Access Audit Report and Action Plan
for
Enhancing Built Environment Accessibility
of

VIDYA PRABODHINI SHIKSHA SANKUL
-VIDYA NAGAR ,PARVARI GOA

PREPARED BY-

1.Prof. Dr. Kavita Murugkar – Architect and Access Auditor

2.Abhijit Murugkar – Project Head and Access Auditor

3.Arundhati Gupta — Architect

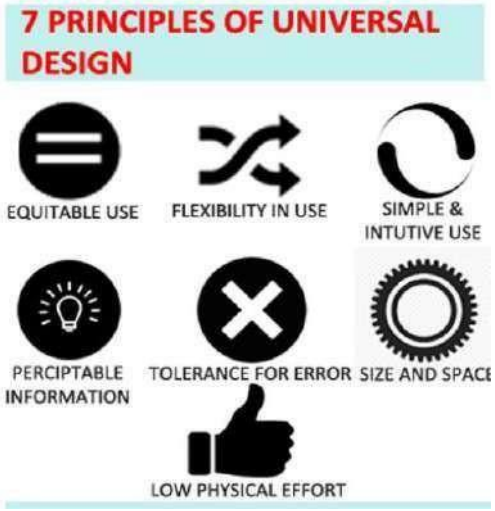
4.Divya pokale — Assistant Architect

OUR APPROACH

A universal design strategy has been applied to every part and the whole of the site , while formulating the recommendations for enhancing Universal Accessibility in the site. The aim is to achieve the following goals wherever practicable:

- Pre-visit information available in accessible formats and providing information about the accessibility of the site and services
- Staff and guides trained in disability and equalityawareness
- Well designed and legible signage
- An accessible principal entry point
- An accessible external landscape
- Simple and intuitive way finding and orientation
- Access for everyone to all parts of site or, where this is not possible, alternative access provided
- Information available in a variety of formats
- Accessible visitor facilities and public conveniences
- Emergency evacuation for everyone

Key issues addressed :
Anthropometrics (Wheelchair user) Continuity
Connectivity
Equality
Safety
Sustainability



KEY DESIGN CONCEPTS

"Accessibility"
Providing access to *ALL*.

Application of universal design principles for social sustenance.

Reversibility of design solutions to achieve physical and intellectual access.

Minimizing environmental pollution for well being of the site and all types of students and visitors.

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MANDATORY RECOMMENDATION

1.**Mandatory accessible pathway** and a tactile guiding path from the site entrance pedestrian gate to all Building Entrances.
2.**Mandatory tactile and Braille signage** at the building entrance.
3.**Mandatory accessible parking bay** with required signage in the existing parking / near the building entrance.
4.**Modification of the existing entrance ramps** to match Harmonized Guidelines standards.
5.**Mandatory handrails** as per standards along all steps, staircases and entrance ramp.
6.**Mandatory tactile markers / signs on all handrails** at the beginning and end.
7.**Mandatory audio tactile building map near the building entrance / reception.**
8.**Mandatory directional signage for stairs, lift, toilets and drinking water fountain** on all floors.
9.Mandatory Braille multilingual and tactile floor directories on each floor of all the buildings.
10.Mandatory tactile guiding path inside the buildings on all floors.
11.**Mandatory reflective edge tape** along treads of all staircase / steps.
1**2.Mandatory multilingual, tactile and Braille signage at all doors.**
13.Removal of thresholds everywhere
14.**Mandatory lever handles** to all doors.
15.**Mandatory unisex accessible toilets** in the building
16.Mandatory accessible drinking water fountains on all floors of all the buildings.
17.**Mandatory lift including provision of audio signage and a mirror and lowering of the control panel**.
18.Lowering of counter height (wherever provided) to make it accessible for wheelchair users.
19.Mandatory 1 wheelchair and 1 evacuation chair in all the buildings.
20.Mandatory emergency evacuation systems such as emergency evacuation signage, maps, fire extinguishers and alarms on all floors.

APPROACH TO THE CAMPUS

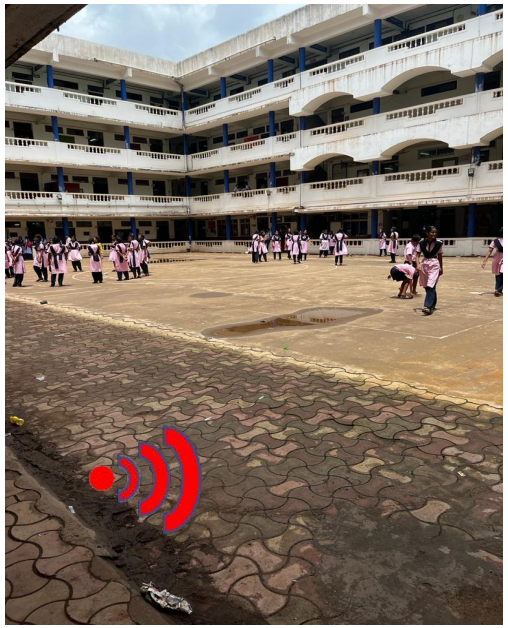
RECOMMENDATIONS

- Beeper to be provided at entrance gate.
- Larger Covered waiting area to be provided

RECOMMENDATIONS FOR CAMPUS LEVEL UNIVERSAL ACCESSIBILITY

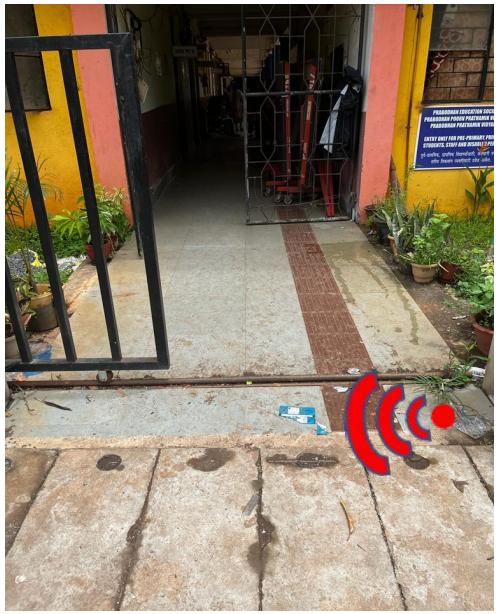
1. Pathways to be redone with levelled flooring with tactile guiding path integrated within the same.
2. Tactile guiding path to be integrated within the existing pathways
3. Repair Curb ramps to be provided wherever needed to all damaged areas on pathways.
4. Accessible parking bays to be provided near every accessible entrance of building in the suggested location
5. Beeper to be provided at main entrance gate.
6. Audio navigation system / campus mobility app to be created to facilitate easy wayfinding and navigation for PwVI.
7. Handrails to be provided along both sides of flight of steps.

PROPOSED LOCATIONS FOR PYLON SIGNAGE, SITE MAP AND BEEPERS



Ground

Passages and Hallways



Entrance gate

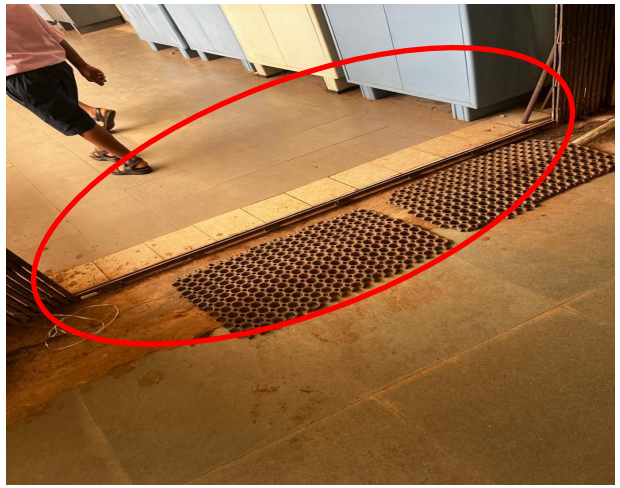
Passages and Hallways

EXAMPLES OF PYLON SIGNAGE

RECOMMENDATIONS FOR ACCESSIBILITY PROVISIONS AT CAMPUS LEVEL

BEVELLING AT THRESHOLD

PROPOSED RAMP ON THE GROUND FLOOR



THRESHOLD ACTING AS THE BARRIER

KERBS TO BE PROVIDED ALONG THE SIDE OF THE GROUND AS SHOWN IN THE PICTURE.

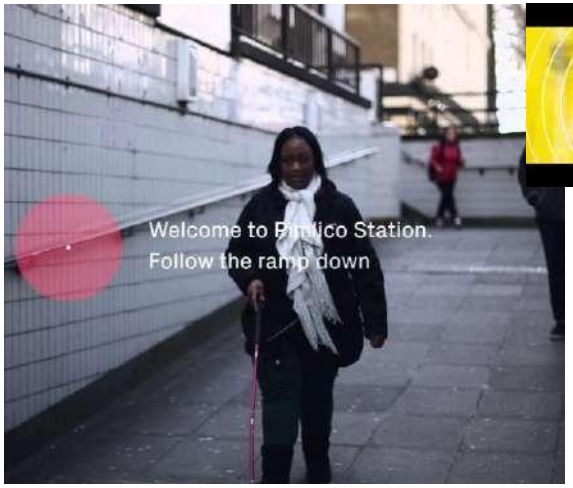
PROPOSED EDGING ON THE STEPS

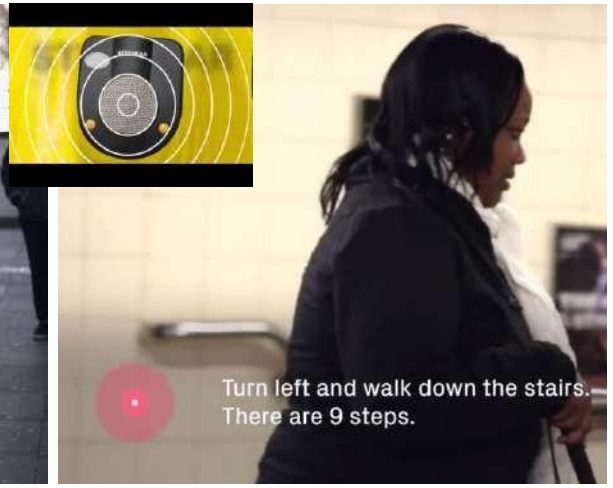
PROPOSED LEVELLING OF THE LAB ENTRANCE

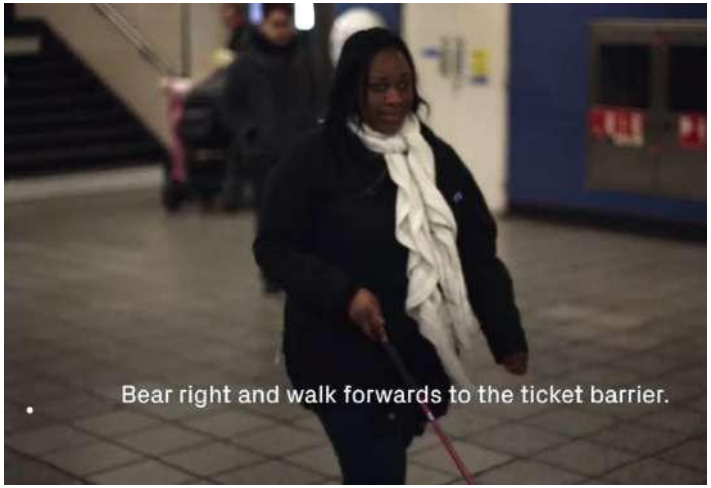
PROVISION OF AN ELECTRONIC AUDIO NAVIGATION SYSTEM INSIDE THE CAMPUS FOR EASY WAY-FINDING

RECOMMENDATIONS

- Provision of an electronic audio navigation system at appropriate locations which give out Audio Signals with the help of the app on Android / iOS Smartphones to make navigation inside the building easy for the people with vision impairment.
- The navigation device will give audio information of important locations in the building like accessible entrances, accessible toilet, lift, staircase, reception / help desks, important rooms / sections of the building, etc.
- In the exteriors, the system will give indications like the nearest public toilet, distance of specific buildings from the location, direction of the accessible entrances of the building, nearest resting space etc.







PROPOSED LOCATIONS FOR ACCESSIBLE PARKING

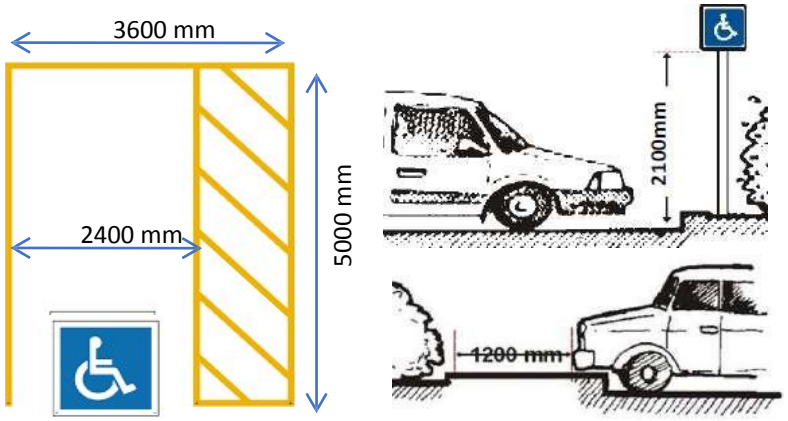
Underutilized space to be converted

Proposed parking area outside the entrance

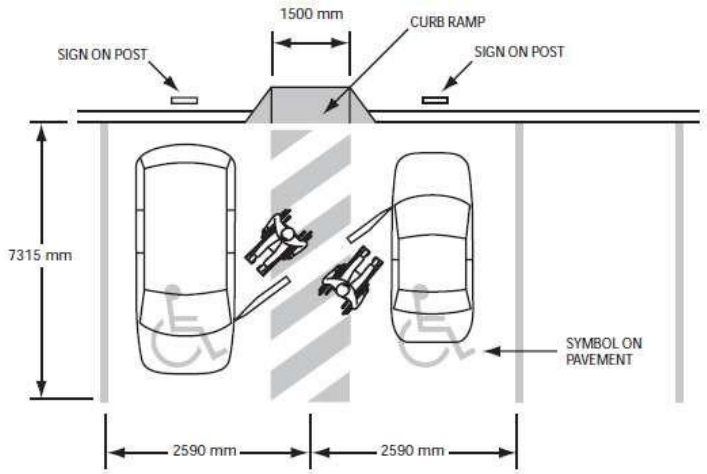
ACCESSIBLE PARKING

RECOMMENDATIONS

- Accessible parking bays to be provided within 30m to the principal public entry point to all the buildings in the campus.
- Accessible parking space should be located nearest to the entrance gate or adjoining an accessible pedestrian route that leads directly to one of the main entrances of the building.
- There should be clear information accessible to all, discouraging the misuse of accessible parking bays.
- Each accessible parking bay should be of dimension (3600 x 5000 mm) including alighting space of 1200mm and should be clearly demarcated on floor and signposted as indicated in the adjoining detail.
- Signpost of international symbol of accessible parking should be provided at 2100mm height and of 600mm x600mm size for easy visibility from driver's seat.
- The parking bays should have firm and leveled surface.
- Accessible parking bays should have side and rear transfer zones for removal and set up of a wheelchair from the boot of a vehicle or for use of a rear-, or side-, mounted wheelchair hoist.
- Parking area should be well lit and, where practicable, covered.
- There should be well defined step free and barrier free route with a tactile guiding path to the main accessible entrance from the parking bays.
- Trees in parking to be provided with a grating cover and guardrails as shown in the detail on previous page.
- Accessible directional, multilingual and tactile signage to be provided as per standards on the floor and on the wall / post.
- All security guides/ guards should be sensitized and well informed about reserved parking for PWDs.



ACCESSIBLE PARKING BAY AND ALIGHTING AREA



ACCESSIBLE PARKING BAY WITH ALIGHTING AREA FOR TWO

ACCESSIBLE BUILDING ENTRANCES

RECOMMENDATIONS

- Provision of continuous accessible path for PWD's to reach the entrances of all buildings in the campus.
- Provide tactile guiding path in the floor leading to the accessible entrances .
- Entrances should be marked by accessible signage in a recognizable and welcoming way.
- Entrances should not have any cross over with vehicular traffic .
- Entrances/ exits should be made accessible by providing ramps and steps to allow widest spectrum of users to pass through.

1. Width of ramp should be min. 1500 mm and preferably covered
2. Gradient of ramp to not exceed 1 :12 for new ramps.
3. All ramps to be provided with broom finish concrete surface and handrails on both sides at 900 mm and 760 mm along entire stretch of ramp and landing
4. A tactile guiding path in the floor to be provided for navigation for PwVI till and through the ramp if rebelling strips not provided.
5. Provide warning tiles in floor at beginning and end of ramp

- Handrails to be provided along both sides of the ramps / steps.
- A tactile pictographic map of the respective building to be provided at the entrance, with the tactile guiding path leading to the same.
- Any free barrier such as furniture / potted plants / door mats etc. at the entrance to be removed.
- Accessible directional , multilingual and tactile signage to be provided as per standards leading to the accessible entrances.

RECOMMENDED SIGNAGE

TACTILE PATHS

KEY ISSUES

- Tactile guiding path for navigating for PwVI has not been provided in corridors, found absent in all the buildings in the campus
- Free barriers like door mats, potted plants and furniture observed in some corridors.
- Insufficient and inaccessible directional and general signage

RECOMMENDATIONS

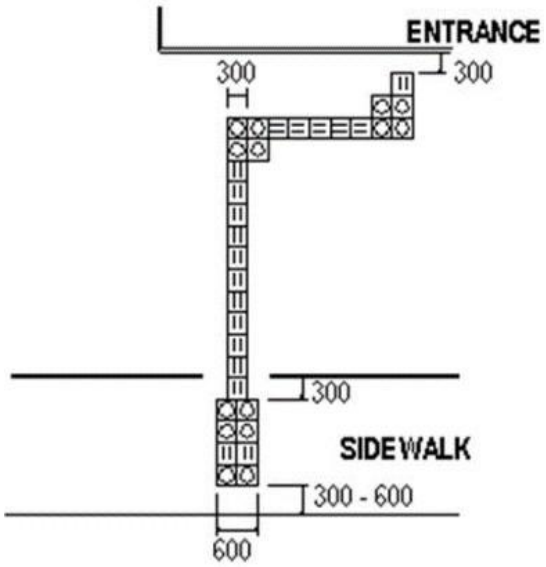
- Provide tactile guiding path in the floor for independent navigating through the corridors of all blocks for PwVI
- Provide tactile warning tiles in the floor and / or guard rails around free structural barriers like columns in the corridors
- All free barriers like door mats, potted plants and furniture to be removed from corridors
- Nahani trap (drain)/ chambers/ covers in the corridor to be flushed with the surrounding floor.
- Free columns to be provided with warning tiles
- Accessible directional , multilingual and tactile signage to be provided as per standards

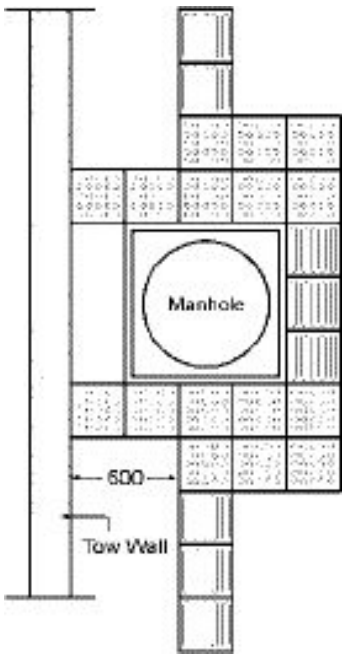
TACTILE GUIDING PATH DO NOT BE PROVIDED IN THE CORRIDORS

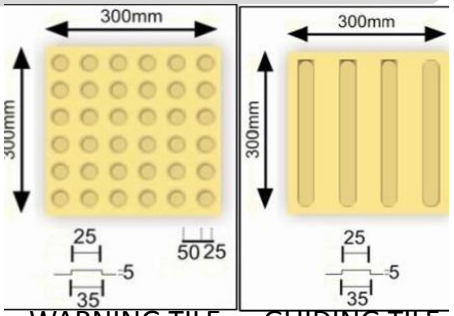
PROPOSED TACTILE GUIDING PATH IN THE CORRIDORS

TACTILE MAP, GUIDING PATH, WARNING TILES AND GRATINGS

Guiding path and approaching sidewalk to the building

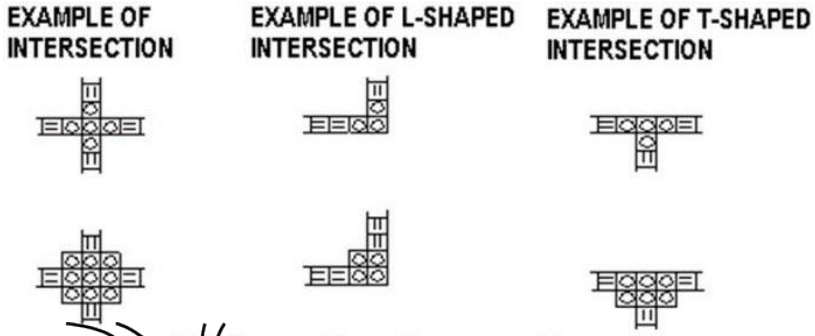






WARNING TILE GUIDING TILE

Arrangement of guiding blocks for persons with visual impairment



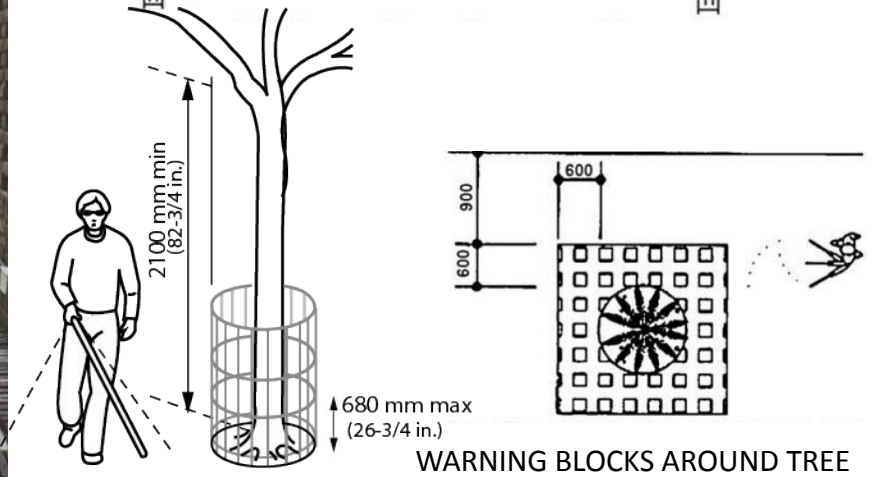
Specification

- Each Tree Surround consists of 4 Nos panels of 750mm X 750mm X 40mm/100mm Thickness or 900mm X 900mm X 40/100mm Thickness
- Overall dimensions:1500mm X 1500mm X 40/100 mm (Thickness) or 1800mm X 1800mm X 40/100mm Thickness
- Suitably reinforced for long use and to prevent damage during transportation & handling.

RECOMMENDED BRAND FOR GRATING

K.K.Manhole & Gratings Co.(P) Ltd.

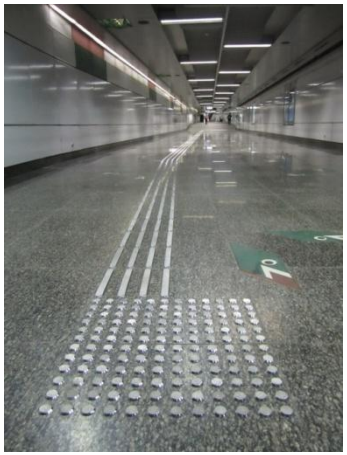
New Delhi

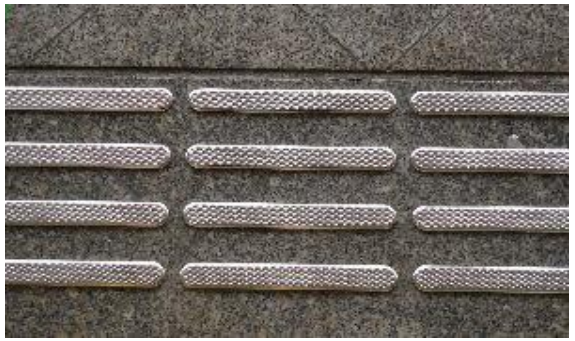


WARNING BLOCKS AROUND TREE

TACTILE MAP, GUIDING PATH, WARNING TILES AND GRATINGS

EXAMPLES OF STICK ON TACTILE TILES FOR INTERIORS



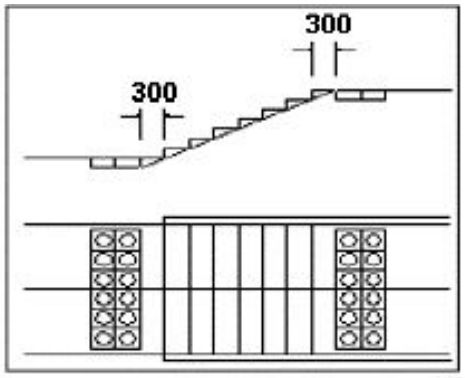


EXAMPLES METAL WARNING STUDS AND DIRECTIONAL STRIPS FOR EXTERIORS AND INTERIORS

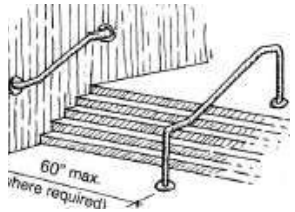
STEPS AND STAIRCASES

RECOMMENDATIONS

- A tactile guiding path to be provided in the floor for navigating till the steps / stairs for PwVI.
- Provide warning tiles in floor 300mm at beginning and end of steps/ stairs , landing also to have row of warning strip.
- Contrast colour edge strips / grooves of minimum 50mm should be provided on nosing of treads.
- Handrails to be provided on both sides of the steps and along entire stretch of stairs and landing.
- Handrails should be in SS, circular in section and 38-50 mm dia.
- In addition to the handrails provided on both sides of the staircases, intermediate handrails should be provided for staircases with a width wider than, say, 3600mmfor external staircases or 2400mm for internal staircases . The intermediate handrails should be capable of being used from both sides.
- It would be of further benefit if the handrail is extended beyond the top and bottom steps.
- When handrails are not continuous, they should return to the wall , floor or post, so that they do not become obtrusions.
- Cordon off the underside of staircases , where the headroom is 2000mm or less from the finished floor level, with a guard rail or design in such a way to stop people from walking underneath that part of the staircase. Generally, people with a guide stick can detect an area of obstruction up to 685mm high from the ground level.
- Accessible directional , multilingual and tactile signage to be provided as per standards.
- Floor wise key plans are proposed next to steps .



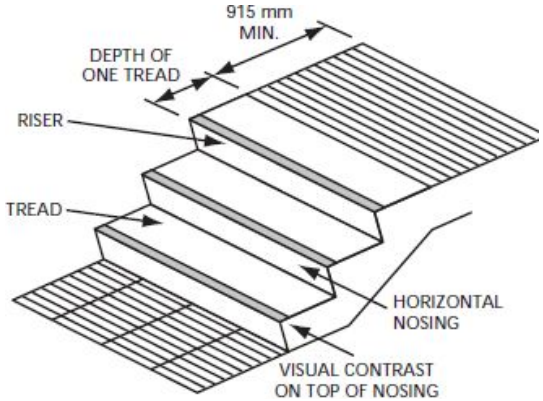
WARNING TILES LOCATION



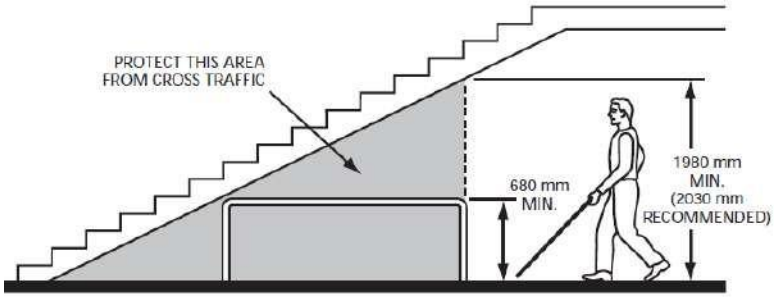
INTERMEDIATE HANDRAIL

WARNING TILES AND EDGE STRIPS

CONTRAST COLOUR EDGE STRIPS



SIGNAGE



CORDONING OFF UNDERSTAIR STAIRCASE WITH GUARDRAILS

INTERNAL ENVIRONMENT

KEY ISSUES

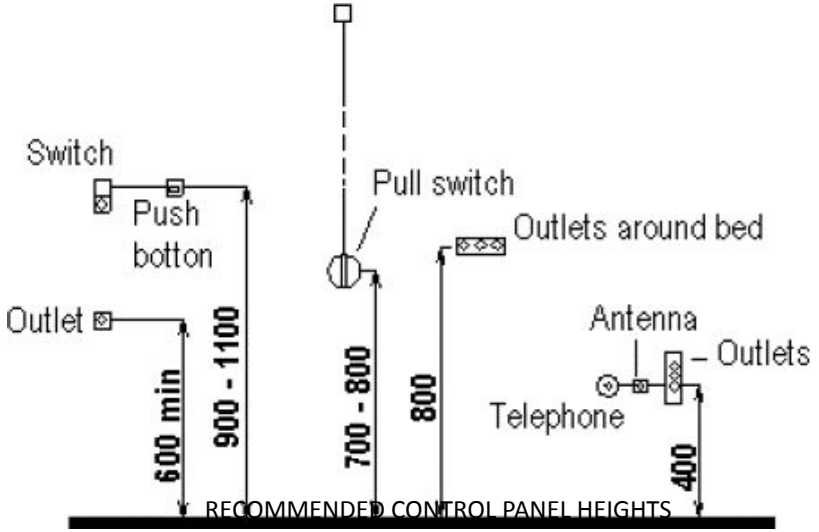
- No colour contrast between switches and plate and wall
- Some electrical switches, wall sockets are not located adjacent to the clear floor space
- Some wires are not concealed
- Some control panels are protruding and not flushed to the wall
- Information on controls and switches is not in relief

RECOMMENDATIONS

- Controls / switches should be colour-contrasted, with the surrounding face plate panel and the face plate contrasting with the background wall on which they are mounted
- The operable part of controls such as vending machines, electrical switches, wall sockets should be located adjacent to the clear floor space with dimensions of at least 900 mm x 1200mm
- Electrical wires to be concealed
- The control panels /switch boards should be flushed to the wall, doors kept closed and wiring concealed
- Information on controls and switches should be in relief

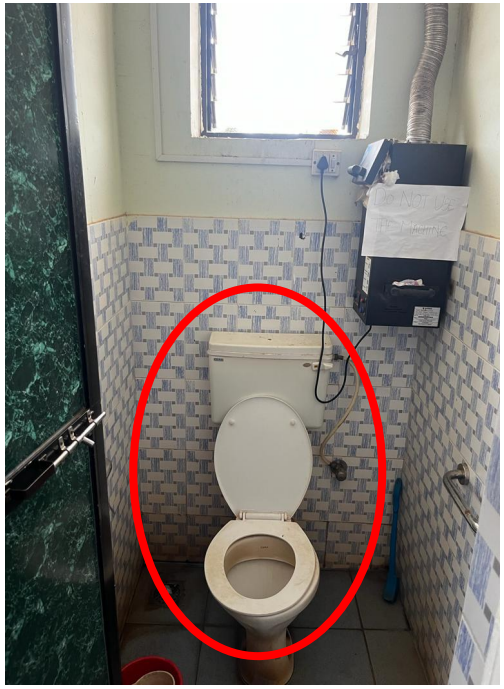
NO COLOUR CONTRAST BETWEEN SWITCHES AND PLATE

SWITCH BOARD IN CONTRAST WITH THE BACKGROUND



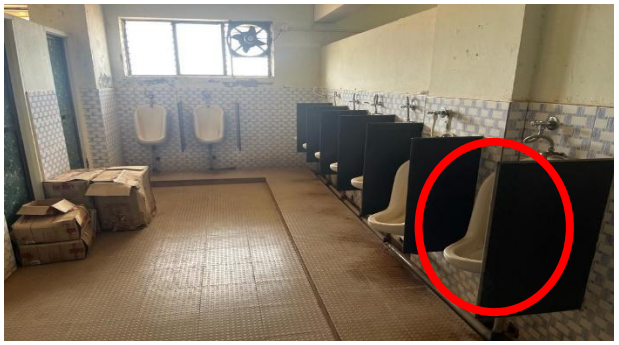
RECOMMENDED CONTROL PANEL HEIGHTS

ACCESSIBLE TOILETS



Inaccessible toilet block with no grab bar and supports

There are level differences at door openings.



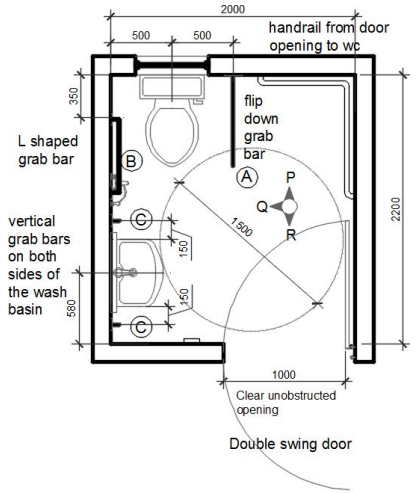
Basins and urinals not provided at HG standard height

KEY ISSUES

- No tactile guiding path in the floor leading to the toilets.
- No accessible toilet block with no grab bar and supports
- All basins and urinals provided at standard height (850mm) , none caters to children / low heighted people. Washbasin are not mounted at a height of 750mm and at a distance of at least 400mm from the side wall.
- Toilet door widths are less than 900 mm.
- Height of mirror starts at 1100mm which is inaccessible for a wheelchair user.
- There are level differences at door openings.

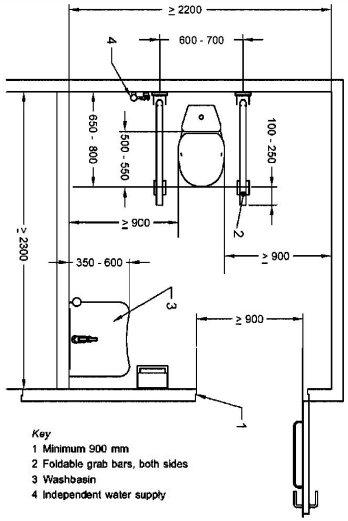
ACCESSIBLE TOILETS

LAYOUT OPTIONS FOR SIZE – 2200 X 2000 MM



TYPICAL ACCESSIBLE TOILET: PLAN

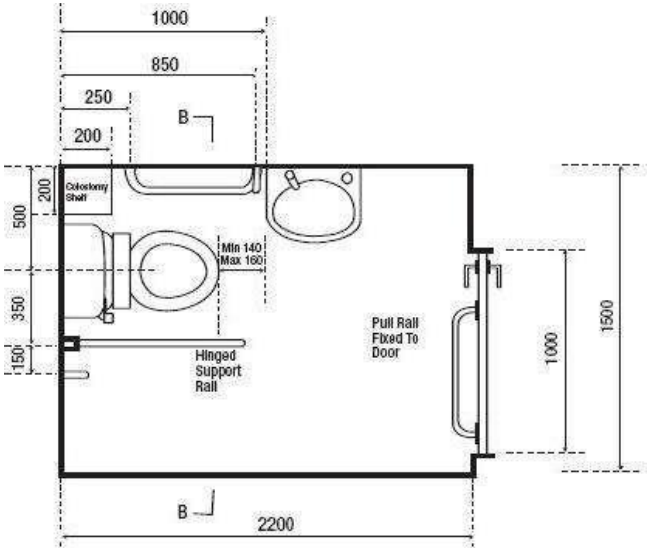
OPTION 1

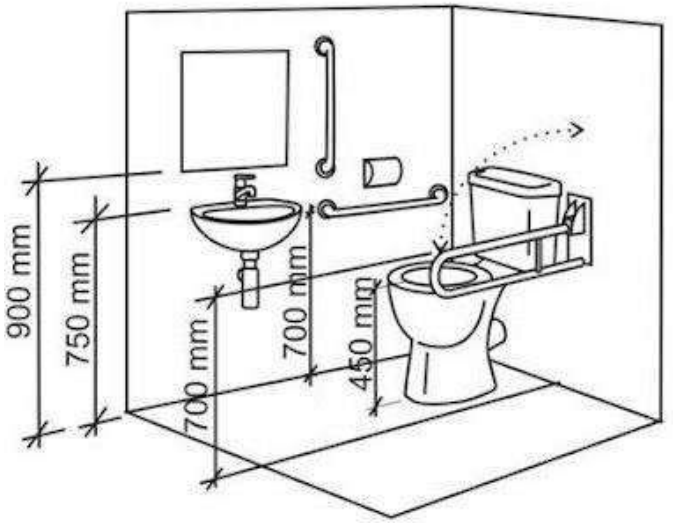


OPTION 2

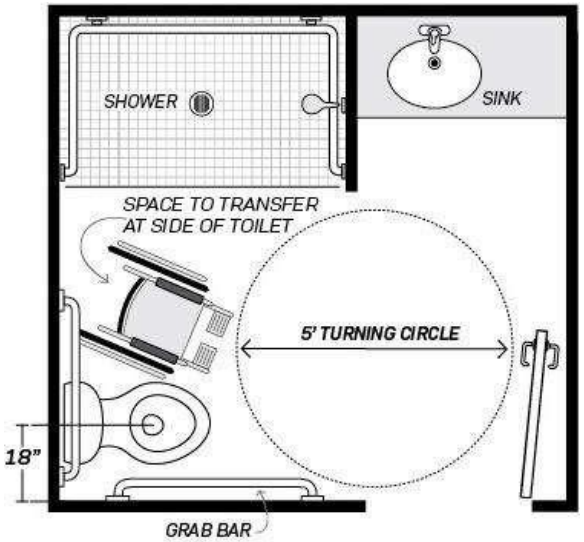
2. ACCESSIBLE TOILETS

LAYOUT OPTIONS FOR SIZE – 1500-1800 X 2000 MM





ACCESSIBLE TOILET LAYOUT WITH SHOWER AREA IN HOSTEL BLOCKS



SIZE – 2200 X 2000 MM

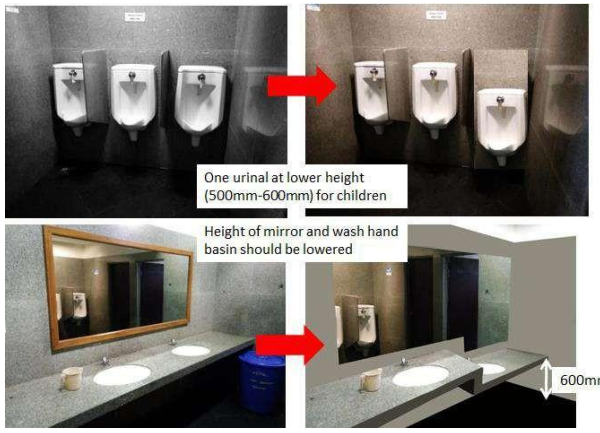
PROPOSED MODIFICATIONS IN EXISTING TOILETS

Provisions for Persons with Physical Disability in General Toilets

- At least one western WC to be provided in every general toilet block.
- Grab bars should be provided to one urinal, one basin and inside one toilet cubicle.
- At least one basin and mirror and one urinal should be mounted at a lower level.

Grab bars

- A grab bar should be of preferably in SS, 32 mm diameter/width and strength such that it may easily be grabbed and used as a support .
- Grab bars should be in a colour that contrasts with the surrounding area.
- Grab bars should be installed to resist a force of at least 1.3 KN (130 KG) applied vertically or horizontally.



ACCESSIBLE TOILETS

RECOMMENDATIONS

ALL PROPOSED ACCESSIBLE TOILETS SHOULD CONFORM TO THE FOLLOWING STANDARDS :

- A full range of user-friendly provisions should be made to reach the toilet blocks including tactile guide path, floor plan with illustrations in written text and Braille, and large information signs.
- Accessible toilets should have the universally adopted symbol for wheelchair access displayed outside.
- Location of general / accessible toilets to be marked on all tactile pictographic maps.
- Recommended clear floor space for accessible toilet is -2000mmx
  2200mm minimum.
- Where provision of independent unisex accessible toilet blocks is not feasible , Accessible toilet cubicles should be provided within the existing ladies and gents toilets by reconfiguring internal layout to achieve an ideal size of 2000mm x 2200mm. An example of desirable layout is shown in the following pages.
- Drinking water fountains of two mounting heights should be provided and preferably located near the toilet blocks but away from the toilet entrances.(refer to section 10 for details)
- A step free , levelled tactile guiding path to be provided in the floor from corridors / walkways leading to the accessible toilet blocks.
- The main entrance door / opening to the toilet and internal cubicles should be minimum 900mm in width.
- There should be no level differences inside all toilet blocks. Existing level differences to be removed or beveled to facilitate easy wheelchair movement.

In the Accessible Toilet –

- Floor surface material must be non-slippery but should not trap dirt or water.
- **There should be colour contrast between the floor and the walls.**
- Floor drain covers should be fixed flat on the floor surface without any projections to prevent people from tripping over.

WC and urinals

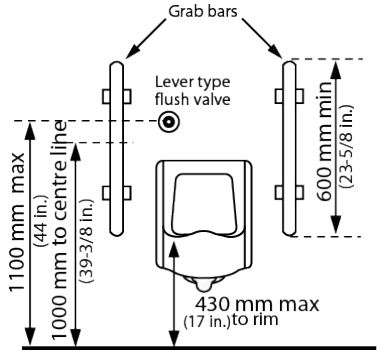
- WC or toilet compartments should have enough floor space and 900 mm wide step-free doors for wheelchair users to enter and exit.
- The WC should be preferably wall hung anD in a position as to permit easy approach by wheelchair users.
- WC compartments should have support rails / grab bars at a position and height suitable for wheelchair users and other persons with physical disabilities. Upward-folding grab bars (lift-up grab bars) are recommended to allow lateral transfer from the wheelchair.
- Recommended sizes : Grab Bar A: 600mm length, Grab Bar B: 600mm x 600mm,
  Grab bar C: 600mm length.
- The accessible toilet to be provided with an emergency call bell.
- Water Closets (WC) Should ideally be at 550mm height as per ADA norms. The existing WCs are at a height of 450mm, thus some removable WC seat raisers to be kept in the housekeeping dept of each block (atleast 1 in each block) and to be used whenever required.
- There should be 900mm of clear transfer space next to the WC.
- The WC should be installed in a corner with centerline of the WC at a distance of 450mm to 500mm from the adjacent wall and to have supports on both sides.
- Flushing equipment should be easy to operate and lever type.
- An L shaped grab bar should be installed on the adjacent wall, at a height of
  200mm from the WC seat.
- Urinal (if any) base height of the urinal should be not more that 450mm from FFL.

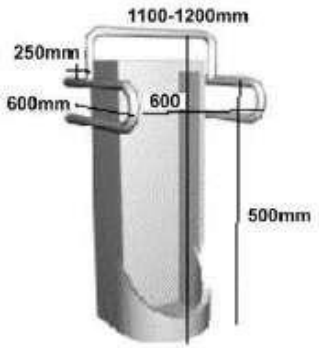
ACCESSIBLE TOILETS

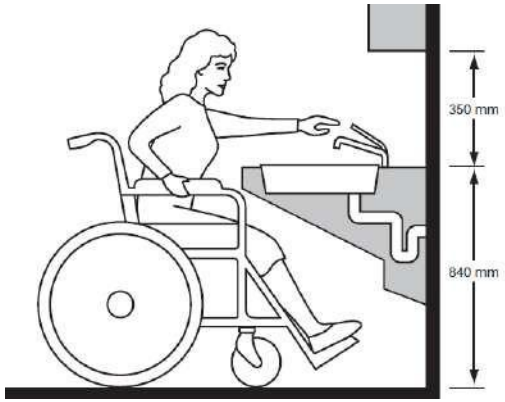
- A toilet paper dispenser should be so installed as to be easily used by a person with physical impairments sitting on the toilet.
- Fittings, such as soap dispenser, electric hand dryer and mirror, should be low enough for a wheelchair user to use comfortably.
- The accessible Toilet cubicle / WC doors should have double swing (should open outside also) and lever handles.
- Locks to toilet doors or cubicle should be a type that can be opened from outside in case of emergency. Lock lever should be of the type that can be easily opened by person with weak grip power.
- Accessible directional , multilingual and tactile signage to be provided as per standards.

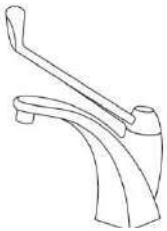
Wash Basin And Mirrors

- The accessible washbasin should be mounted at a height between 750– 850mm. The washbasin should be installed at a distance of at least 400mm from the side wall. There should be clear knee space of at least 650-750mm height x 750mm width x 200mm depth under the wash basin.
- At-least 1 basin height to be lowered to 650mm keeping children in mind.
- The wash basin should have lever type taps. Basin taps should be placed at the centre of the basin.
- Mirror to be provided and installed at a height of 900 mm.
- Mirror inside accessible toilet should be slightly tilted towards the floor for use by the wheelchair users.
- Basins can be provided with counters or a flat surface for placing things.
- U-shaped folding grab bars are proposed on the both side of the wash basins.

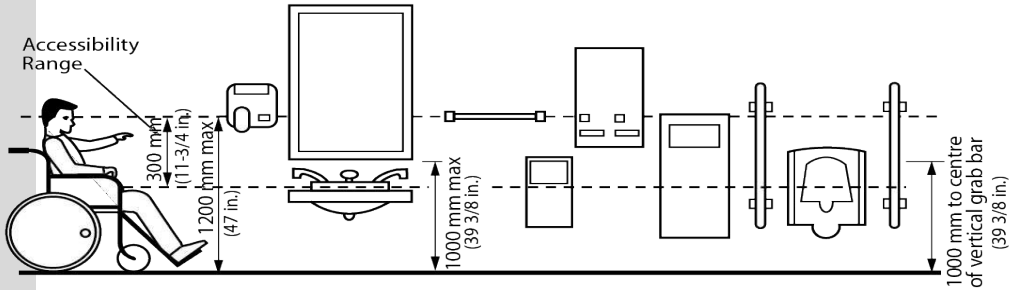








LEVER TYPE TAPS



HANDRAILS

RECOMMENDATIONS

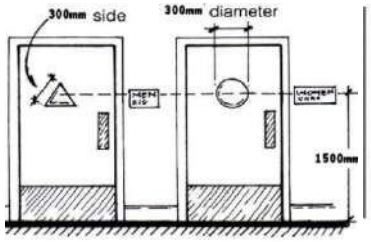
- Handrails to be provided on both sides of all ramps / existing stairs in
  SS as shown, with circular section and 50 mm dia.
- Handrails to be extended by 300 mm beyond the steps / ramps
- Handrails to be provided everywhere at 2 heights – 900 mm and 760 mm both
- Handrails to be given a colour that contrasts with the surrounding wall
- Tactile strips/Braille plate identifications to be provided on the handrails to indicate locations

PROPOSED MODIFICATION OF THE STAIRCASE

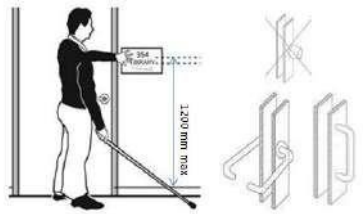
STANDARD EXAMPLES OF ACCESSIBLE HANDRAILS

DOORS AND DOORWAYS

- Thresholds / level differences/ door mats / protruding channels at door openings to be removed / bevelled flush to the floor .
- Thresholds of doorways should not exceed 5 mm. Raised threshold and floor level changes at doorways should be levelled off with a slope on each side of a threshold. The slope may be a simple, movable ramp.
- Handles, pulls and others opening devices are to have a shape and height that is easy for a person with reduced strength and dexterity to control. All door handles to be circular in section , provided at standard height of 800 mm.
- Lever handles and push type mechanisms are recommended. (When a sliding door Is fully open, handles should be usable from both sides.)
- Kick-plate of 300-400mm height are recommended for door in high- use in order to protect the push side of doors from damage.
- The use of colour(contrast) to distinguish doors from surrounding walls is very useful for people with visual impairments.
- Multilingual and braille Signage to be provided as per standard guidelines.



SIGNAGE ON TOILET DOORS



BRAILLE SIGNAGE POSITION AND RECOMMENDED HANDLES

BEVELLING AT THRESHOLD

D SHAPED HANDLE

DOORS AND DOORWAYS

Proposed accessible room signage.

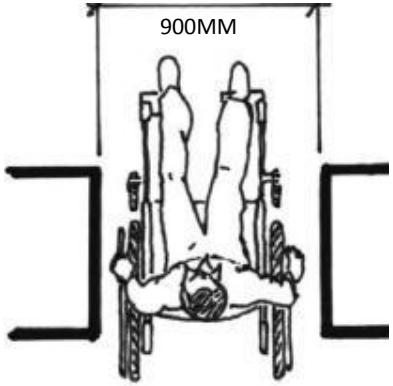
Accessible room signage not provided.

RECOMMENDATIONS

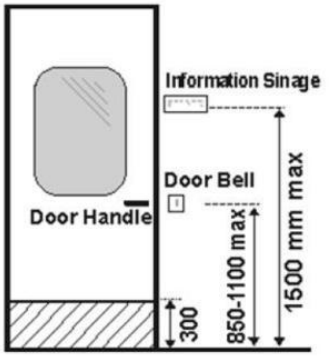
- The raised thresholds provided at door openings of all doors to be removed.
- Instead metal / pu door seals with high quality rubber seal is proposed to be fixed to the door to avoid snakes / mosquitos / rodents etc.
- It shall serve as a sound proofing measure too.

DOORS AND DOORWAYS

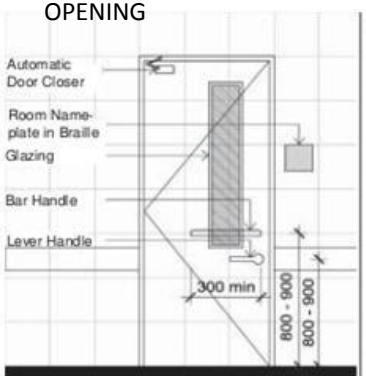
- Door location should be prominent with sufficient space for access.
- Door for wheelchair access should have a level landing area after the door swings.
- Minimum width of the door should be 900mm to allow access for wheelchair users.
- Thresholds of doorways should not exceed 10 mm. Raised threshold and floor level changes at doorways should be levelled off with a slope on each side of a threshold. The slope may be a simple, movable ramp.
- Handles, pulls and others opening devices are to have a shape and height that is easy for a person with reduced strength and dexterity to control. All door handles to be circular in section , provided at standard height of 800 mm.
- Swing door is preferable than sliding door. When a sliding door is to be used, the handle should be usable from both sides.
- Lever handles and push type mechanisms are recommended. (When a sliding door Is fully open, handles should be usable from both sides.)
- Door stoppers to be provided to all doors.
- Kick-plate of 300-400mm height are recommended for door in high- use in order to protect the push side of doors from damage.
- The use of colour(contrast) to distinguish doors from surrounding walls is very useful for people with visual impairments.
- Multilingual and braille Signage to be provided as per standard guidelines.
- Installing offset hinges to widen doorways if possible where ever width is less than 900mm.
- Doors with closures should take at least 5 seconds to move from open position (90 deg) to 12 deg.



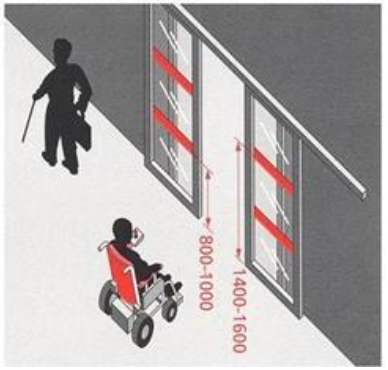
MINIMUM CLEAR WIDTH OF OPENING



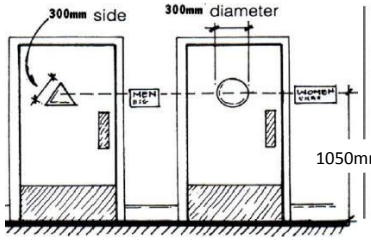
KICKPLATE DETAIL



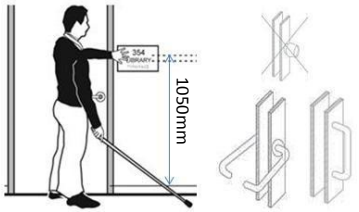
LEVER HANDLE POSITION



GLAZED DOORS WITH CLOUR BANDS



SIGNAGE ON TOILET DOORS



BRAILLE SIGNAGE POSITION AND RECOMMENDED HANDLES

BEVELLING AT THRESHOLD

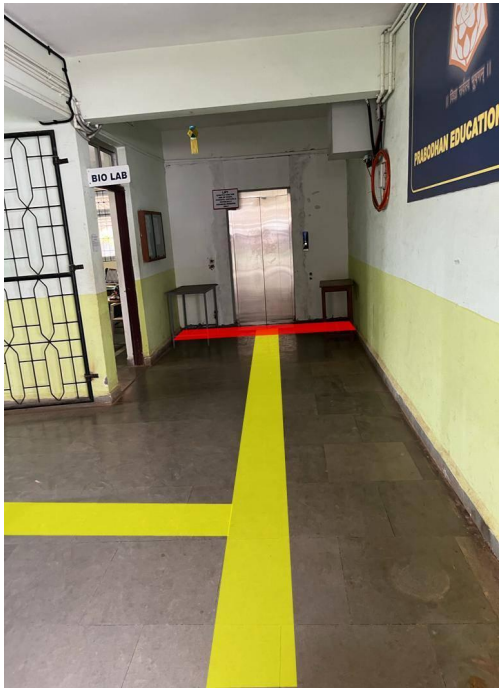
D SHAPED HANDLE

INTERNAL ENVIRONMENT
LIFT / ELEVATOR

KEY ISSUES

- All the lifts that provide access to the upper floors are not of size as per standards.
- There is insufficient accessible signage directing to the lift.
- No tactile guiding path provided
- The control panel is not tactile and in braille and not mounted at accessible height .There is no mirror on rear wall.
- Audio signage provided in all the lift cars, except the one in admin block.
- Signage in the lift not as per standards.

Signage in the lift not as per standards.



Proposed tactile guiding path leading to the lift.

ACCESSIBLE LIFTS

RECOMMENDATIONS

The proposed lifts to be provided as per the following standards.

- The size of the lift car to be large enough to accommodate a wheelchair 1500mm x 1500mm min.
- The clear opening size of the lift to not be less than 900mm.
- There should be signage and tactile guiding path in the floor directing to all the lifts.
- Non reflective and anti skid matting to be provided and flushed with the surrounding floor to avoid level difference while entering the lift.
- A mirror to be installed on rear wall of both the lift cars
- There should be an audio and video system installed in the lift indicating arrival at a floor in all lift blocks.
- Handrails of 38mm dia. to be provided on all 3 sides of the lift car at a height of 800mm from the floor of the car.
- The elevator controls inside and outside the lift (including alarms /speakers/phones) should be between 800 mm to 1000mm
- They should have a good contrast and buttons should be self-illuminating, in raised numbers and Braille
- Accessible directional , multilingual and tactile signage to be provided as per standards

RECOMMENDED CONTROL PANEL

INTERNAL ENVIRONMENT DRINKING FACILITIES

KEY ISSUES

- Existing drinking water facilities are not as per standards.
- Knob type taps provided which are difficult to operate
- No tactile guiding path in the floor leading to the drinking water facility
- Insufficient and inaccessible directional and general signage
- Location of the water facilities is inaccessible by the wheelchair user.

RECOMMENDATIONS

- Minimum 1500 mm x 1500mm manoeuvring space to be provided in front of drinking water fountain
- The floor mats near drinking water fountain to be removed.
- The grating in front of the drinking water fountains in the canteen to be replaced with a new one as per standards and the floor surface to be maintained clean and dry.
- Lever type taps to be provided in all drinking water fountains
- A tactile guiding path to be provided in the floor leading to the drinking water facility
- Provision of glasses for drinking water to be made at a height of max 1200 mm
- Accessible directional , multilingual and tactile signage to be provided as per standards

THE EXISTING DRINKING WATER FOUNTAINS ARE NOT AS PER STANDARDS

Oasis drinking water fountain, Mumbai

Free standing drinking water
Fountain Best Doctor

LIBRARY - ACCESS INSIDE

RECOMMENDATIONS
Applicable accessibility standards must be adhered to.

GETTING INTO THE LIBRARY

- A person using any kinds of support such as wheelchair, crutches or walker, cane, or guide dog, should be able to enter through the door and pass-through security check points, if any, without encountering obstacles.

- All mobility aids and assistive devices including wheelchairs, walkers, communicators among others must be able to pass through security checkpoints, if any.

- Sufficient space must be provided in front of the door to allow a wheelchair to turn around.

- Entrance door should be wide enough to allow a wheelchair to enter. Non- automatic doors should be operable using one hand. Glass doors, if any, must be highlighted with contrast colour band at eye level to prevent persons with low vision banging into these.

- Stairs and steps edges must be marked with a contrasting color band.

- Pictogram signs must be provided for services and amenities such as toilets, elevators, stairways.

- Elevators, if any, must be well lit with buttons and signs in Braille and synthetic speech. Elevator buttons to be reachable from a wheelchair.

LIBRARY - ACCESS INSIDE

RECOMMENDATIONS

INSIDE THE LIBRARY

- All parts of the library should be accessible.
- The catalogs must be available in accessible formats.
- Clear and easy-to-read signs with pictograms must be provided.
- Service desks should be located close to the entrance.
- A certain number of tables and computer workstations should be adapted for persons in wheelchairs.
- Shelves must ideally be reachable from a wheelchair
- Chairs with sturdy armrests must be provided
- Unobstructed aisles between bookcases must be provided and wide enough to accommodate wheelchairs and one person not on a wheelchair.
- Visible and audible fire alarms must be provided.
- Non-fluorescent lighting. In case fluorescent lighting is used there must be an area free of visual clutter and sharp light contrasts, with plain walls and cubicles.
- Printers must be kept in areas away from reading areas to reduce sound in the reading areas.
- Suitable sound insulation to be used to minimize sound in the reading areas.
- Stack area should have clear aisle space for wheelchair and bi-lateral crutch users (3ft. min.). Where book stacking is in shelves and areas beyond reach of persons with disabilities using mobility aids, human assistance should be available to access books.
- Plants inside the space can help with air filtering, which can make a huge difference to the level of comfort.

RECOMMENDATIONS

STANDARDS FOR MATERIAL CONVERTED INTO DIGITAL FORMATS BY LIBRARIES

- Master Digital Documents of converted material must be maintained in DAISY XML format.
- All Master Digital Documents in Indic Languages must be encoded in Unicode [UTF8/16] and formatted using a royalty-free Open Type Font.
- All Master Digital Documents must be tagged according to DAISY standards to capture semantic information for parts, units, chapter headings, subsections, pagination, ordered and un-ordered list, tables, images along with their alternative text, math equations, title, author, footnote, end-note, text box, abbreviation, acronym, etc.
- Metadata information about the publication as prescribed in the DAISY Standards must be added to all Master Digital Documents.
- Distribution of digital copies of the Master Digital Documents through web sites or otherwise must be done in e-pub format.
- If other standards are used for different target populations those standards must be compliant with the National Open Standards Policy and the Interoperability Framework for E-Governance in India.
- DAISY audio format for Indic languages.

RECOMMENDATIONS

ASSISTANCE AIDS/EQUIPMENT

For assisting persons with Visual Impairment or blindness or autism spectrum disorders:

Persons with vision impairments or blindness or autism spectrum disorders would benefit from software and hardware for enlarging displays on the monitor or reading material through a speech synthesizer.

Some of the most common assistive aids/equipment are:

FOR MAGNIFICATION

1. **Screen-magnification software.** This program allows people with low vision to access computer information by enlarging the screen display or tailoring the display to accommodate their disability.
2. **Large magnification devices** such as closed-circuit television magnifiers (CCTV). This system employs a video camera lens to enlarge text from three to thirty times normal text size
3. **Handheld magnifiers**

LIBRARY

RECOMMENDATIONS

FOR SCREEN READING

-Screen reader software programs enables individuals who are blind or visually impaired to access the information on a computer screen through voice output. Some examples are NVDA (an open source software) or Dolphin or Jaws (proprietary software). Screen reading software with Indian language support must be provided.

-Scanning and reading software helps those with low or no vision. Scans printed text and verbalizes the text via synthetic speech using optical character recognition technology.

FOR BRAILLE SUPPORT –

Braille Translating Software - To produce correctly formatted and coded Braille one needs a Braille **Translation Software**. A document prepared by a word processing program is loaded into the translation software. The final document may be printed in Braille by a Braille embosser.

Braille Embosser - Braille embossers print Braille output from a computer by punching dots onto paper and enable users to make hard copies of documents.

Refreshable Braille displays and DAISY players.

All multimedia content to have audio descriptions

RECOMMENDATIONS

At least one computer must face outward and not against the wall since people with autism spectrum disorders find it disturbing to have people walking behind them.

FOR ASSISTING PEOPLE WITH HEARING IMPAIRMENT OR DEAFNESS

Users with deafness or have hearing impairments do not have problems using the computer except problems will arise from programs and websites that have audio cues.

Sound Sentry This option directs the operating system to display a visual signal when a sound is generated by a Windows application. Sound sentry in built into Windows and Apple operating systems.

All multimedia content to have captions

FOR ASSISTING PEOPLE WITH LEARNING DISABILITIES

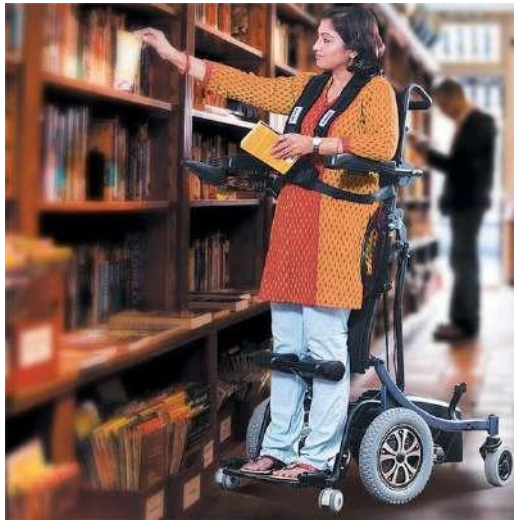
Specialized software programs and hardware for people who have learning differences will display print as well as provide auditory reading of the text simultaneously.

FOR ASSISTING PEOPLE WITH PHYSICAL DISABILITIES

Persons with physical disabilities may need assistance in using the computer apart from having physical accessibility. The following items increase computer usability and safety:

- Special input devices such as trackballs, joysticks, switches, touch pads, and augmented keyboards (micro keyboards or oversize keyboards with enlarged keys)
- A computer camera/tracker allows users to manipulate the cursor through head movement.
- Software utilities that replaces the functionality of a standard keyboard with a full-featured, onscreen keyboard.
- Speech to text software such as Dragon Naturally Speaking
- Motorized wheelchairs to be used by physically impaired users especially motorized chairs whose seat can raise so that users can reach books on higher shelves on the rack.
- Availability of reachers to access books that may be placed too low or too high on the book rack.
- Page turners

PAGE TURNERS



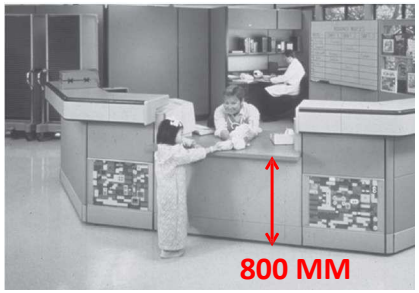
MOTORISED WHEELCHAIRS WITH RAISERS

LARGE PRINT KEYBOARD

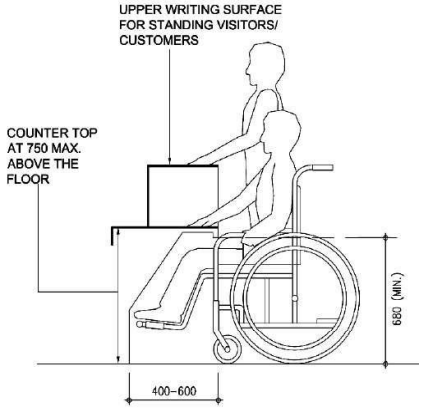
RECEPTION/SERVICE COUNTERS AND WAITING

RECOMMENDATIONS

- All existing reception / service counters to be modified as shown such that a part of the counter is between 760 mm to 800mm from the floor with a 400mm to 600mm clear recess under the counter.
- Accessible directional , multilingual and tactile signage to be provided as per standards.
- Provide tactile guiding path in the floor leading to the reception .
- Provide a tactile pictographic map of the building near the counter
- Reserved waiting spaces for wheel chair users to be demarcated (750 x 1200mm)
- Provide tactile guiding path in the floor for navigating through the waiting lounge independently for PwVI
- Accessible directional , multilingual, braille and tactile signage t be provided as per standards



EXAMPLE OF AN ACCESSIBLE SERVICE COUNTERS

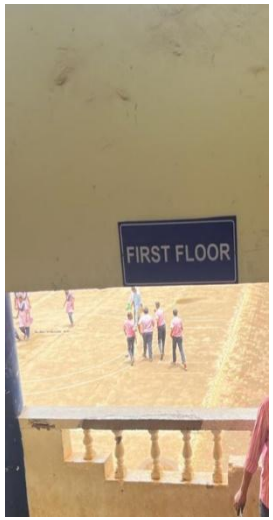


KEY HEIGHTS OF RECEPTION / SERVICE COUNTERS

11. SIGNAGE/WAYFINDING

KEY ISSUES

- Appropriate signage has not been provided for existing accessible facilities in the buildings.
- There are no directional signs in the entrance areas /lobby/corridors / stairs indicating the location of accessible facilities like ramps, drinking water fountain, toilets and emergency exits.
- Signage and their sizes are not clear, uniform and easy to read, thus it does not comply with international standards .
- The surface of the sign is not processed so as to prevent glare.
- All signage are not multi lingual and provided in English, Hindi and local language.
- All visual signage are not provided with Braille and Tactile supplements.



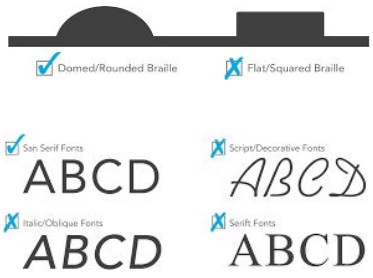
SIGNAGE/WAYFINDING

KEY ISSUES

- There is no prominent visible signage using the international symbol of accessibility identifying/advertising/signifying accessible entrance and exit, reserved car parking, presence of toilets for persons with disabilities, drinking water fountain, and availability of special services.
- There are no directional signs in the reception/lobby/corridors / ticket counter/ stairs indicating the location of accessible facilities like drinking water fountain, toilets and emergency exits.
- Signage and their sizes are not clear, uniform and easy to read, thus it does not comply with international standards Maps, information panels and wall-mounted signs are placed at a height between 900mm and 1800mm.
- The surface of the sign is not processed so as to prevent glare.
- All signage are not multi lingual and provided in English, Hindi and local language. / mostly in local language only.
- All visual signage are not provided with Braille and Tactile supplements.
- There is inadequate illumination of visual signage.

SIGNAGE ALL AROUND THE CAMPUS IS NOT PROVIDED IN BRAILLE. THERE IS INSUFFICIENT DIRECTIONAL SIGNAGE

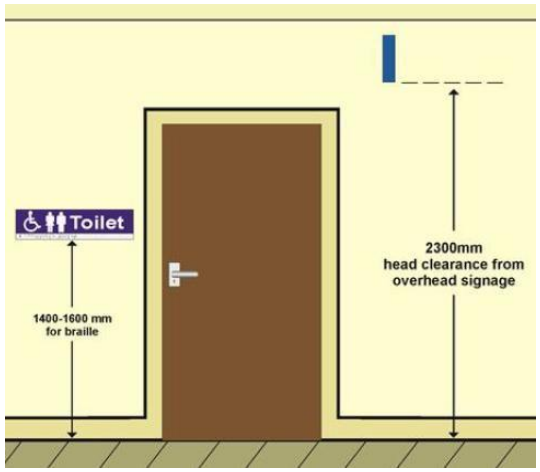
SIGNAGE/WAYFINDING



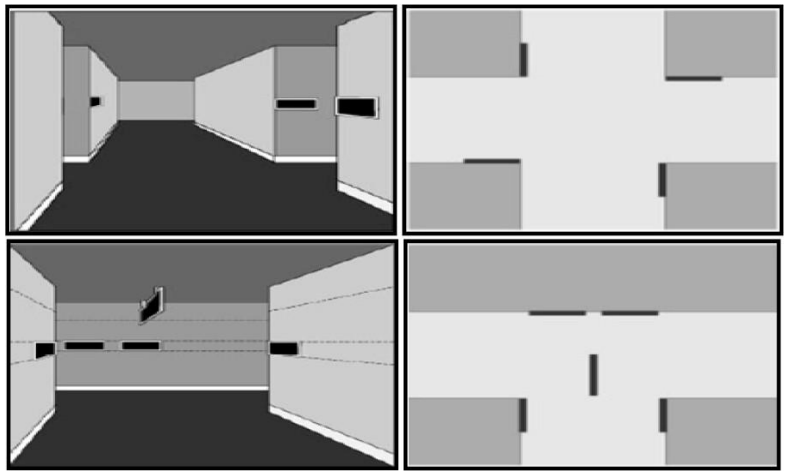
Recommended fonts

Tactile Signs

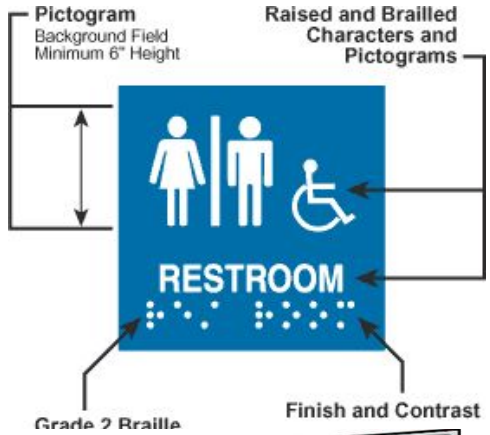
Tactile Pictographic Map

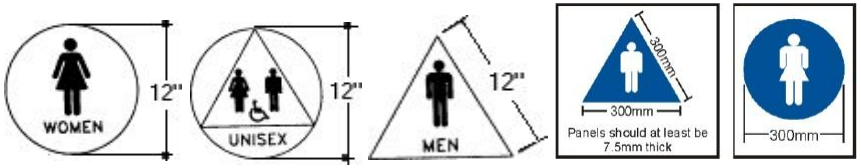


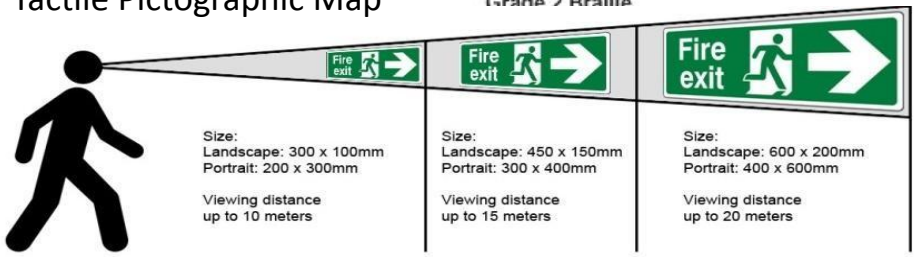
Heights and location of signage



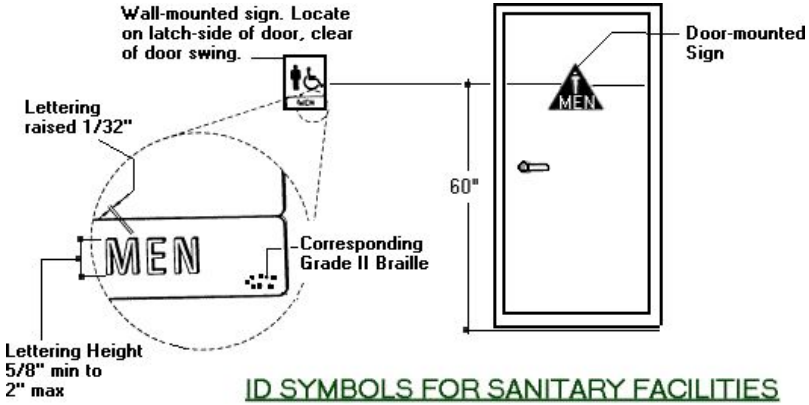
Location Of Signage in circulation spaces







Viewing distances

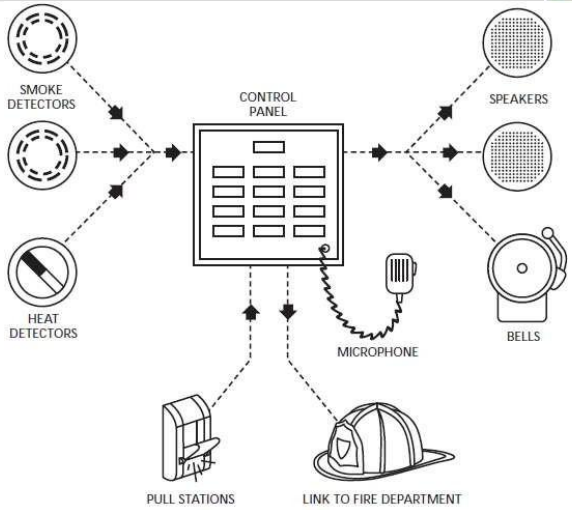


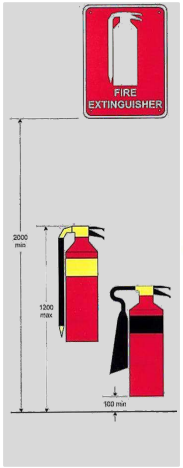
Details of Signage on Doors / Toilet doors

EMERGENCY EVACUATION

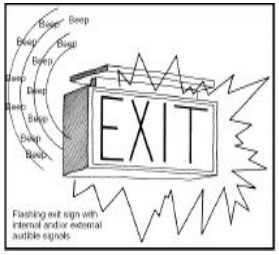
RECOMMENDATIONS

- Emergency evacuation strategies, that include provision for people with disabilities, should be developed for the entire site.
- Emergency evacuation strategies should consider the particular difficulties faced by people with disabilities – on recognition time, response time and movement time.
- There should be a step free or ramped accessible evacuation route identified leading to the exit or the ramp or to the refuge area.
- Where the site covers more than one level evacuation chairs should be provided with staff trained in their correct use.
- There should be sufficient levels of trained people on site to manage an evacuation strategy.
- Emergency exits, access and escape routes should be clearly signposted with directional arrow signs.
- Escape signs should be well lit and have tactile surfaces.
- Emergency exit routes should be on level ground with no obstacles.
- Evacuation plans should be prominently displayed. The plan should be of right size and easy to read .
- The evacuation plans and building maps should be available in tactile Braille formats
- Sufficient number of fire extinguishers should be provided at the height between 1000mm and 1500mm .
- The alerting buttons should be between 600-1200mm from the floor and should have a high contrast with the wall.
- Consideration can be given to other ways of raising the alarm including visual alarms, paging system, vibrating devices and tailoring of the sound frequencies delivered.
- Refuge areas can be provided within protected stair enclosures.
- Directional sound systems can be installed as they can be tailored to identify particular building features such as stairs or emergency exits and indicate the vertical direction to be





EMERGENCY EVACUATION USING EVACUATION CHAIR



RECOMMENDED SIGNAGES ON EVACUATION ROUTES

INTEGRATED DISASTER MANAGEMENT SYSTEMS

ACCESS TO INFORMATION AND EQUAL OPPORTUNITY POLICY

INFORMATION AND COMMUNICATION

1. The website should provide information about the building/service and should comply with web accessibility standards
2. There should be the information detailing all the accessible facilities in the building with photographs
3. All publications/brochures should be available in alternate accessible formats such as : Braille, large Print, audio, pictorial (wherever possible), easy-to-read, plain language, available in Hindi& English, accessible electronic formats that can be shared over email or mobile platforms.
4. Printed service related documents such as forms, menu cards, etc. should be in accessible formats.
5. There should be an option of filling forms electronically through an accessible software.
6. Staff members should be trained in Indian Sign Language interpretation. If not, then Sign language interpreters should be available on call.
7. Assistive technology such as Loop hearing systems, Audio orientation tools, interpretative video's or audio tours in with captioning or sign language, wheelchairs etc. should be available.
8. Adequate support should be provided for persons from different cultures, learning disabilities, those not formally educated, in all the above provisions.

TRAINING AND POLICY

1. Disability sensitization sessions should be part of the staff / faculty / students induction program.
2. Staff should be trained to assist persons with disabilities, including persons with learning disabilities.
3. Staff should be trained in basic Indian sign language.
4. Staff should be aware of the accessible facilities that are available and know how to operate them.
5. All accessibility equipment should be checked regularly and maintained well.
6. There should be a grievance redressal cell for a student with disabilities to lodge a complaint or make suggestions.
7. There should be a plan to improve accessibility over a set timeframe.
8. Trained live assistance should be available in premises for all disability constituencies where it may be required.
9. There should be an equal opportunities policy within the organization to promote the employment of staff with disabilities.
11. Policy should include commitment to reasonable adjustment of work place environment to accommodate new staff and students with disabilities.
12. Organization should have disability focal person in charge who manages the concerns of employees and clients with disabilities.