ACCESS AUDIT REPORT

DELHI TECHNOLOGICAL UNIVERSITY
New Delhi

Submitted under:

Sugamya Bharat Abhiyan
(Accessible India Campaign)

: Prepared By:

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INDEX

S.No.	Content	Page Nos.
1.	Introduction :	3
2.	Legal Framework	4
3.	Introduction: Access Audit	5
4.	Objective and Standards	5
5.	Principles of Audit	6
6.	Audit Team	6
External Environment : Observations/ Recommendation-		-
7.	Introduction of Building	7
8.	Parking	8-9
9.	Alighting ,	10
10.	Accessible Route	11-13
11.	Signage	14-16
Internal Environment : Observations/ Recommendation		
12.	Accessible Entrance and Ramp	17-19
13.	Reception & Lobby	20-21
14.	Staircase and Handrail, Elevator/Lifts	22-26
17.	Control and Operating Mechanisms	27
18.	Emergency Evacuation	28-31
19.	Corridor	32-33
20.	Door and Doorways	34-35
21.	Drinking Water	36
22.	Flooring and Furniture	37-40
23.	Common Building Elements	41
24.	Toilet	42-45
25.	Information, Communication and Services	46
26.	General Summary and Recommendations	47-48
27.	Technical Specification and Recommendation	49-57

INTRODUCTION

This refers to Accessible India Campaign **(Sugamya Bharat Abhiyan)** launched by the Department of Empowerment of Persons with Disabilities **(DEPwD)**, Ministry of Social Justice Empowerment **(MSJE)**, Govt of India, in 3rd Dec, 2015 for achieving universal accessibility for persons with disabilities and to create an enabling and barrier free environment, with a focus on three verticals of built-environment accessibility, transportation system accessibility and information and communication eco-system accessibility as a nationwide campaign for achieving accessibility for persons with disability based on Universal Design principles.

The task involved under the initiative, include identification of important public buildings, conducting access audits and retro-fittings of ramps, lifts, toilets, and signage in the buildings; making 75 important railway stations and all international airports fully accessible and ensuring that at least 50% of all web sites and public documents of the central and the state governments meet accessibility standards. Specific timelines have been set all the above goals.

Association for Disabled People, a not-for-profit organization working in the field of disability for the past around 18 years was an empaneled organization under the **DEPwD**, **MSJE**, Govt. of India. ADP has done Access Audit more than 137 buildings under the first & second of AIC at Kanpur, Nagpur, Surat, Vadodara, Vishakhapatnam and Ahmadabad. Also in 3rd phase of AIC under Divyangjan Sashaktikaran Vibhag, Govt Uttar Pradesh we have done 143 buildings at Aligarh, Mathuta and Meerut. The Tamil Nadu Govt has launched the Access Audit in Tamil Nadu. Under the said initiative, ADP done access audit of 69 Govt buildings (Block Developments Office, Taluk Office/ Revenue Davison Office and Tourist Places in Vellore, Krishnagiri and Dharmapuri, districts. Including Shri Banke Bihari Mandir Vrindavan and Shri Krishna Janmabhoomi Mathura.

INTRODUCTION: ACCESSIBILTY (Accessibility in the built-environment):

Environmental access is a set of norms and standards designed to provide safe and independent use of varied environments such as transportation, roads, buildings and communication by persons with disabilities. Universal design is a commitment for designing products and environments for the broadest population possible, especially for the people who have not been considered as part of the general population.

The Legal Framework

The importance of promoting greater access as an effective approach to reversing exclusion and enhancing the equalization of opportunities in a sustainable way has been the mandate of the ***United Nations Convention on the Rights of Persons with Disabilities*** (UNCRPD), approved by the General Assembly in December 2006, ratified by India on October 1, 2014 and which entered into force in May, 2008.

The Convention also mandates that all Governments shall take measures for implementation of minimum standards and guidelines for accessibility of facilities and services open to the public; to ensure that private entitles that offer facilities / services open to the public comply with all aspects of accessibility for persons with disabilities; train stakeholders on accessibility issues; provide Braille signage and live assistance, professional sign language interpreters to facilitate accessibility to buildings and other facilities open to the public.

Further, Goal No. 3 of the ***Inchon Strategy***, which provides the Asian and Pacific Region and the world first set of regionally agreed distinct inclusive development goals, mentions that access to the physical environment, public transportation, knowledge, information and communication is a precondition for persons with disabilities to fulfill their rights in an inclusive society.

Article 9 of the UNCRPD on "Accessibility" stipulates that persons with disabilities are to be enabled to live independently and participate fully in all aspects of life. The Article casts an obligation on all signatory governments to "….take appropriate measures to ensure to persons with disabilities access, on an equal basis with others, to the physical environment, to transportation, to information and communication, including information and communications technologies and systems, and to other facilities and services open or provided to the public, both in urban and in rural areas….."

Sections 40, 41, 45 and 46 of *The Rights of Persons with Disabilities Act 2016*, categorically provides for nondiscrimination in education, transport, the roads, built environments and information and technology.

ACCESS AUDIT:

Purpose of an access audit:

The purpose of an access audit is to assesshow a particular building or environment performs in terms of access and ease of use by a wide range of actual and potential users, including person with disabilities and to recommend access improvements. The aim of the access audit and its follow-up are to:

- ✓ Identify the extent of the problem of access to public buildings and recommend changes additions to make the environment accessible
- ✓ To create awareness of the importance of the concept of barrier-free environments for persons with disabilities
- ✓ To enforce the inclusion of accessibility for persons with disabilities in the official agenda of government and private agencies.

The report includes observations, measurements, sketches and photographs covering all parts of the public building audited including the external and internal environment as well as the services provided in the building.

OBJECTIVE:

The objective of the campaign is to create mass awareness for accessibility, which will enable persons with disabilities to live independently and participate fully in all aspects of life. The buildings being audited shall be judged for the accessibility based on standards and the identified barriers will be looked into to enhance accessibility.

STANDARDS:

Access Audit done under the said Handbook, reference has been taken from the ***Harmonised Guidelines and Space Standards for Universal Accessibility in India-2021*** of the Ministry of Urban Development Government of India.

The **National Building Code** of the Ministry of Urban Development Government of India.

The accessibility standards and parameters adhered to in the instant access audit are as per the revised guidelines (2014) of the **Central Public Works Department Manual, *Handbook on Barrier-Free and Accessibility***.

PRINCIPLES OF THE AUDIT:

The Access Audit has been undertaken to appraise defined areas of the existing buildings/campus to access the extent of accessibility to services and facilities and propose the extent of works required to improve the current facilities in accordance with the definitions of the Disability Discrimination Act1995. The audit takes into account the needs of people with mobility impairments (including wheelchair users) and sensory impairments. The audit will identify physical barriers to access against pre-determined criteria. The audit should be treated as the starting point of an ongoing access plan, constantly updated by the committee. This audit should only be seen as snapshot of the position at the time of the report. Changes made after the site inspection may improve or reduce levels of accessibility.

AUDIT TEAM:

S.No.	Name	As
1.	Mrs. Suvarna Raj	Access Auditor & Wheelchair User
2.	Mr. Manoj Kumar	Architect
3.	Ms. Komal	Office Staff
4.	Mr. Pradeep Raj	Report Writer

Access Audit Report:

This report gives a narrative outline of existing facilities and also lays down the areas of concern with pictorial illustrations of the existing infrastructure. The report comes with an annexure which is a compilation of recommendations with technical details along with photographs and suggestions.
The Audit is structured into three parts, viz, the external environment, internal environment and information, communication and services.

Introduction of Building:

DELHI TECHNOLOGICAL UNIVERSITY

NEW DELHI

Delhi Technological University (**DTU**), formerly known as **Delhi College of Engineering**, is an engineering university located in New Delhi, India. It is one of the oldest engineering colleges in India and Delhi's first engineering college. It was established in 1941 as Delhi Polytechnic and was under the control of the Government of India. The college has been under the government of the National Capital Territory of Delhi since 1963 and was affiliated with the University of Delhi from1952 to 2009. In 2009, the college was given state university status, thus changing its name to Delhi Technological University. Till the year 2009, DCE shared its admission procedure and syllabus for various B.E courses with their other branch known as Netaji Subhas Institute of Technology, formerly DIT, which were prescribed by Faculty of Technology, University of Delhi.

It offers courses towards Bachelor of Technology (B. Tech), Master of Technology (M. Tech), Doctor of Philosophy (Ph.D.) and Master of Business Administration (M.B.A) and contains fourteen academic departments with a strong emphasis on scientific and technological education and research.

Academic Staff: 442(2017),

Students: 8356 (2015-2016)

Vice-Chancellor Prof. J.P. Saini,

Chancellor Shri Vinai Kumar Saxena

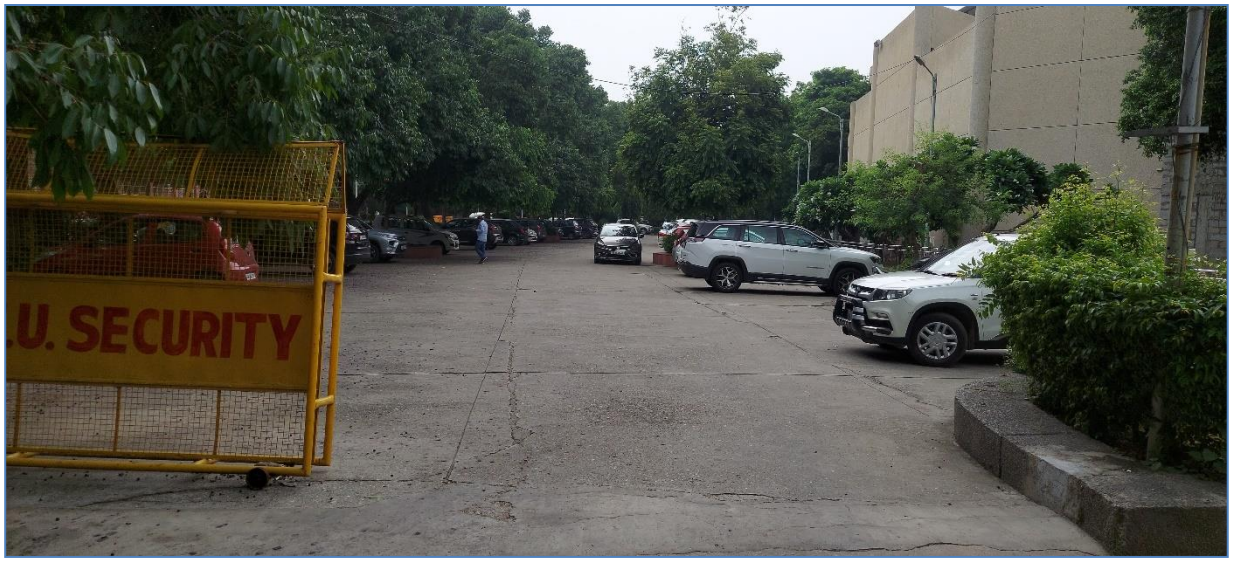
Contact Person, Deputy Registrar (Anil Kumar: sampark2anil@gmail.com**)**

EXTERNAL ENVIRONMENT

The external environment includes the following:

Parking Lot

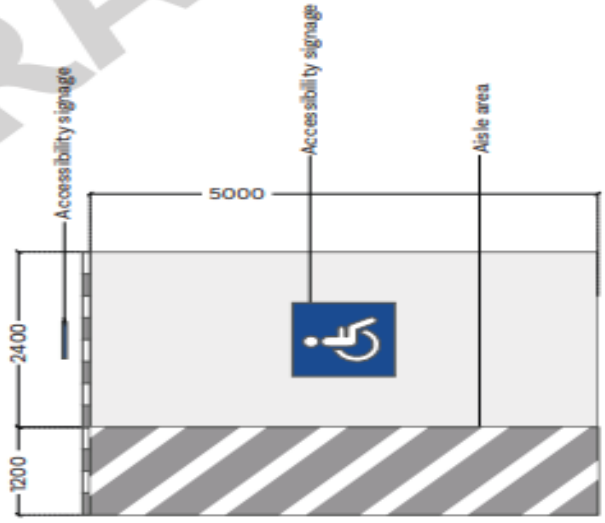
There is designated parking for staffs & visitors for two wheelers as well as four wheelers also there is no reserved car or two wheeler parking for persons with disabilities as per the accessibility guidelines.



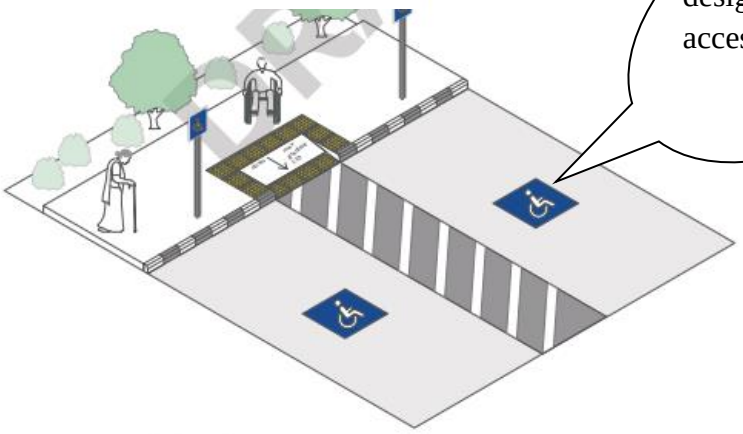
Accessible parking by proposed near the Entrance

Recommendation / Priority: Parking Lot

Subject	Recommendation
Parking and Signage 	1. Availability of 2 bays should be reserved within 50 to 100 m from admin building 2. Size of the bay 3600 x 6000mm 3. Signage as per requirement 4. Tactile floor guidance in the parking area for independent mobility for persons with blindness and low vision. Specifically, routes guiding from parking area to entry points of buildings, emergency exits. 5. Proper lighting (during evening hours) along with accessible parking /directional signage as per CPWD guidelines should be installed at the parking bay.



Reference designs for accessible parking



Alighting

Right now, there is no designated space for alighting of people with disabilities. But after the parking bay for people with disabilities has been identified and transformed, there is space to design one alighting point with required signposts, step free access and tactile guidance.

Recommendations: Alighting

- Alighting point has to be constructed next to the parking bay.
- Alighting point should be leveled and cleared out of traffic lane.
- Proper sign-posts and signage to be installed along with tactile guiding path including directional, hazard warning and positional tiles directing to the entrance.
- There should be a step free route leading from the alighting point to the main entrance of the buildings

Accessible Route

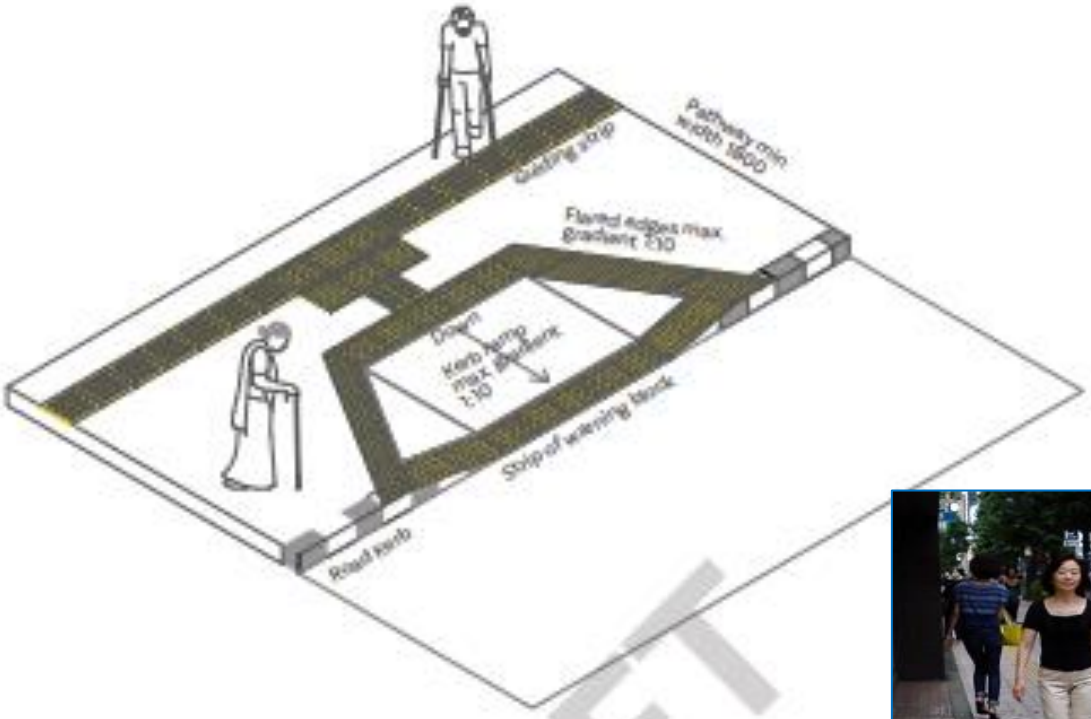
The University is accessed by one main gates meant for vehicular and pedestrian entry and exit. There is security post at main entrance gate. There is pedestrian walkway in the office that is separated from the vehicular roads. The road is not accessible on some places for visually impaired persons as there is no tactile path. **We found some barriers also signages and some places tactile path is missing.**

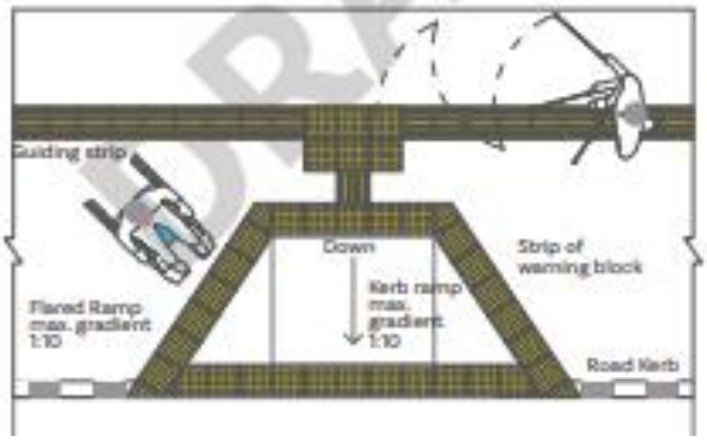
Routes with or without tactile

Recommendations: Accessible Route

Subject	Recommendation
Accessible Route	1. A small access route connecting the building to the parking through the road can be created. The accessible path should ideally have a minimum width of 1200mm, preferably covered, free of any barriers or obstacles and is to be constructed away from vehicular traffic route in the premises. In the present scenario, the accessible route, for limitation of space, can be around 900 mm wide. 2. The route should have guided path(tactile paving) including directional, hazard warning and positional files provided for independent navigation across all the chief functions at the building. 3. There should be curb ramps in case there are any level changes between the traffic lane and the accessible path. 4. There should be accessible directional signage directing to the accessible entrance. 5. The area should have adequate artificial light after sunset hours. 6. Tactile guiding path including directional, hazard warning and positional tiles provided for independent navigation across all the chief functions at the building 7. Resting spaces and wheelchair parking spaces outside the line of traffic incases where the walking distance is more than 300mm. 8. accessible directional signage directing to the accessible entrance Adequate artificial light on the path after sunset

Route Signages



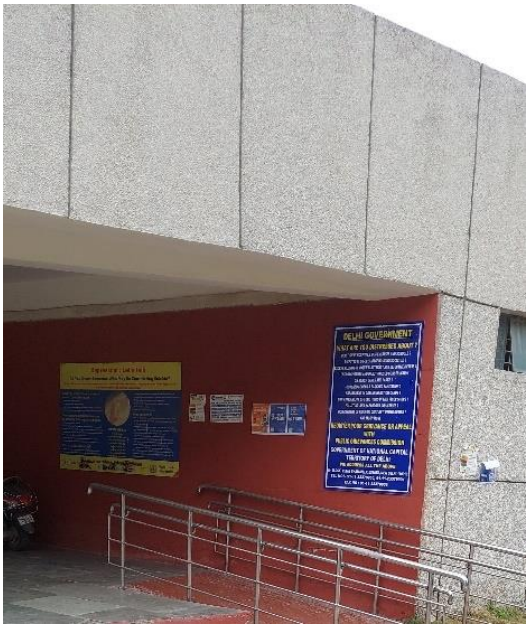


Pathway min. width 1800

Signage

Now the Office has.

- International Standards for symbols of accessibility is missing.
- The signage size and placement is complying with the handbook specifications.
- **Audio Signage along with Braille and Tactical Signage is missing.**
- All the signage's are in high color contrast.
- All the signage is well illuminated.
- **Visual and auditory public address system is missing**
- **Provide external signage's near entrance gate.**
- **Implementation as part of specific regular maintenance/renewal.**



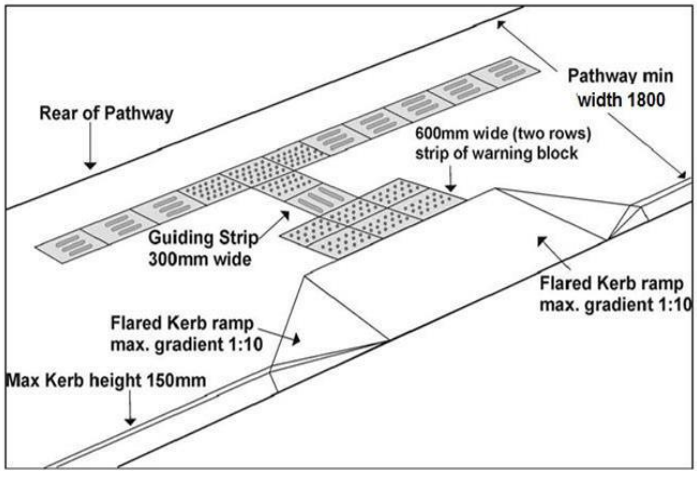
Signage's

Recommendations: Signage

Subject	Recommendation
Signages	1. International Standards for symbols of accessibility to be installed where appropriate in entire premises 2. The signage size and placement have to comply with the handbook specifications. 3. Audio Signage to be installed along with Braille and Tactical Signage. 4. All the signages have to be in high color contrast. 5. All the signage has to be well illuminated. 6. Visual and auditory public address system to be installed. 7. Provide external signage's near entrance gate. 8. Implementation as part of specific regular maintenance/renewal.

Sample designs for accessible path and signage

Ref. image for Site Map



Direction Identification

Internal Environment

The internal environment includes the following:

Observations: - Accessible entrance and Ramp

- **There is no accessible identification signage to identify the entrance. Audio signals are also missing.**
- There is an entry ramps in all premises like collage building, classroom stage etc. with both side two heights railing as per the accessibility guidelines the gradient of ramp is 1:11(standard 1:12 / 15 gradients.)**Also there is only one side railing in some places and no tactile marking to accessible for persons with disabilities.**
- Entrance area is illuminated.

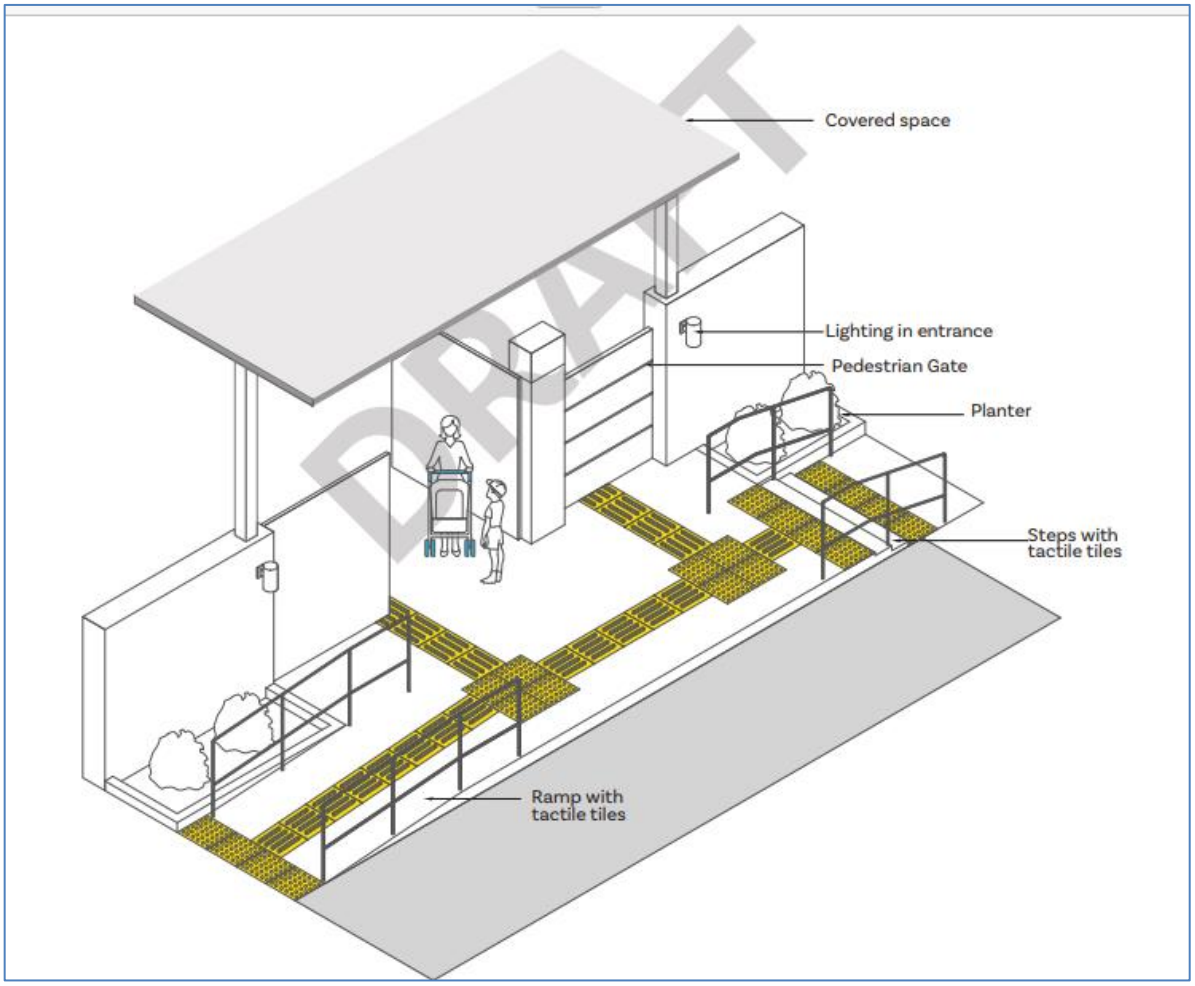
Ramps with railing and without railing

Auditorium

1. Auditorium Stage is not accessible for PWDs. Steps without a ramp.
2. Classroom Stage is not accessible for PWDs. Steps without a ramp.
3. Lighting arrangement of stage is proper. Sufficient lighting that falls on the speaker is a must to enable persons with hearing impairment to lip read.

Recommendations: Accessible entrance and Ramp

Subject	Recommendation
Accessible entrance and Ramp 	1. The existing stairs and ramps to be made disabled friendly with railings as per specifications 2. Accessible identification signage to be installed at the entrance, complying with the CPWD guidelines. 3. Audio signals should also be installed in the entrance doorway. 4. Provide accessible ramp as per the accessibility guidelines everywhere the entrance should have an audio signal.



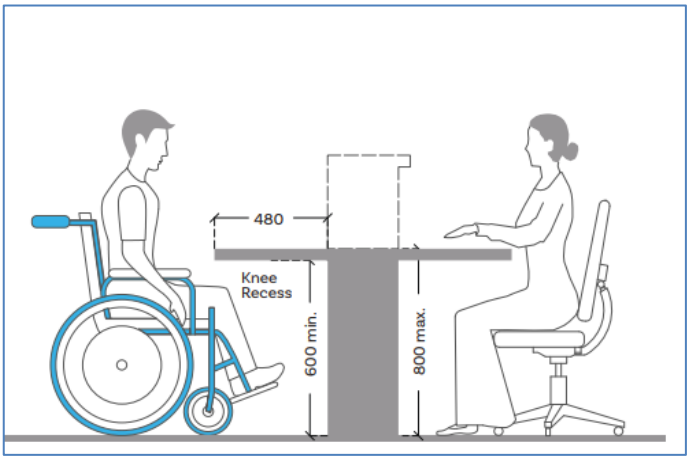
Reception and lobby:

There is reception counter at the administrative block, library, guest house etc., entrance which was not accessible for PWDs, counter height more than1000mm.There is no signage that leads to the reception and hence-forth to various building facilities .Only signage of department/unit name is present. The office also does not have Audio-Induction Loop and Accessible Printed Information for people with disabilities. There is live assistance available at the counter to guide people to their destination. None of the staff are trained to communicate in Indian Sign Language. Also we found biometric machine in reception area which heightis1710mm, it is very high

Reception counter, canteen counter and biometric machine

Recommendation: Reception and Lobby

Subject	Recommendation
Reception and Lobby	1. A reception counter to be Installed as per the CPWD guideline (Refer to Reception and Lobby in Appendix)The receptions desks to have clear recess of 400 mm x 600 mm under the desks. Desks should have clear color contrast with the background wall and should be non-reflective.There should be accessible identification signage for the reception. 2. There should be accessible directional signage directing to various building facilities at the reception. Induction Loop to be installed to aid people with hearing disabilities. 3. Printed information to be made available in all accessible alternate formats, e.g., Braille, Large Print, Audio, Pictorial, Easy-to-Read, Plain Language, available in Hindi and English and Accessible Electronic Formats that can be shared over email or mobile platforms. 4. At least one sign language interpreter should be on call for the office.(if applicable)

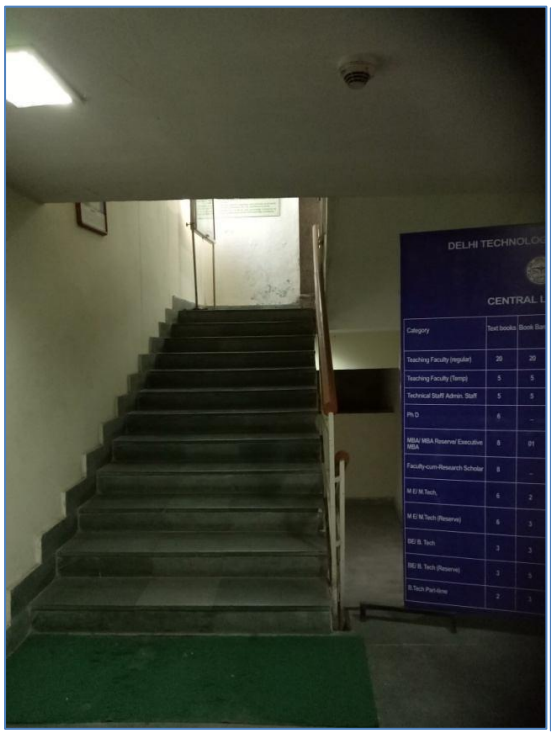


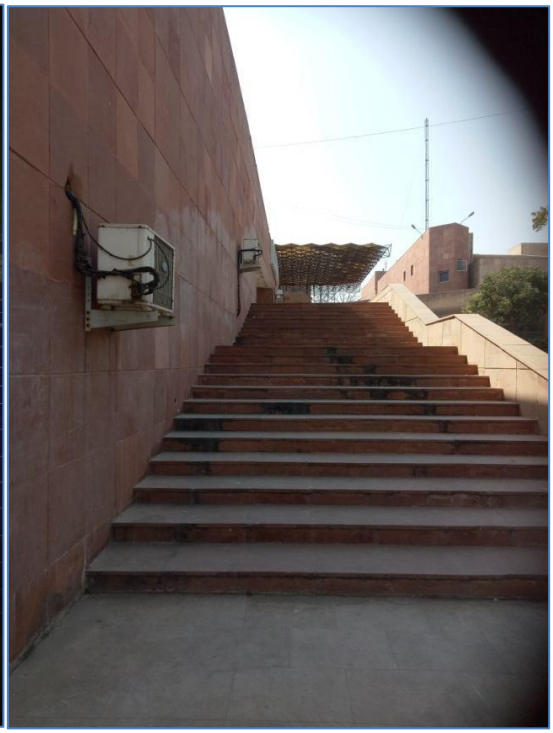
Sample design for reception

Staircase and Handrails: Elevators / Lifts:

- All floors are accessible as there is staircase and lift both present in the building to access.
- The elevator car has a internal space of 1260mm/1050mm, The elevator door width is 800mm wide, There are handrails on both the sidewalls and the rear wall of the lift car 930mm, A rear mirror is present in the car 1050mm, inside button height 1250mm and outside button height 1170mm. There is no signage directing to the accessible lift, The lift has not a live attendant when required and at all times for public buildings with a heavy footfall
- The steps in all blocks have uniform risers and treads of 150 mm and 300 mm respectively with one side railing 950mm.
- The staircases are well illuminated but there are missing tactile floor guidance, color contrast strips at edges of steps and warning tiles at the beginning and end of each flight.
- Stairs are non slippery and non-glary and run straight and uniformly without any abrupt breaks or gaps in between them.
- Handrails not installed on the side of the walls have the desired minimum hand clearance of 50 mm between handrails and walls.
- The staircase flights have cemented handrails on one side at a single height of, non-slippery, have uninterrupted grip and have no sharp edges.
- Staircase headroom is open in all blocks which is hazard for PWDs.

- Every hostel has no lift only staircase there,
- The department of training & placement has no ramp, there is a girl who said she facing problems everyday because absence of lift.
- Also library has no lift only staircase there
- Central court yard of hostel is inaccessible for PWDs and there are only steps and no ramps to cater to the level differences.
- Area below every hostel staircase (headroom) hazards for visual impaired should be cordoned off.

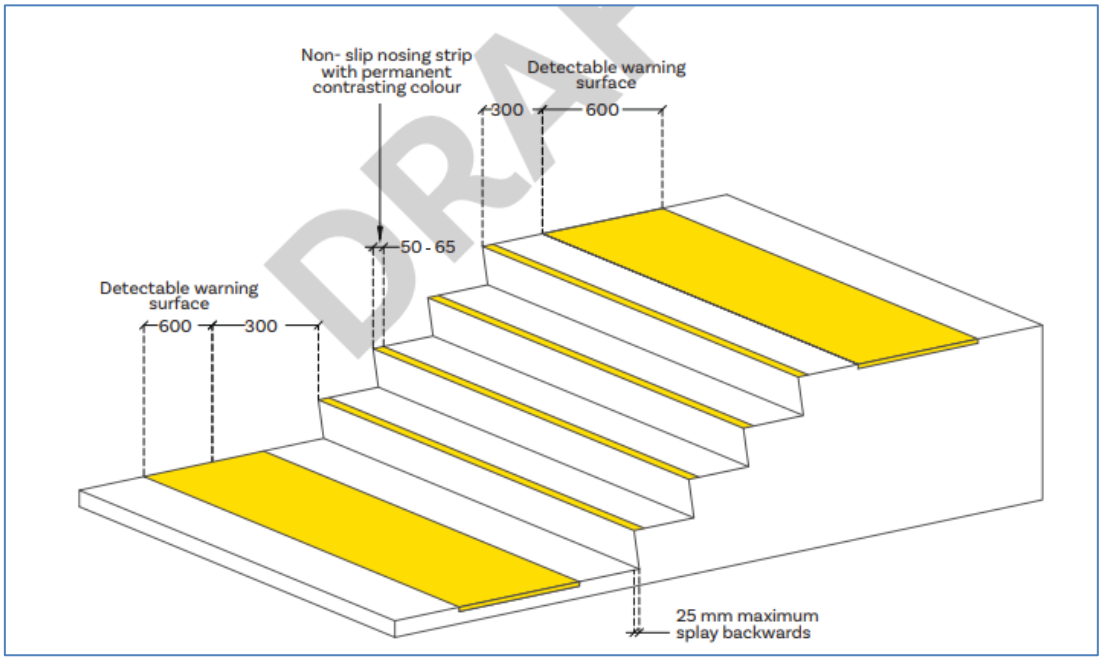


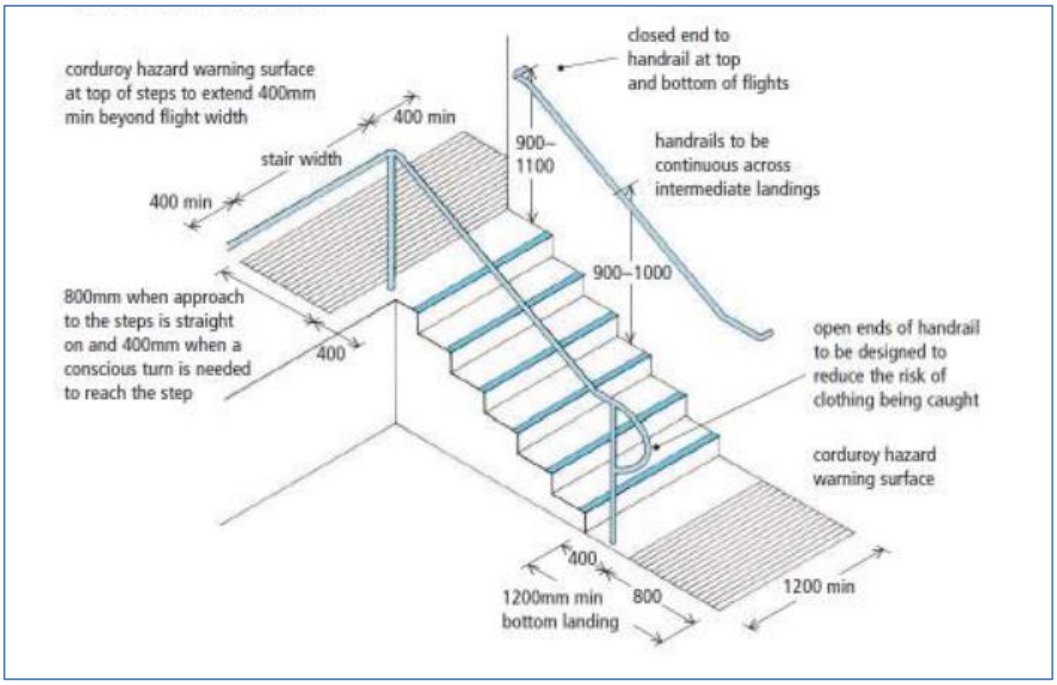


Hostel, Library staircase, Dept of Training & Placement no ramp

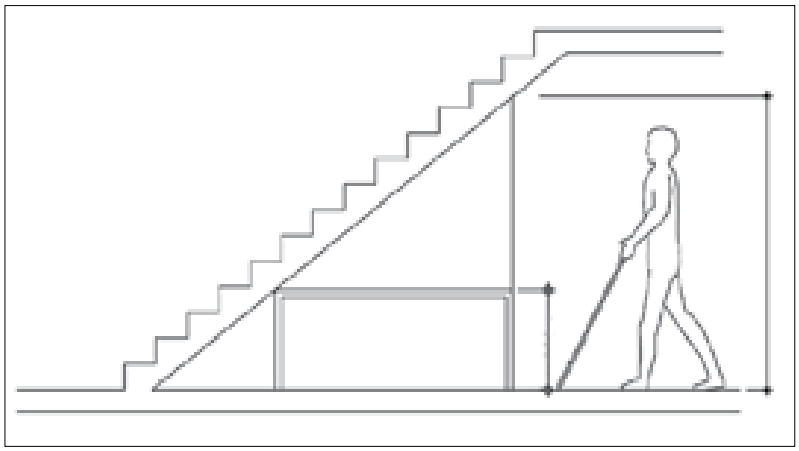
Recommendation: Staircase and Handrails

Subject	Recommendation
Staircase and Handrails	1. Color-contrasting strips to be installed at the edge of the steps. 2. Treads and walls of a staircase shall be in contrasting colors. 3. Tactile warning strips shall be provided at landings and at both the bottom and top ends of a staircase, regardless of the number of steps it comprises. For landings leading to a floor or those enclosed by wall, railing or balustrade, tactile warning strips of 300mm in width shall be provided; for those leading to an open space or the entrance / exit of a building, the tactile warning strips shall be 600mm in width. In this case, Braille and tactile information signs shall be provided on the adjacent wall to indicate the presence of an opening. 4. Hand rails to be installed at two heights of 760mm and 900mm. 5. Handrail to ramp and step shall be fixed not less than 35mm and not more than 50mm clear of wall and with a clear height of 70mm from the top of the bracket to the top of the handrail. Handrail shall be tubular, not less than 40 mm and not greater than 50mm in external diameter and in other shapes that can provide the user a grip similar to that specified in the case of tubular handrails. 6. Handrail shall extend horizontally not less than 300 mm beyond the first and last nosing of every flight of steps or beyond the ends of a ramp and terminate into a closed end which shall turn down or return fully to end post or wall face and which shall not project into a route of travel. 7. Handrail finished in more noticeable colors with Braille and tactile information should facilitate self-help circulation of persons with visual impairment. 8. Handrail should have a minimum luminous contrast of 30% with the surrounding wall surfaces. 9. Area below staircase (headroom) hazards for visual impaired should be cordoned off.





Head room cordoned off



Recommendation for Elevator/Lift

- Step free access from the entrance to the lift
- The elevator car internal space has to be 2000mmdeepx 1100mm wide, door width is 900mm,visual and an audio floor announcement system in the lift, the floor finish of the car should be non-slippery, there should be handrails on both the sidewalls and the rear wall of the lift car, rear mirror should be present in the car
- The elevator controls in the lift (including alarms /speakers/phones) should be between 800mm to1200mm and good contrast and the buttons are self-illuminating, in raised numbers and Braille, The elevator call buttons and floor numbers outside the lift each floor should be Braille and RaisedLettering,floornumberandfloordirectorysignageontheliftlobbyisvisiblefrom all lift cars
- Door opening/closing time is at least 30 seconds, signage directing to the accessible lift, landing1500mm x1500mm in front of the lift
- The Emergency information given inside the lift car has to be mounted at eye level and accessible format (Braiille/ font size), The lift has to be live attendant when required and at all times for public buildings with a heavy footfall.

Accessible Elevator with Grab Bar, Mirror and auditory floor announcement system

Control and Operating Mechanisms:

- Vending machines or user operable units were present in the building.
- The electric sockets and switches are placed at optimum height from the ground level; and some are placed as high as around 1200 mm the manual switches are easy to operate. The switches or the electrical panels do not have embossed letters/symbols or Braille information next to them.

Recommendation: Control and Operating Mechanisms:

Subject	Recommendation
Control and Operating Mechanisms	1. Operable switches and panels to be located adjacent to clear floor space of 900 - 1200 mm. 2. The electrical switches and panels to be reinstalled at height in between 400mm to 1200mm. 3. The panels are to be retouched to enhance color contrast in between the switches and walls. 4. Switches and panels to be provided with letters/symbols accompanied by Braille information for tactile reading. 5. Touch Panels to be avoided in future cases. 6. Placing face reading machine at an angle of 15 to 30 degrees. 7. Sanitary vending machine should be located at the height of 900-1000mm

Emergency Evacuation:

An emergency evacuation service was installed in building.

There is no emergency evacuation provision map in the building. The building has no visual or audible alert system, nor is there any designated refuge area for persons with disability. Also, missing kinds of emergency evacuation signage are.

Recommendation : Emergency Evacuation

Subject	Recommendation
Emergency Evacuation  	1. The identified evacuation route must be step-free or ramped without barriers leading to the exit on the ground floor or to the refuge area on the upper floors. 2. Alerting systems in the building must be both audible and visual to alert all people, including people with hearing impairments. While audio alerts are common, visual alarms must also be installed at visible locations in all areas of the building, including the toilets. Also, non-auditory visual alarms include flashing beacons must be installed. 3. The alerting button must be placed between the height of 600mm and 1200mm, and must have a high contrast with the background wall. 4. All stairs next to the refuge should have a clear width of minimally 1200mm between the handrails. **5.** Each area of rescue assistance shall be identified by a sign which states "REFUGE AREA" and displays the international symbol of accessibility.

 Evacuation Chair	**6.** Evacuation plans must be displayed in all floors of the building. The accessible evacuation route and the refuge area must be identified on the plan. 7. Direction signs should be installed frequently along the evacuation route and these should preferably be internally illuminated. The evacuation route for wheelchair users should also be signposted. On the upper floors when in the case of emergency, the lift would not work, provide signage directing towards the ramp or the refuge area. Emergency directional signage if suspended from ceiling must be at the height of 2000mm and if provided on the wall must be between 1400 mm and 1600mm. **8.** Staff must be trained to assist disabled people in evacuation. **9.** One Evacuation Chair should be available in a campus.

Emergency Equation

Recommendation: Emergency Equation for Hearing Impaired

Alerting Systems

In emergency situations, it is critical that people are quickly alerted to the situation at hand, for persons with disability the following needs to be considered:

1. Audible alarms with "Voice Instructions" should be installed that can help guide them to the nearest emergency exit. As an alternative to the pre-recorded messages, these alarms may be connected to central control room for on-the- spot broadcasts.
2. Non – auditory alarms (visual or sensory) to alert persons with hearing impairments should be installed at visible locations in all areas that the building users may visit (including toilet areas, storerooms etc.). Non-auditory alarms include flashing beacons.
3. Integrate visual alarm signals with required audible fire alarm system, including during retrofit projects where feasible.
4. These should be adequately contrasted in colour and tone from the background wall and should be labeled with raised letters and in Braille.
5. Mount appliance at 2100 mm (minimum) above the floor level within the space or 150 mm below the ceiling, whichever is lower
6. Where visual alarm signals are provided in any common space, public corridor, hallway, lobby, or room, ensure they are placed no more than 15 meters apart, on the horizontal plane.
7. Install visual alarm signals so that the signal from at least one device is visible throughout the floor area or portion of it in which they are installed: and
8. Ensure the intensity of the visual alarm signal raises the overall light level sharply, but not so intense as to be unsafe for direct viewing.
9. Ensure a flash intensity of 75 candela (minimum) with a flash rate between 1 Hertz (minimum) and 3 Hertz (maximum); and
10. Synchronize visual alarms that are in the same proximity to flash at the same time.

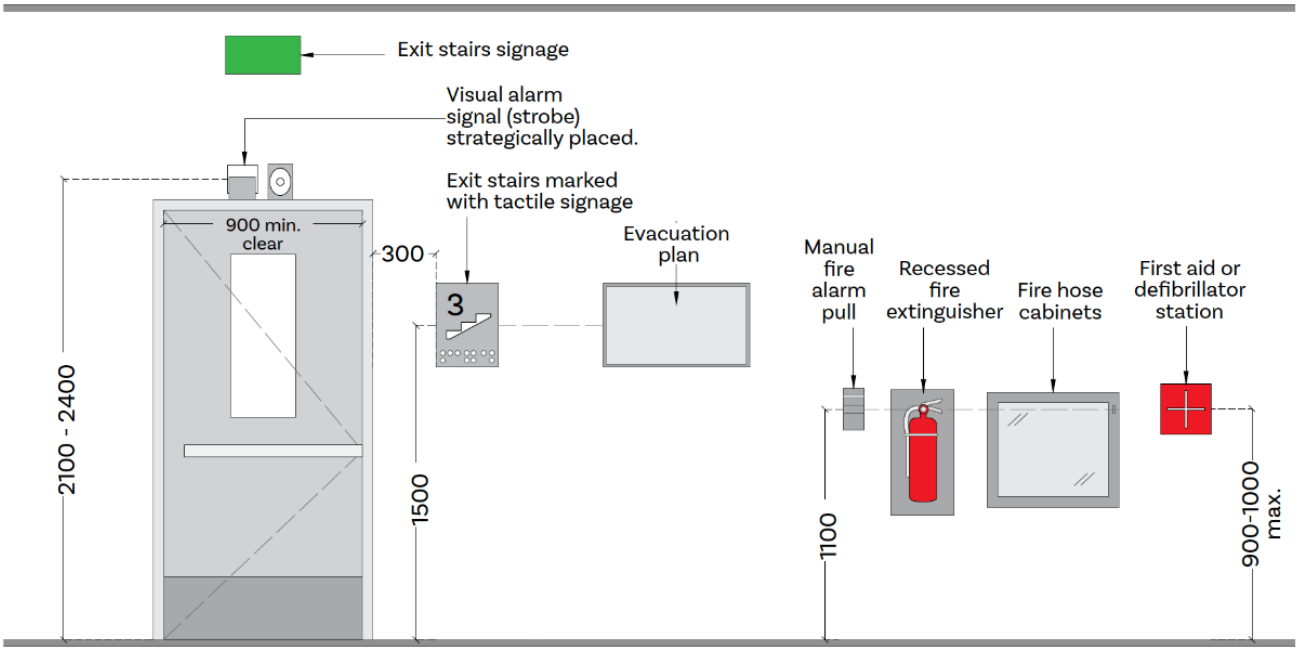
LED Beacon

Fire Alarm Bell

Fire Alarm

Emergency exit door

Cardiac emergency



Fire Safety and Evacuation Features: Elevation View

Corridors:

- The every building block has 1500mm to 1700 mm wide corridors and clear space for maneuverability and turning of wheelchair users with one side railing 850mm.
- Some corridors are cluttered with unwanted barriers and protruding objects, like Air conditioner, which are not guarded off.
- There is no colour contrast from the floors to the walls, doors and ceiling and the corridor floors are with heavy patterns.
- There were no handrails and tactile found in the whole building blocks, particularly the corridors. These are useful for persons with vision impairment.

Corridor with railing and tactile

Recommendation: Corridors

Subject	Recommendation
Corridors	1. The corridors are to be fitted with handrails on both sides, complying with the guidelines of CPWD. 2. The floor finish of the corridors is to be modified so that they bring up a contrast between the floor, walls, doors and ceilings and are without heavy patterns. 3. Any loose furniture etc is to be guarded and secured well off from the maneuverability space.

Accessible Corridors with Tactile flooring and low height grab bar as highlighted

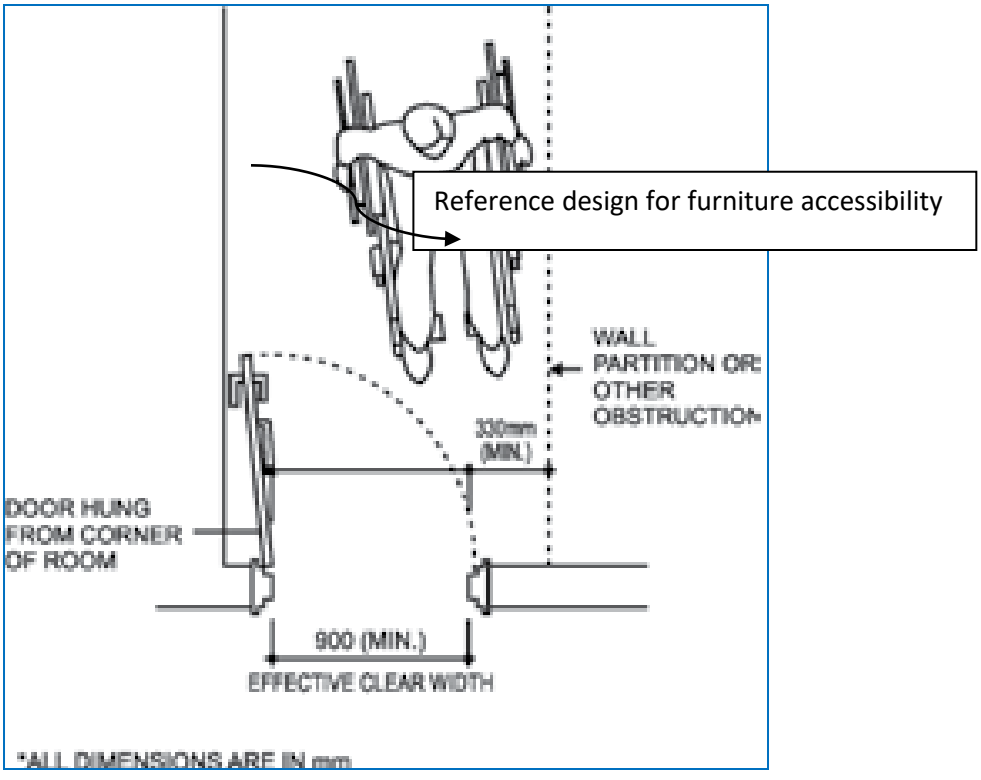
Doors & Doorways:

Doors in the building maintain a minimum of 1000mm opening. They are easy to operate and do not require a lot of effort. The building has single-hinged doors, which are push type doors which swing one way. Door handle height is 950mm. Doors open inward from the corridor including most of the toilet doors. All doors, doorframes, door furniture contrast in colour with the background wall. The doors do not have timed-release spring for shutting. All the doors are manual.

Doorways

Recommendation: Doors & Doorways

Subject	Recommendation
Door & Doorways	1. Door, including one leaf of a pair of double doors, shall have a clear width of not less than 900 mm between the open door and opposite jamb or the other leaf. 2. The colour of the doorframe should contrast in colour with the door and the background wall as well as with the colour of the door furniture. 3. Toilet doors to open outwards in the corridor. 4. All doors which allow the passage of wheelchairs should have kick-plates of not less than 200 mm high fitted on the face which swings away 5. Guardrails to be installed at doorways which lead to a route of travel. 6. Doormats in front of doorways should be flush with the floor level and all doorways to have clear, obstructed space in front. 7. Door threshold shall not exceed 20 mm in height and shall be beveled to facilitate passage of wheelchairs. Door handle shall not be less than 950 mm and not more than 1050 mm above the finished floor level, measured from the top surface of the grip.

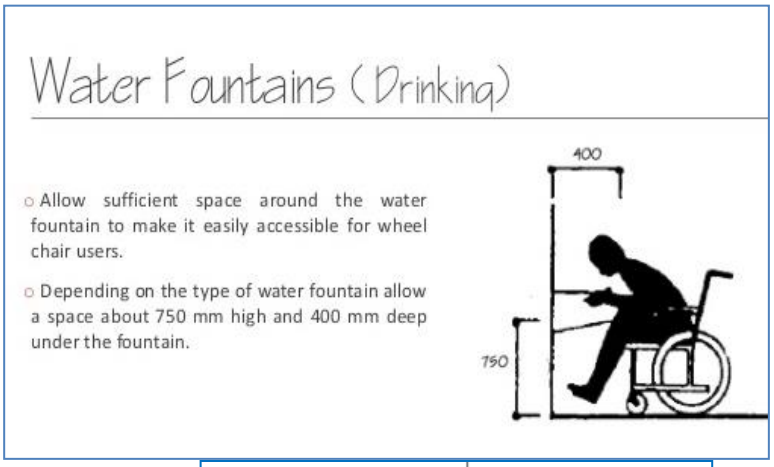


Drinking Water Facilities: we found inaccessible drinking water facility.

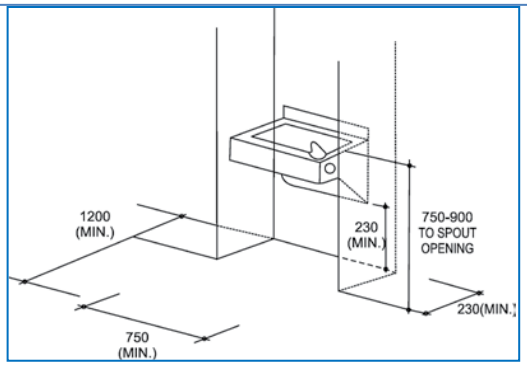
Recommendation: Drinking Water facilities

Subject	Recommendation
Drinking water Facilities	1. A clear floor space of at least 750 mm x 1200 mm; 2. A clear knee space of at least 750 mm wide, 200 mm deep and 680 mm high between the bottom of the apron and the floor or ground; 3. A toe space not less than 750 mm wide, 230 mm deep and 230 mm high. 4. All wall-mounted drinking fountains should be placed in an alcove to eliminate the hazard of collision to persons with visual impairment. 5. A wall guard should be installed to protect a drinking fountain that extends into a corridor and has an open space underneath. The drinking water facility should have hygiene and dry & clean area. Should be lever type tap and should be also easily accessible by persons with disabilities. Glasses should be made available to drink water and it should not be kept at an inaccessible height (not higher than 1200 mm)

The special arrangement should allow for the provision of every section of the Rest House: -



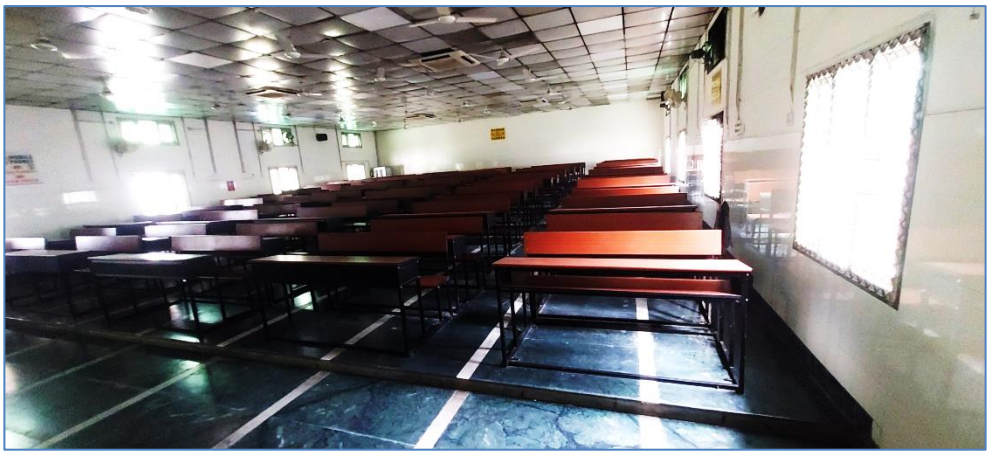
Sample figure for accessible drinking water facility



Flooring and Furniture

The flooring in every building blocks is different indifferent areas, heavily patterned corridors and mostly plain floors in rooms. There is difference in floor finish from corridors to rooms. Floors are not slippery and better maintained.

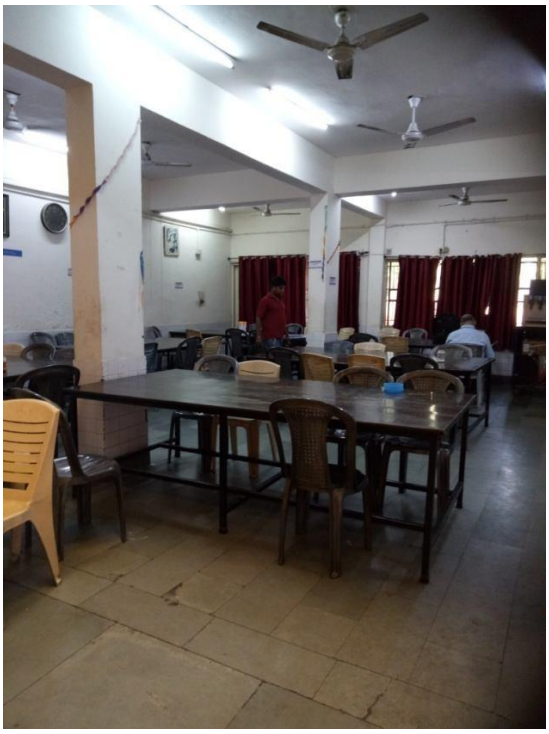
Therearedifferenttypesoffurnitureandclassroomtablesintheuniversity, was not according to the accessibility guidelines of Harmonious Guidelines (differentheight600mm to 800mm) some office table has knee & toe space or some not, good circulation space in office and classroom. Some classrooms has no space for wheelchair users. No information notification is inaccessible format for PWDs. No Braille signage found of whole building premises.

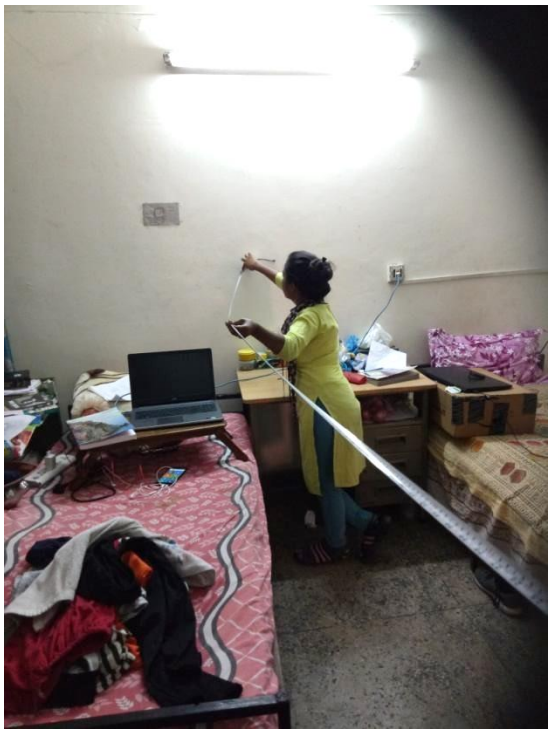


Different types furniture in every block

Hostel Furniture

- Internal furniture Layout of hostel room was not according to the standards. Circulation space between beds was 530mmit is recommended to have at least 900 mm, door opening 740mm, and bed height 580mm with mattress, switch board height 1200mm, room width 2580 and length 5400.
- Every hostel mess furniture has same,





Canteen and mess with inaccessible furniture

Library and Canteen

- The furniture in library is different, some table(height750mm)has knee and toe(430)space is accessible for wheelchair users. Good circulation space,
- Bookissuecounterheight1050mm.
- Canteen has fix cemented sitting facility, also good circulation space for wheelchair users
- Cash counter of canteen 1160mm and food counter1070mm it's too high.
- Internal furniture Layout of Guest House was not according to the standards. Circulation space between beds was 800mm it is recommended to have at least 900mm.




Library Area, Biometric area & Counter, Canteen Sitting space

Recommendation: Flooring and Furniture

Subject	Recommendation
Flooring and Furniture	❖ Flooring has to be as per specifications highlighted in the Appendix to this Report. ❖ Arrange properly furniture in the room so that to have ample moving & circulation space for PWDs. ❖ There should be some such arrangement in office and guest house for some adjustable furniture for the PWDs which can be easily accessible to them. ❖ To facilitate the way finding for persons with visual impairment, surfaces and finishes with luminous contrast between the wall and the ceiling, and between the wall and the floor should be adopted. Appropriate lighting design with adequate illumination should also be considered. ❖ Sufficient level of illumination shall be provided in order to help people to apprehend the physical environment of the space they have entered or to move around safely. ❖ Provide adequate required amount of luminance as per the guidelines in workshop so that jobs can be done easily. Working areas of a building should have an illumination level of not less than 120 lux measured at the finished floor level.

Common Building Elements:

Colour contrast (in critical surfaces, sudden change in level, toilets, stairs, handrails, doors, switches and sockets, skirting, free standing obstacles and signage):
The building has minimum or no color contrast in different relevant surfaces, and there is a need to improve and upgrade on the same.

Recommendation: Common Building Elements

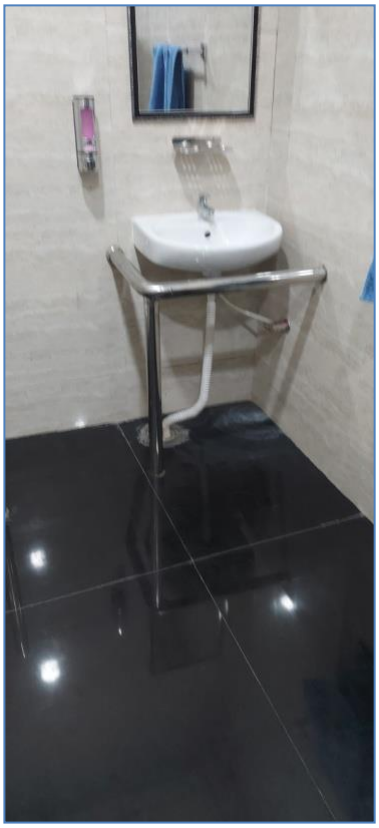
Clear colour contrast to be maintained in all critical surfaces, sudden change in level, toilets, stairs, handrails, between doors, door frames and walls, switches and sockets, skirting, free standing obstacles and signages.

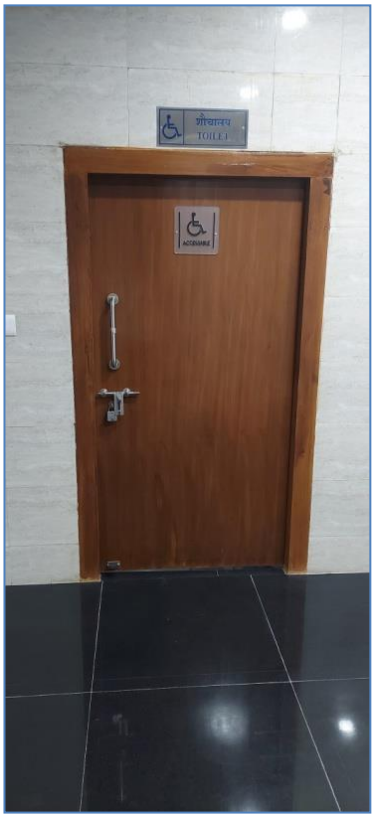
Accessible Toilets

Observations:

There is accessible toilet for persons with disabilities in the building, but not as per the guideline. Toilets has inward opening door, door width more than 1000mm, wash basin height 840mm, mirror height more than 1200mm , low circulation space in toilet, wrong placement of grab bar in toilet. The floor surface of the toilets is slippery. **international symbol of accessibility installed.** Toilets also do not comply with accessibility parameters in terms of size, colour, fittings, accessories, requirements for alarm systems etc.

Note: make changes as per audit report



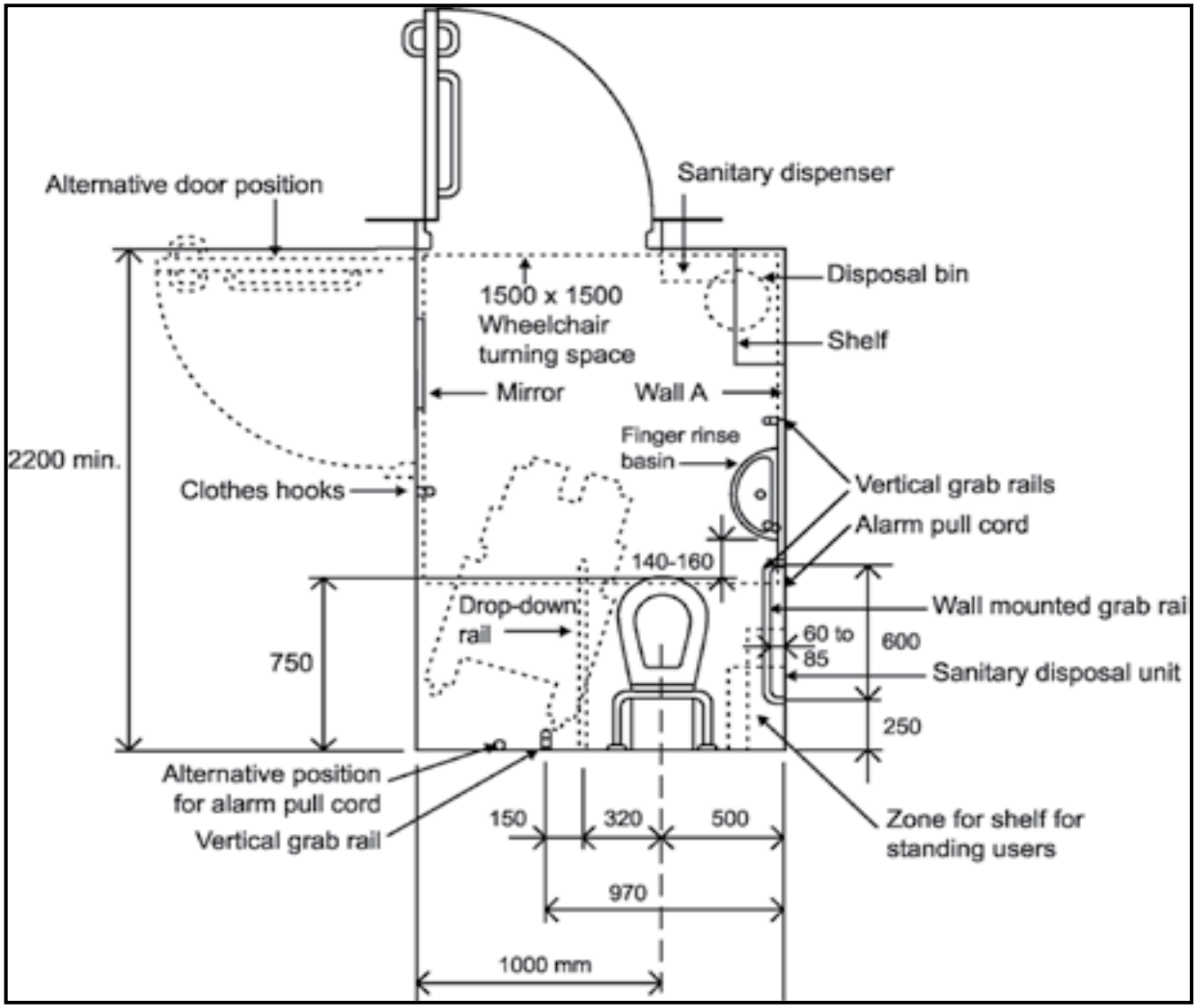


Accessible toilet not as per guidelines

Recommendations: Toilets

Subject	Recommendation
Toilets	❖ It's recommended having reserve toilet for person with disabilities close to building entrance and near parking area also (within 30-50 Meters.) as per the accessibility guidelines. ❖ Width of the unisex toilet door to be at least 900 mm. The toilet door must be outward opening, double hinged or sliding door. ❖ The WC should be installed in a corner with centerline of the WC at a distance of 450mm to 500mm from the adjacent wall. The front edge of WC should project 750mm of/from the rear wall. ❖ The WC should have a backrest and seat height of the WC should be 450mm. ❖ Lever type flush control is to be installed at a height of 1100mm from the floor surface, or on the transfer side of the WC. The force required to flush should be comfortable. ❖ There should be 800mm of clear transfer space next to the WC. ❖ A horizontal grab bar is to be installed on the adjacent wall, at a height of 200mm from the WC seat. ❖ A fold up grab bar is to be installed at a centerline distance of 320m-200mm from the WC seat. ❖ A wash basin is to be installed at a distance of at least 400mm from the side wall.The wash basin should have automatic or lever type faucets. ❖ The top-edge of the wash is to be between the height of 800mm and 840mm from the floor level. ❖ There should be clear knee space of at least 750mm height x 750mm width x 200mm depth under the wash basin, with additional toe-space of 300mm height x 750mm width x 230mm depth. ❖ The floor-surface of the toilet should be non-slippery. There should be colour contrast between the floor, wall and sanitary fittings.

	❖ There should be an alarm system within easy reach to alert persons outside, in case of emergency. Visual alarm must be there to alert people with hearing disability in case of emergency. ❖ The door should be able to be locked from inside but also released from outside in case of emergency. The accessible toilet should not be kept locked or used as a janitor's room. The toilet should be kept clean, well-maintained and with proper lighting. ❖ Mirror should be at accessible height and installed at an angle for clear visibility. All toilet accessories, soap dispensers, coat hooks should be at accessible reach. ❖ In addition to the accessible unisex toilets, the other toilets (Men / Women) should also follow standardization of placement of utilities like - Basin taps to be placed at the center of the basin.- Soap dispensers must be either at the immediate right or left side of the basin.- Water jets on the right or left side of the WC.- Flush must be either immediately behind the seat or at the center.- WC water tap must be either at the right or left of the WC.



signage for toilet

Sample design for toilet

Information, Communication and Services:

The office does not have an accessible website or alternate accessible formats of publications / brochures / public information material; none of its staff are trained in Indian Sign Language and neither are there Sign Language interpreters available on call. Also there are no assistive technologies like loop hearing systems, audio orientation tools and so on. The staff has never attended any disability sensitization sessions nor do they have trainings on how to extend assistance to people with disabilities. Also there is no Equal Opportunities Policy in place to promote employment of staff with disability.

Recommendations:

- The website should comply with accessibility standards in compliance with Web Content Accessibility Guidelines 2.0 (WCAG 2.0) along with availability of accessible software for electronic filling of forms, if applicable.
- Relevant information in publications / brochures to be made accessible for the public in alternate accessible formats.
- Staff to be given awareness of accessible facilities in the premises.
- There should be a simple procedure of complaint lodging or making suggestions for a client with disability.
- There should be trained staff to extend live assistance to disabled people whenever needed and especially during emergencies etc.
- All staff to have disability sensitization sessions from time to time.
- Office to develop and implement an Equal Opportunities Policy to promote employment of staff with disability.
- Reasonable adjustment of workplace environment should be made, whenever the need arise, to accommodate disabled staff.
- Services like availability of wheelchairs, loop induction system, sign language interpreter etc. should be ensured.
- All accessibility equipment sin the building to be regularly checked and maintained in good working condition.
- There should be a policy to allow guide dogs, wherever a disabled person is accompanied by one.

GENERAL SUMMERY/ RECOMMENDATION

1. **Changes should be done in the plant interiors based on reasonable accommodation**
2. The **website** should comply with accessibility standards in compliance with Web Content Accessibility Guidelines 2.0 (WCAG 2.0) along with availability of accessible software for electronic filling of forms, if applicable.
3. **Provide Braille, Audio, Visual facility, Directional Signage's Horizontal & Vertical** in Reception Area, Evacuation Area, workplace area, Corridors, staircase, parking, alighting point, lift, toilets, drinking water area, canteen, library, hostel area (if), door and doorways.
4. Provide **Ramp** in whole internal building like for entrance to reception Area, Evacuation Area, workplace area, Corridors, staircase, toilets, canteen, library, hostels(if) and curb ramps for external area**.**
5. Provide **Lift** in whole internal building if is it multilevel building
6. Provide tactile marking in the campus including pathways, entrance corridors, ramps, staircase & internal corridor**.**
7. Provide **handrails & grab bars** in corridors, staircase & landings in whole building premises as per the PWDs guidelines.
8. Provide at least **one unisex Accessible Toilet** in each floor and also each building block.
9. Relevant information in publications / brochures to be made accessible for the public 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.
10. Provide sign language interpreter on call in office and reception counter entrance foyer.
11. Implement immediately to eliminate a serious barrier or hazard to access and use of the internal premises of all buildings.
12. Implementation as part of specific regular maintenance/renewal.
13. Needs to improve maintenance of emergency & evacuation system.
14. Provide beveling to cater to level differences at each doors & Remove Channel gate barriers at floor level.
15. Vision glass of door panel should be at accessible level for the wheel chair users.
16. No hurdle / obstruction should be in whole office foyer & corridors such as air cooler, window panels, potted plants, electrical wires & pipes.

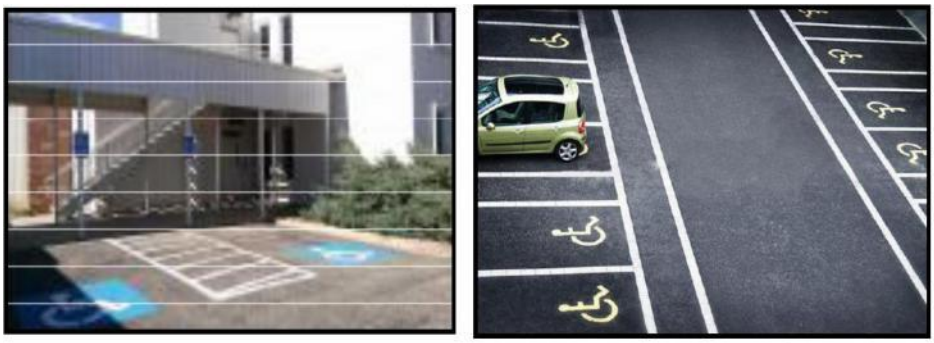
17. Provide elevators for free accessibility of PWDs at every staircase location.
18. Provide all information detailing the accessible facilities in the building with photographs.
19. Need to train the staff to assist persons with disabilities, including persons with learning disabilities.
20. Need to train the staff disability sensitization sessions are part of the staff induction program.
21. Common alternative formats can be used to assist people with visual impairments who are best able to interpret information through hearing or touch, embossed letters with Braille (Audio/ Visual information, Maps and models).
22. Information from signs can be conveyed by the colour of lettering and brightness differentials between the letter and background colours. Safety signs use primarily red, yellow and green as information colours. For other signs it is preferable to use Blue and White Colours.
23. Basic principles for Colour Contrast:

    Text should contrast with sign background, Sign should contrast with environment, Light levels (measured in Lux), 70% contrast between wall and sign panel, Avoid shades of colours, Avoid using same colours as safety signs, Non-reflective surface.
24. Provide Evac chair at each floor in case any type of emergency for the PWDs.
25. Please intimate builder on accessibility requirements so that any future changes do conform to the guidelines.
26. Safety/ERT recommendations, 1. Orientation for visually impaired to fire exit on each floor. 2. Procedure for PwDs is to go along with a buddy. For PwDs in wheelchair – they will have to be carried down. Designated members have to be responsible for this.
27. Procedure for PwDs is to go along with a buddy. For PwDs in wheelchair – they will have to be carried down. Designated members have to be responsible for this.
28. **For visually impaired:** We request signage to be put up in Braille signage in key areas such as restrooms.
29. **For Low vision persons**: all glass doors/walls should have a strip which alerts them to the presence of glass wall (may be useful for even sighted persons!).

Technical Specification and Recommendation

(Examples of Best Practices)

Sl# 1 – Parking



Reserved Parking Area

Reserved Parking Signage

Parking Special Permission for Disabled Person

Sl# 2 - Alighting

Alighting Area

Sl# 3 – Accessible Route

Accessible Route for PWDs

Sl# 4 – Entrance

Broad Entrance for Wheel Chairs

Sl# 5 – Reception & Lobby

Wheel Chair Accessible Reception

Sl# 6 – Stairs

Lift Stairs

Sl# 7 – Ramp

Accessible Ramp with Handrails for PwDs

Signage

Sl# 8 – Handrils

Proper Hand railing

Grip Bar

Sl# 9 - Elevator / Lift

Accessible Elevator with Grab Bar, Mirror and auditory floor Announcement System

Sl# 10 – Escalator & Passenger Conveyor

NOT APPLICABLE

Sl# 11 – Corridors

Accessible Corridors with Tactile flooring and low height grab bar as highlighted

Sl# 12 - Doors and Doorways

Accessible Doors and Doorways

Sl# 13 - Accessible Toilet

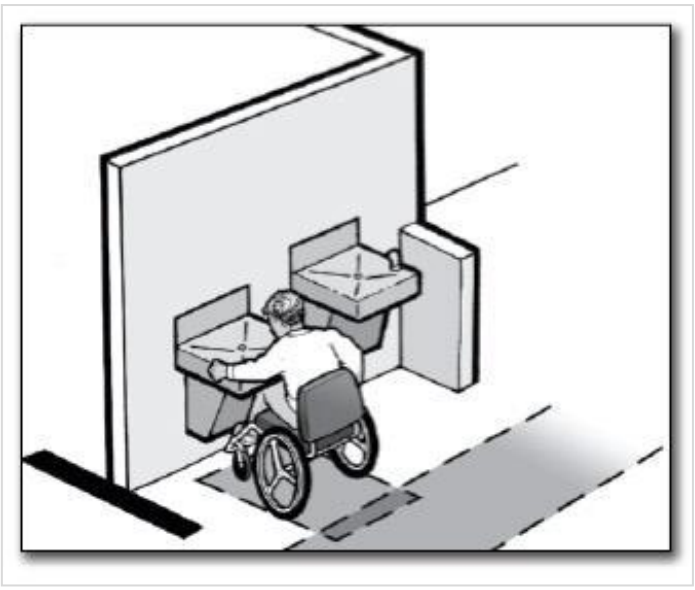
Accessible Toilets with Grab Bars

Signage →

Sl# 14 - Cafeteria

Accessible Tables in the Cafeteria Highlighted circle shows knee space for wheel chair users

Sl# 15 - Drinking Water Facility



Accessible Drinking Water Area

Sl# 16 - Control and Operating Mechanisms

Accessible Operating Machines

Accessible Switches in Lift

Accessible Fire Extinguisher

Sl# 17 – Signage

Sl# 18- Emergency Evacuation

Evacuation Signage

Evacuation Chair

Contact for any Assistance:

Association for Disabled People (New Delhi)	**Pradeep Raj** (Gen. Secretary) Mob: +91-9350164514 E-mail: disabledpower@yahoo.in office@adpngo.in

***************End***************