider. Handrails shall be provided on both sides of the ramps, risers, fences or other necessary anti-fall devices.

(9) When the overall height differential of a ramp exceeds 75 cm, one landing shall be provided between two points on ramps whose height differential does not exceed 75 cm. The starting and ending sections of a ramp and landings shall have a level area of 150 cm or longer in the direction of movement.

(10) Elevators and stairs shall fulfill the same criteria as mentioned under the preceding heading.

(11) Facilities with spectator seats (hereinafter referred to as "spectator facilities") shall provide a number of reserved seats for wheelchaired visitors that are easily accessible from the facility's entrance/exit doors (only those 90 cm effective width or wider). The minimum number of such seats shall be obtained by multiplying the total number of seats in the facility by 1/200 (minimum number shall be 10, if number thus obtained exceeds 10). The floor surface of such seats and adjacent sections shall be horizontal and level, with a non-slip finish. Aisles in spectator facilities accessible to visitors in wheelchairs shall be 90 cm in effective width or wider and be level.

(12) Necessary anti-damage measures, such as protective boards, shall be devised to protect parts of facilities prone to possible damage by contact with wheelchairs.

5. Rules concerning Guidance for the Visually Impaired

(1) Foot guidance panels for the visually impaired shall be laid out on the floor of site and facility passages; however, this requirement shall not apply when other measures are taken to enable visually impaired visitors to smoothly reach a place where information service is available concerning the site or the use of respective buildings, or when full-time staff's personal assistance or use of special equipment are in place to offer subsequent guidance without difficulty.

(2) Foot guidance panels or equivalent devices shall be laid out continuously.
Foot guidance panels shall also be laid out on the floor of indoor passages in sections adjacent to stairs, ramps, elevators and escalators and the like.

(3) Wall surfaces along principal passages shall be free of protrusions; when protrusions are unavoidable, necessary measures shall be devised to ensure safe passage of the visually impaired.

6. Criteria concerning Lavatories

(1) Lavatories for visitors shall in principle conform to the following criteria.

1) Lavatory entrance/exit doors shall be 85 cm in effective width or wider (Fig. 9).

2) Lavatory floor surface shall be level and have a non-slip structure (Fig. 9).

3) Each lavatory shall be equipped with at least one floor-length urinal and one toilet (stool); consideration shall be given to facilitating use by small children.

4) A handrail shall be provided around each toilet for support; for urinals, at least one situated near the entrance/exit in each lavatory shall be provided with a handrail around it. Handrails near urinals shall not obstruct wheelchair movements and the like (Fig. 9).
5) Each lavatory for visitors shall be provided with a number of toilet booths that may be used with ease by visitors in wheelchairs and their assistants for various purposes (hereinafter referred to as “multipurpose toilet booth”). The minimum number of such multipurpose toilet booths shall be obtained by multiplying the total number of toilet booths in each lavatory by 1/50. In lavatories situated inside exhibition facilities (excluding those with 9 or fewer toilet booths), the provision of a multipurpose toilet booth is recommended but not obligatory (Fig. 10).
6) Washbasins shall be firmly installed at a height of about 75 cm from the floor surface and have a structure and shape capable of supporting a leaning user. Sufficient consideration shall be given to facilitating use by wheelchaired visitors, for example, by leaving an open space about 60 cm high and 45 cm deep below each washbasin.
7) Automatic touch-sensitive or single-lever taps shall be used (Fig. 9).

7. Criteria concerning Rest and Service Facilities
(1) Rest areas and facilities for visitors shall be appropriately provided along principal passages and in visitor-contact facilities.
(2) Benches, tables and other rest facilities shall be arranged so as not to obstruct wheelchair passage and rotation.
(3) It is preferable that benches of different heights and shapes be provided to accommodate different visitor uses and needs.
(4) The top surface of counters and tables in service facilities, information offices and the like shall be at a height of 70 - 80 cm from the ground/floor surface, at least one at each location to be of structure and shape capable of supporting a leaning user.
Sufficient consideration shall be given to facilitating use by wheelchaired visitors, for example, by leaving an open space about 60 cm high and 45 cm deep below each counter or table (Fig. 11).
(5) Public telephones, vending machines, water fountains and the like on the site shall be installed so as to facilitate use by small children and visitors in wheelchairs (Fig. 12).

8. Criteria concerning Signs and Indications
(1) Signs and indications shall be installed to appropriately transmit to visitor information on convenient visitor routes, facility use, emergency instructions and so on.
(2) Information boards showing visitor routes and the like shall clearly indicate the degree of route accessibility and ease of use to the disabled and visitors in wheelchairs.
(3) Touch-sensitive information boards shall be appropriately installed near the entrances/exits of the site, zones, lavatories, service facilities and the like, at a height of 90 - 120 cm from the ground/floor surface.
(4) The lower end of information boards and similar facilities protruding into visitor routes shall be situated at a height of 200 cm or more from the ground/floor surface.

(5) Efforts shall be made to establish a system that enables smooth movement and facility use by visitors through various measures, including arranging Braille indications near handrails and buttons and operating panels of elevators; audio-guide systems, electric information boards, emergency alarm and guidance lamps, other equipment and personal assistance.

Drawings

Entrance and exit gates

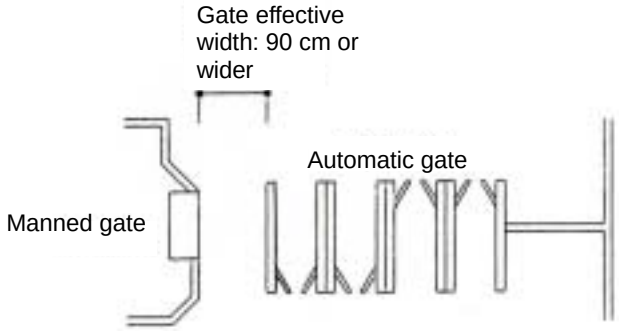


Fig. 1

Passage

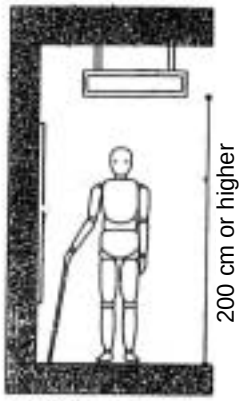
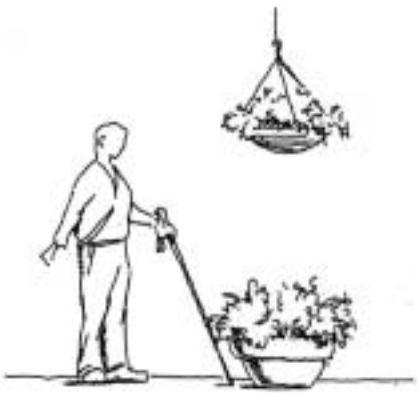


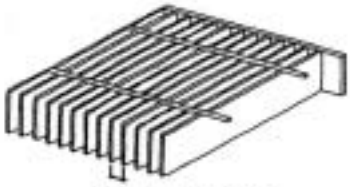
Fig. 2



Obstacles in passages shall be made perceptible to the visually impaired as well.

Fig. 4

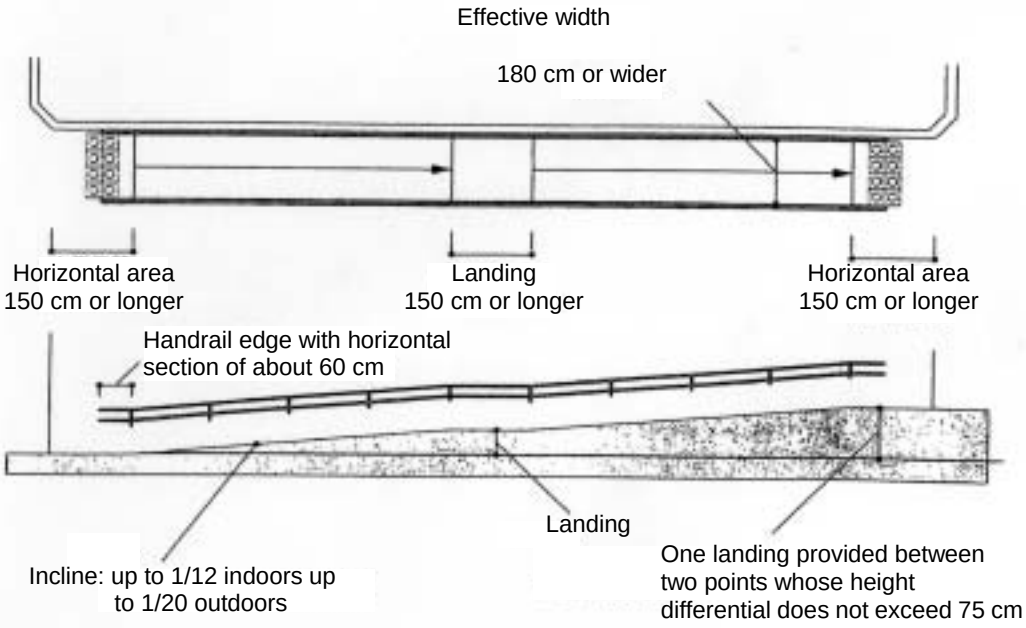
Grating (fine and non-slip type)

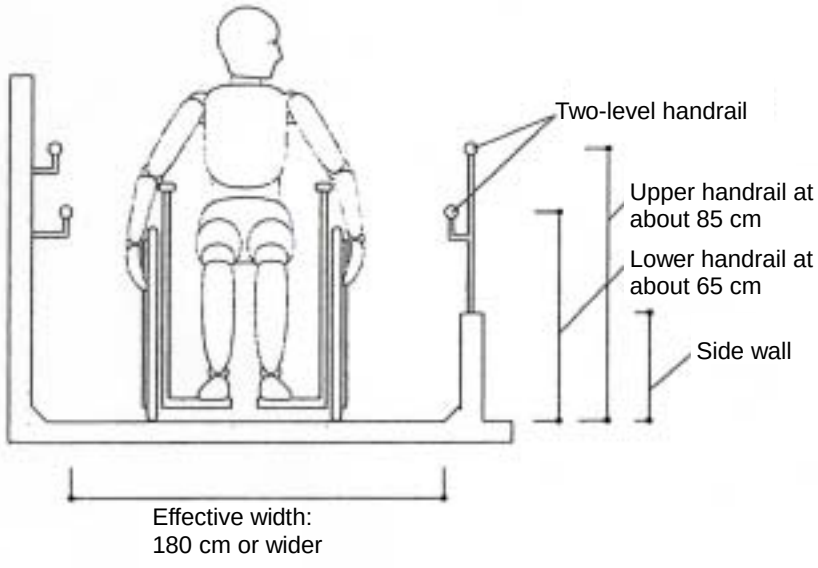


Pitch between bearing bars: 10 mm or narrower

Fig. 3

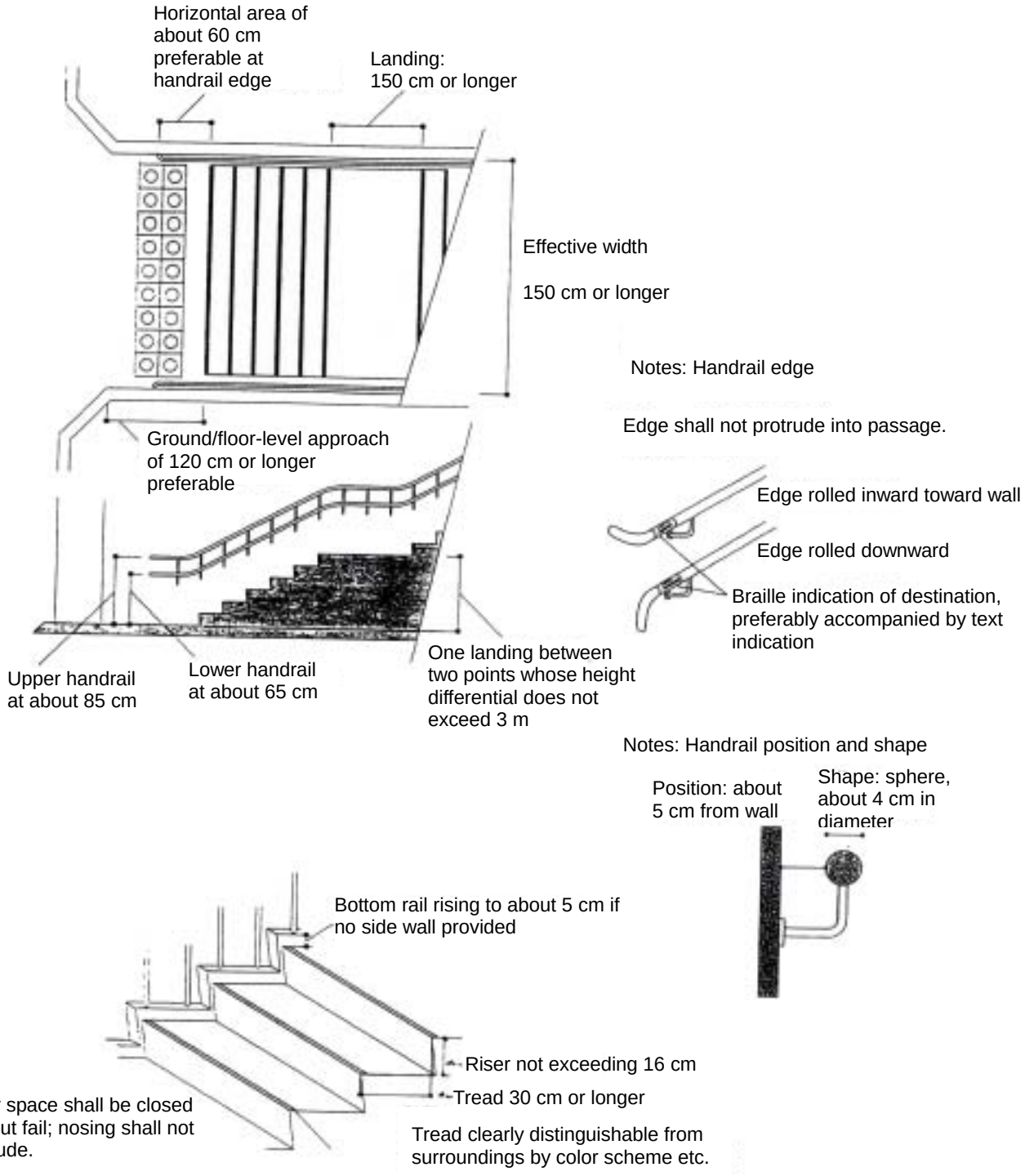
Ramp Fig. 5


Effective width
180 cm or wider
Horizontal area
150 cm or longer
Landing
150 cm or longer
Horizontal area
150 cm or longer
Handrail edge with horizontal
section of about 60 cm
Landing
Incline: up to 1/12 indoors up
to 1/20 outdoors
One landing provided between
two points whose height
differential does not exceed 75 cm


Two-level handrail
Upper handrail at
about 85 cm
Lower handrail at
about 65 cm
Side wall
Effective width:
180 cm or wider

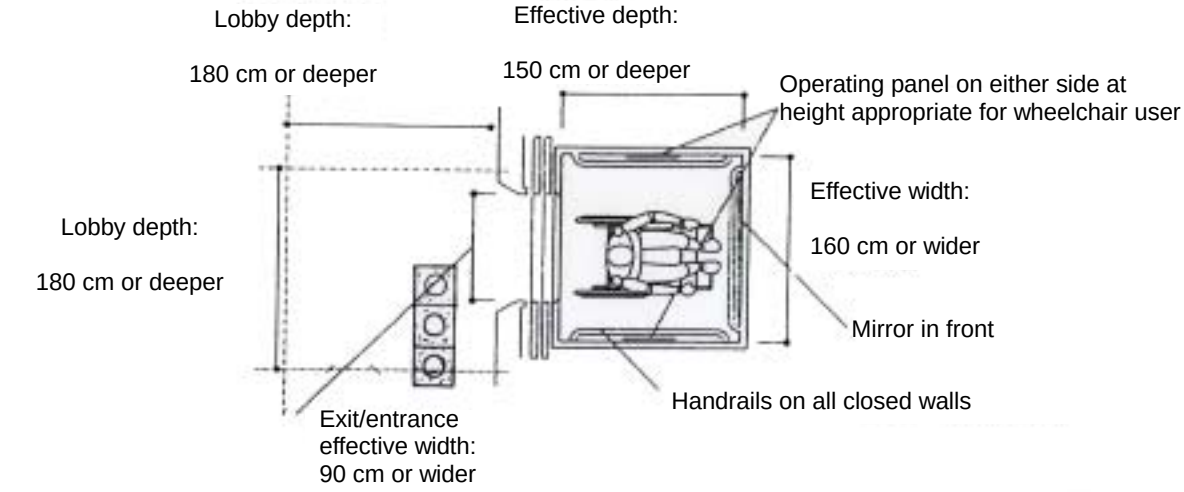
Stairway

Fig. 6

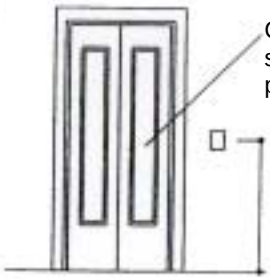


Elevator (in compliance with standards stipulated in Heart Building Law)

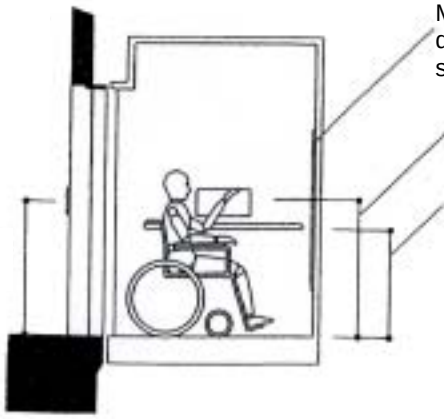
Fig. 7



Notes: Elevator front



Notes: Elevator cross section



Voice guidance system in lobby to inform elevator arrival and direction

In-elevator voice guidance system to inform floor numbers and door opening/closing

Spectator seats

Seats reserved for visitors in wheelchairs
= 1/200 at a minimum of total number of seats

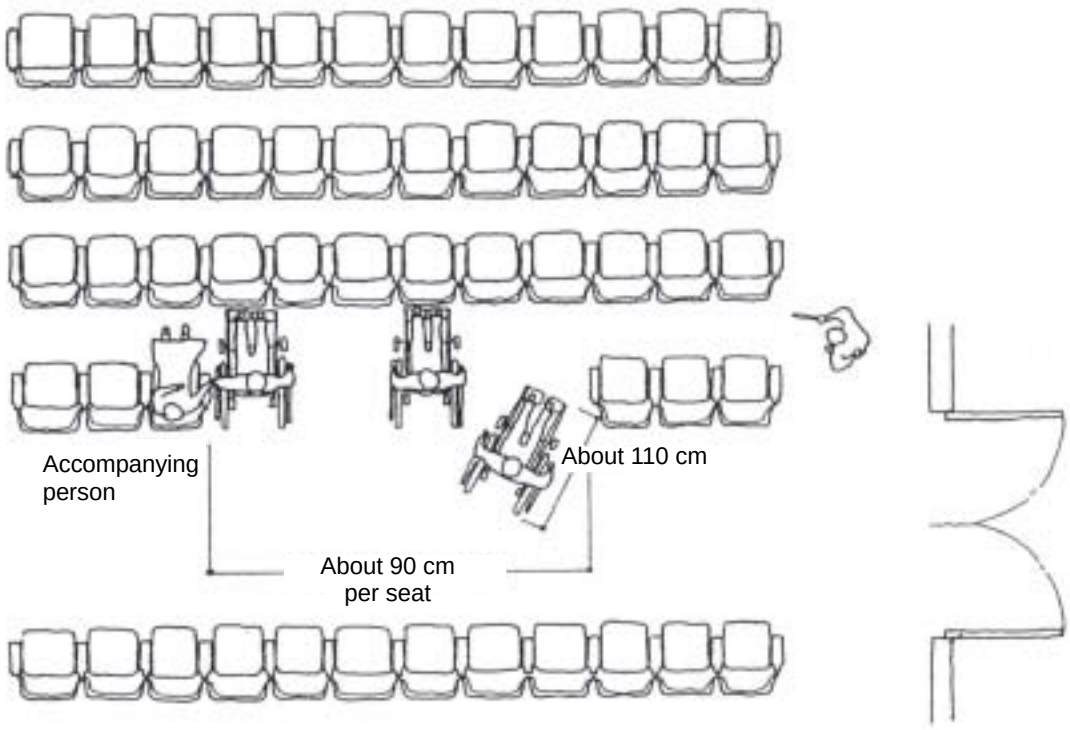
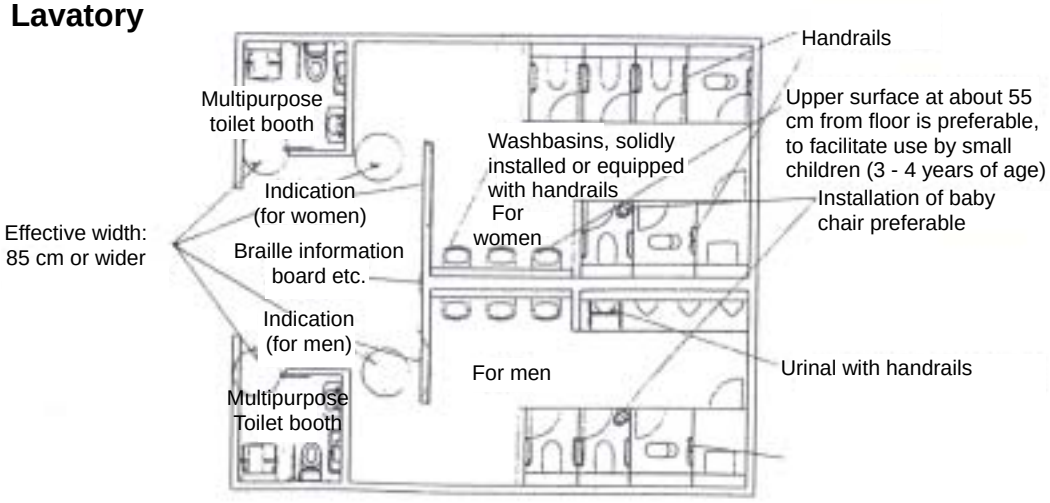


Fig. 8

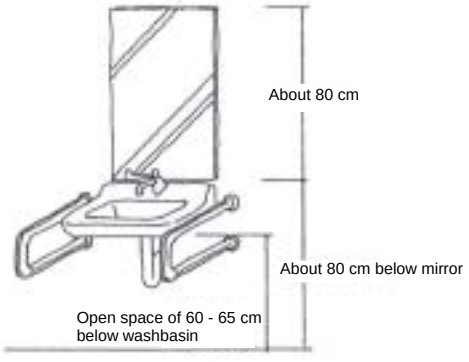
Ordinary Lavatory



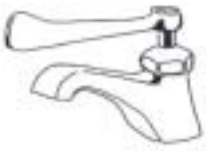
Notes: Handrails for urinal

Notes: Handrails for Japanese-style toilet

Washbasin



Tap



Single-lever tap

Automatic touch-sensitive tap

Fig. 9

Multipurpose Toilet Booth

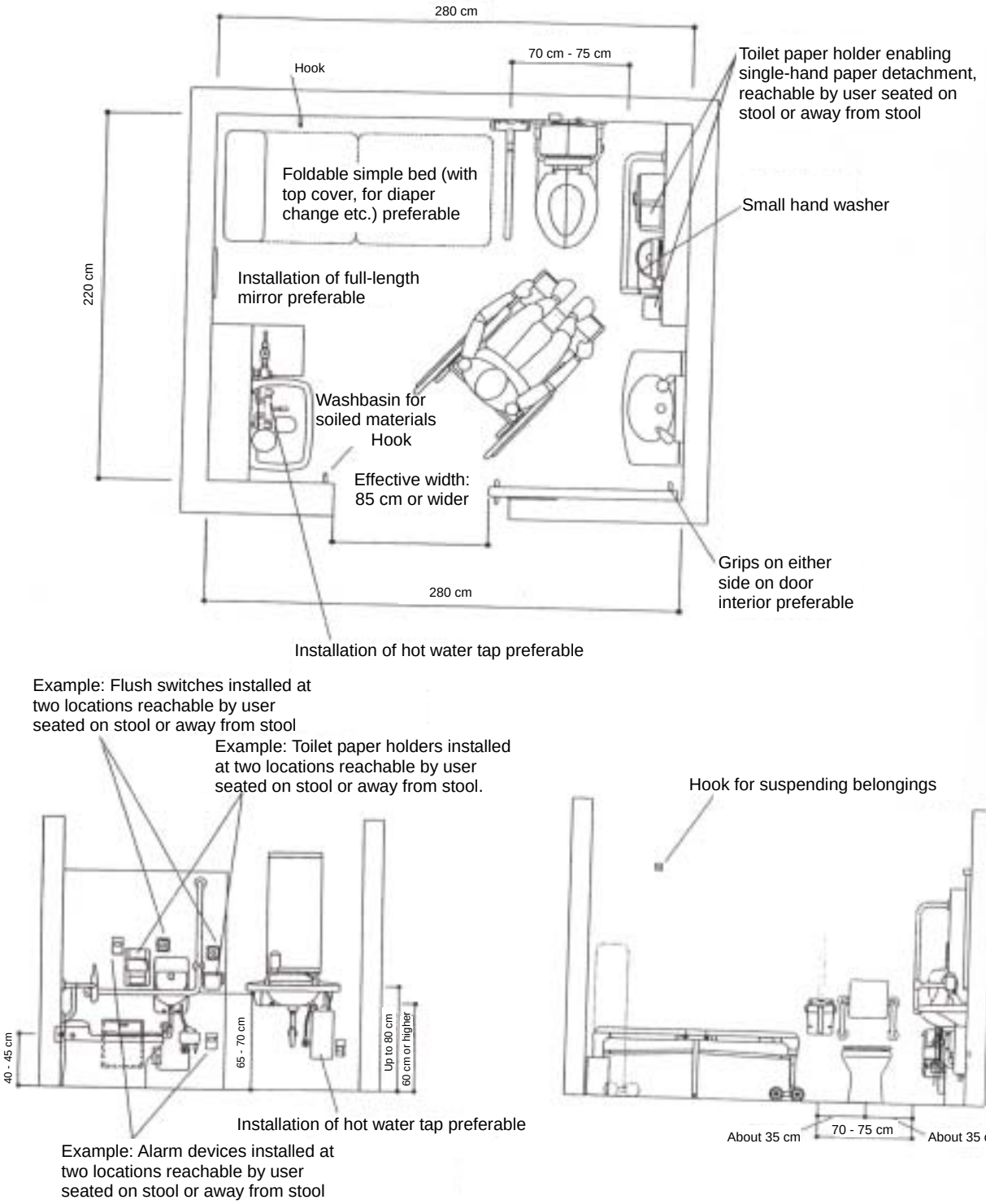
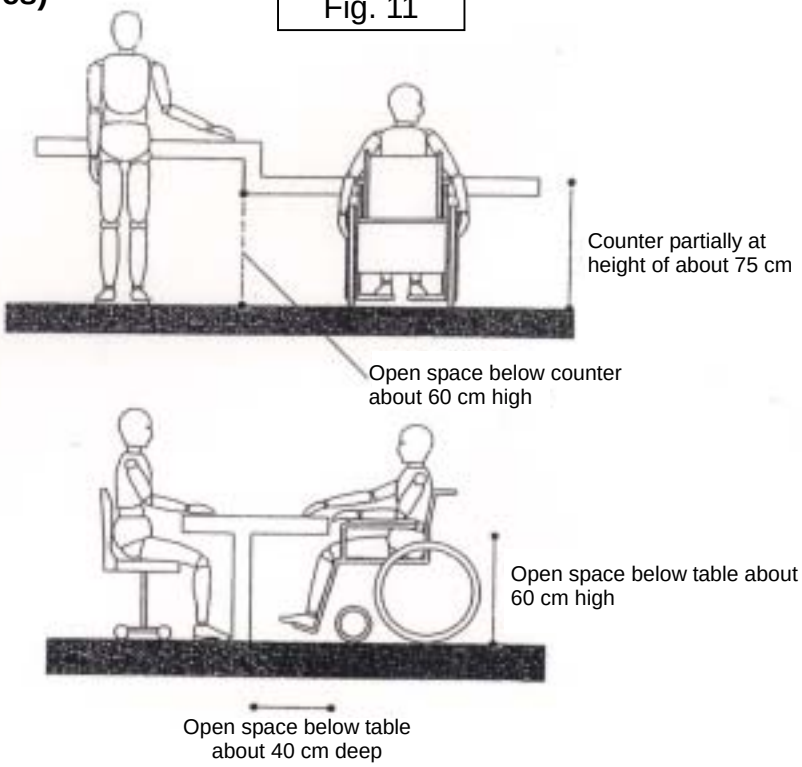


Fig. 10

Counter (Examples)

Fig. 11



Water fountain

Fig. 12