Ready Reference for

Experiential Learning:
BARRIER-FREE BUILT ENVIRONMENTS

BARRIER FREE CONSULTANCY CELL

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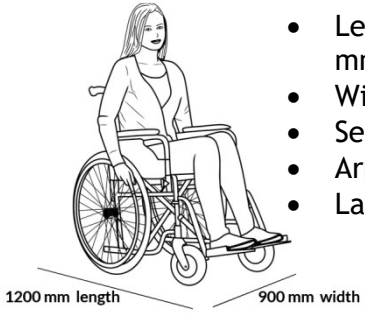
Contents

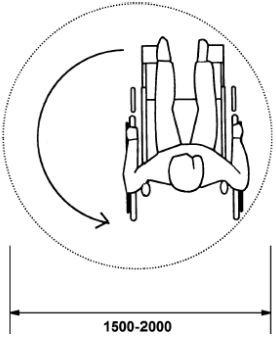
Assistive Devices

Wheelchair



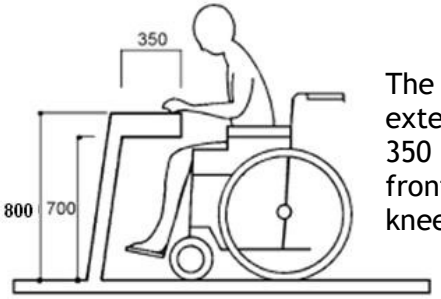
- Length: 1000 - 1200 mm
- Width: 650 - 720 mm
- Seat ht.: 480mm
- Arm rest ht.: 760mm
- Lap ht.: 675 mm

Figure 1 Wheelchair dimensions



Minimum width for a wheelchair to turn is 1500 mm, but ideal space is 2000 mm

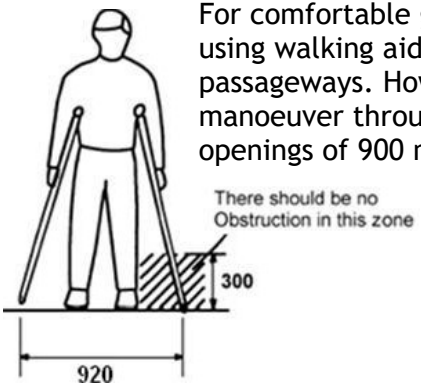
Figure 2 Wheelchair turning space



The footplate extends about 350 mm to the front of the knee

Figure 3 Leg space for wheelchairs

Crutches



For comfortable gait, people using walking aids need wider passageways. However, they can manoeuver through door openings of 900 mm

Figure 4 Optimum space for crutches

White cane (for visually impaired)

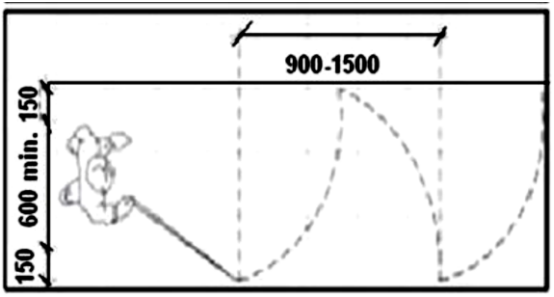
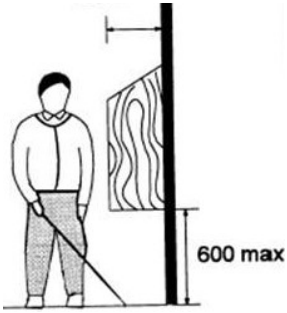


Figure 5 Space for white cane



Obstacles above 600mm cannot be detected using white cane

Figure 6 object detection by the visually impaired

Features of barrier-free built environments

OUTDOOR FEATURES	INDOOR FEATURES
Accessible route/approach	Accessible reception
Accessible entrance to building- ramp	Accessible corridors and tactile flooring
Accessible Parking - Reserved parking near entrance	Accessible lifts with braille; auditory commands
	Staircases with durable handrails
	Accessible toilets
	Accessible drinking water provision
	Auditory and visual signage

Table 1 Features of Barrier-free built environment Source: DEPwD (2021)

Accessible Routes

Tactile pavers

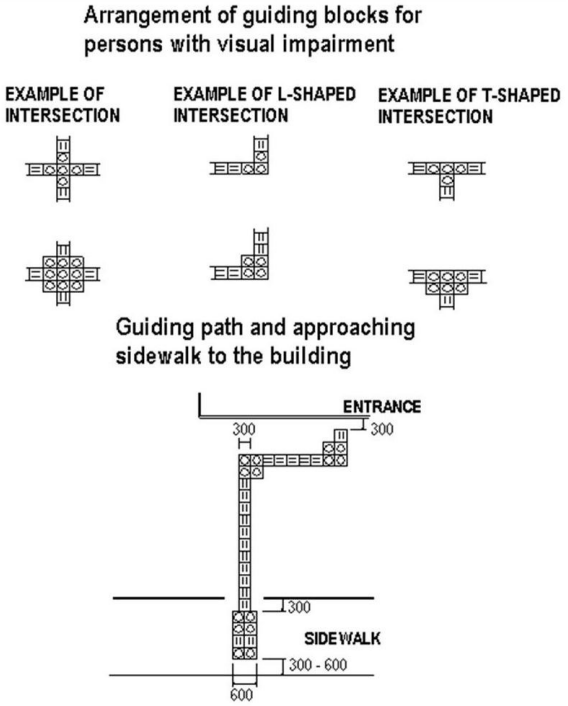


Figure 7 Layout of tactile pavers for guiding and warning visually impaired persons

Tactile pavers should be provided indoors, at major circulation areas as well

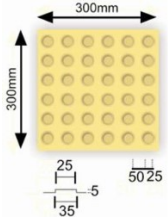


Figure 8 Warning blocks

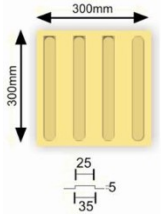


Figure 9 Guiding blocks

Accessible Entrance - Ramp

Level Difference	Min gradient	Ramp width	Landings
≥150 mm ≤300 mm	1:12	1200 mm	
≥300 mm ≤750 mm	1:12	1500 mm	every 5 m
≥750 mm ≤3000mm	1:15	1800 mm	every 9 m
≥3000 mm	1:20	1800 mm	every 9 m

Table 2 Ramp specifications

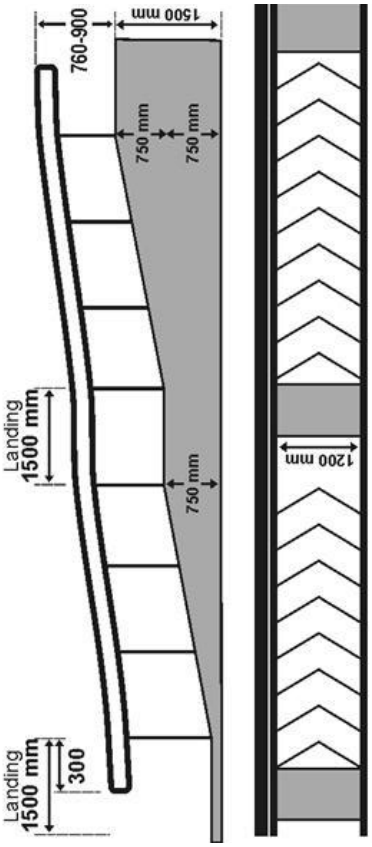


Figure 10 Ramp details

A ramp for vertical rises above 150 mm should have gradient as shown in Table 2.

Handrails are required on both sides at heights between 760 mm and 900 mm. Handrails should extend at least 30 cm beyond the top and bottom of the ramp.

Kerb Ramp

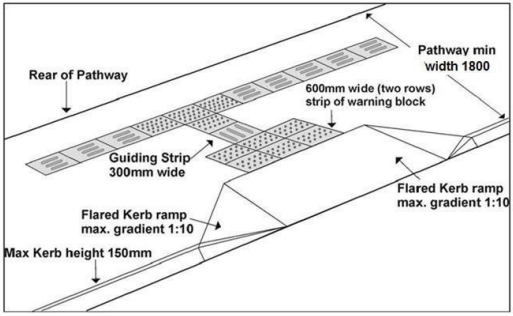


Figure 11 Kerb Ramp detail (for pathway intersection with street

Accessible Parking

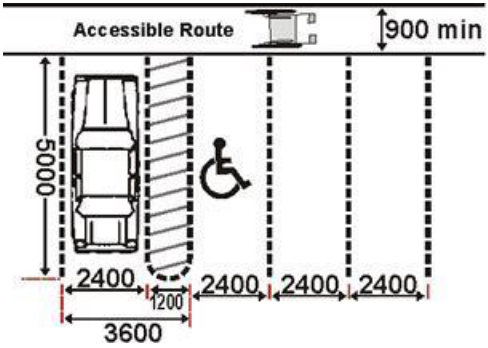


Figure 10 Accessible parking

Accessible Corridors

Doors

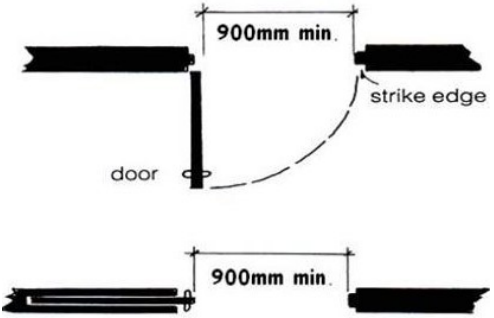


Figure 12 Clear door width

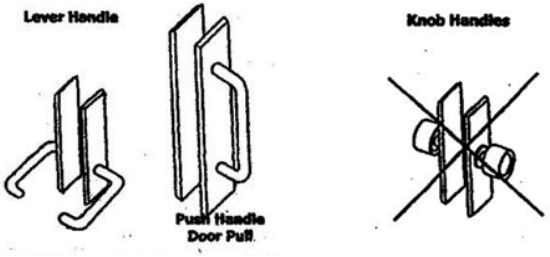
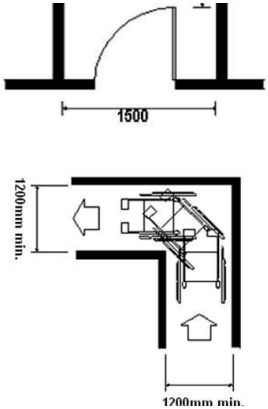


Figure 13 Door handles

Corridors



The minimum clear width of an accessible route should be 1500 mm for a person and a wheelchair to pass. For two wheelchairs to pass, a width of 1800 mm should be provided

Figure 14 Corridor space

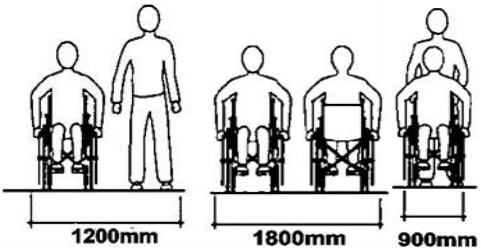


Figure 15 Space requirements for wheelchairs and pedestrians

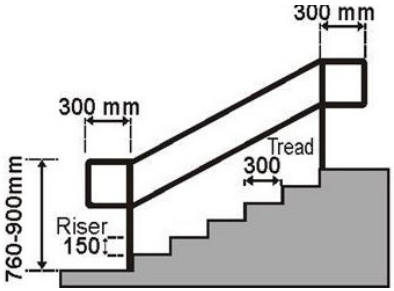
Accessible Lifts

The minimum size of the lift is 1500 mm x 1500 mm

Lift should be marked with the symbol of accessibility and directional signs.

Figure 16 Size of lift

Staircases



1500 mm step width;
Warning blocks at landings

Figure 17 Stair and handrail details

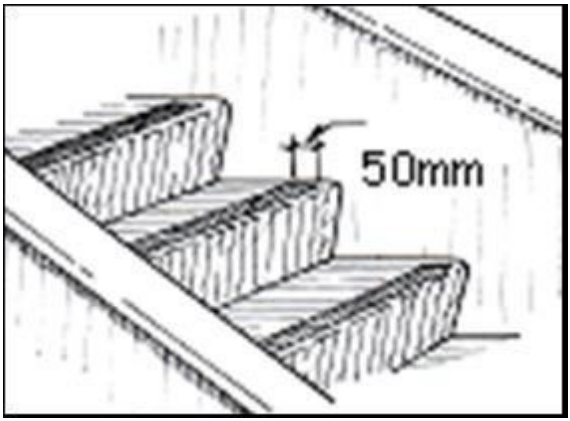


Figure 18 Colour contrast for step edges

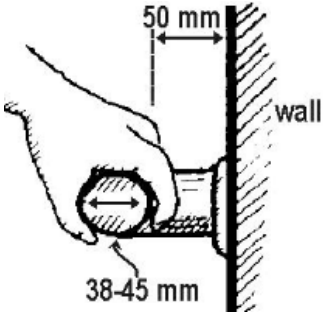


Figure 19 Grab rail details

Accessible Toilet

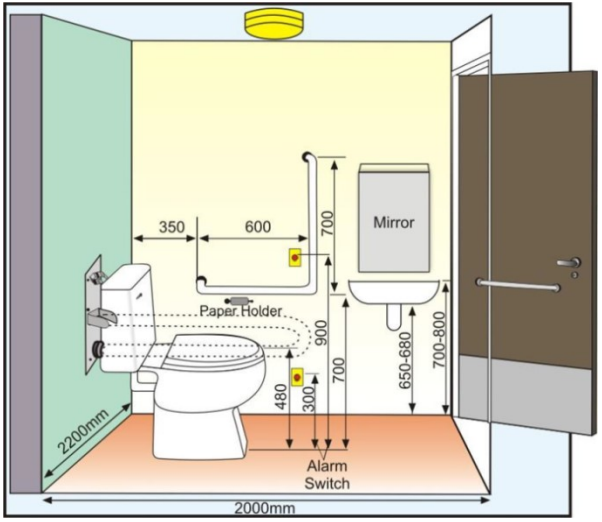


Figure 20 Layout of unisex accessible toilet

Figure 21 Tap handles

- Min internal dimensions: 2200 X 2000 mm
- Preferred door: outward swing/ sliding
- Grab bars should be provided as shown

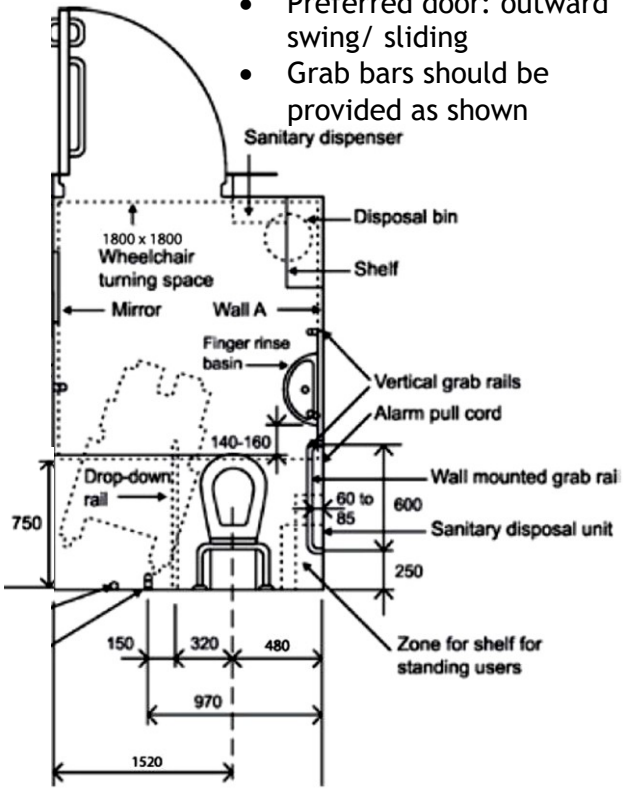


Figure 22 Unisex public toilet plan example

Visual Signage

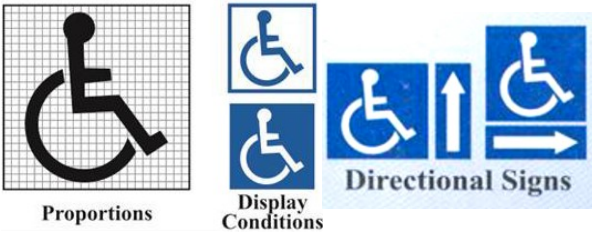


Figure 23 International Symbol of Accessibility

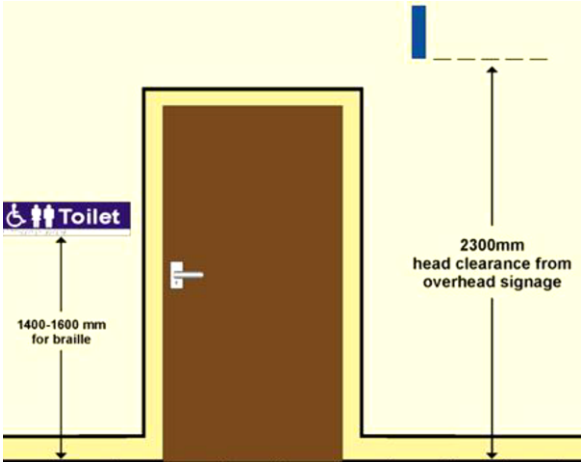


Figure 24 Optimum height for Signage

Figure 25 Pictograms for Accessible Facilities

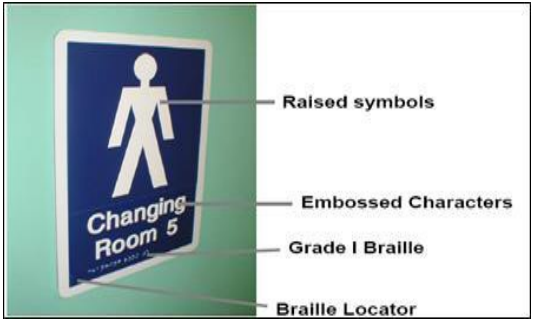


Figure 26 Signage with embossed letters and Pictogram

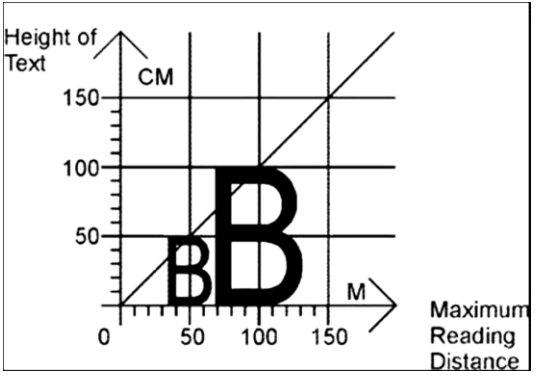


Figure 27 Character size with respect to reading distance

Reference

Harmonised Guidelines and Space standards for barrier free built environment for persons with disability and elderly persons. (2016). Ministry of Urban Development, Government of India.

ACCESS: THE PHOTO DIGEST. (2021). Department of Empowerment of Persons with Disabilities, Government of India. http://disabilityaffairs.gov.in/content/upload/uploadfiles/files/Dictionary%20on%20Accessibility.pdf

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