Accessible India Campaign (Sugamya Bharat Abhiyan)

Department of Empowerment of Persons with Disabilities (DEPwD) launched Accessible India Campaign (Sugamya Bharat Abhiyan) as a nation-wide Campaign for achieving universal accessibility for Persons with Disabilities (PwDs) on December 3,2015. It has three important verticals, namely - the Build Environment, the transportation sector and the ICT ecosystem.

Part A: Built Environment Accessibility

An accessible physical environment benefits everyone, not just persons with disabilities. Measures should be undertaken to eliminate obstacles and barriers to indoor and outdoor facilities including schools, medical facilities, and workplaces. Further these would include all public spaces such as roads, footpaths, parks and gardens etc.

Objective 1: Enhancing the proportion of accessible government buildings

An accessible government building is one, where persons with disabilities have no barrier in entering it and using all the facilities therein. This covers the built environment – services, steps and ramps, corridors, entry gates, emergency exits, parking – as well as indoor and outdoor facilities including lighting, signages, alarm systems and toilets. Identifying accessible buildings requires annual accessibility audits that determine if a building meets agreed upon standards. Once a building is deemed fully accessible, an annual audit is not necessary, but should be required for any proposed changes to the structure or systems contained therein. A full audit can then be done on a less frequent basis. Standards of accessibility should be as consistent as possible with international standards, such as those of the ISO, taking into account the local context. In regards to the built environment, ISO 21542:2011, Building Construction – Accessibility and Usability of the Built Environment, delineates a set of requirements and recommendations concerning construction, assembly, components and fittings.
Target 1.1: Conducting accessibility audit of at least 25-50 most important government buildings and converting them into fully accessible buildings in the selected 50 cities by June 2022.
Target 1.2 : Converting 50% of all the government buildings of National Capital and all the State capitals into fully accessible buildings by June 2022.
Target 1.3: Conducting audit of 50% of government buildings and converting them into fully accessible buildings in 10 most important cities / towns of all the States (other than those, which are already covered in Target 1.1 and 1.2 above) by June 2022.

Part B: Transportation System Accessibility

Transportation is a vital component for independent living, and like others in society, PwDs rely on transportation facilities to move from one place to another. The term transportation covers a number of areas including air travel, buses, taxis, and trains.

Objective 2 : Enhancing proportion of accessible airports

An airport is accessible, if a person with a disability has no barrier in entering it, using all the facilities, and boarding and disembarking from airplanes. This covers the built environment – surfaces, steps and ramps, corridors, entry ways, emergency exits, parking – as well as indoor and outdoor facilities including lighting, signage, alarm systems and toilets.
Target 2.1: Conducting accessibility audit of all the international airports and converting them into fully accessible international airports by June 2022.
Target 2.2: Conducting accessibility audit of all the domestic airports and converting them into fully accessible airports by June 2022.

Objective 3 : Enhancing the proportion of accessible railway stations
Target 3.1: Ensuring that A1,A & B categories of railway stations in the country are converted into fully accessible railway stations by June 2022.
Target 3.2: Ensuring that 50% of railway stations in the country are converted into fully accessible railway stations by June 2022.

Objective 4 : Enhancing the proportion of accessible Public Transport

Target 4.1: Ensuring that 25% of Government owned public transport carriers in the country are converted into fully accessible carriers by June 2022.

Part C: Information and Communication Eco-System Accessibility

Access to information creates opportunities for everyone in society.People use information in many forms to make decisions about their daily lives. This can range from actions such as being able to read price tags, to physically enter a hall, to participate in an event, to read a pamphlet with healthcare information, to understand a train timetable, or to view webpages. No longer should societal barriers of infrastructure, and inaccessible formats stand in the way of obtaining and utilizing information in daily life**. T**he targets set under the relate to websites, the audio-visual media and sign language interpreter.

Objective 5 : Enhancing proportion of accessible and usable public documents and websites that meet internationally recognized accessibility standards

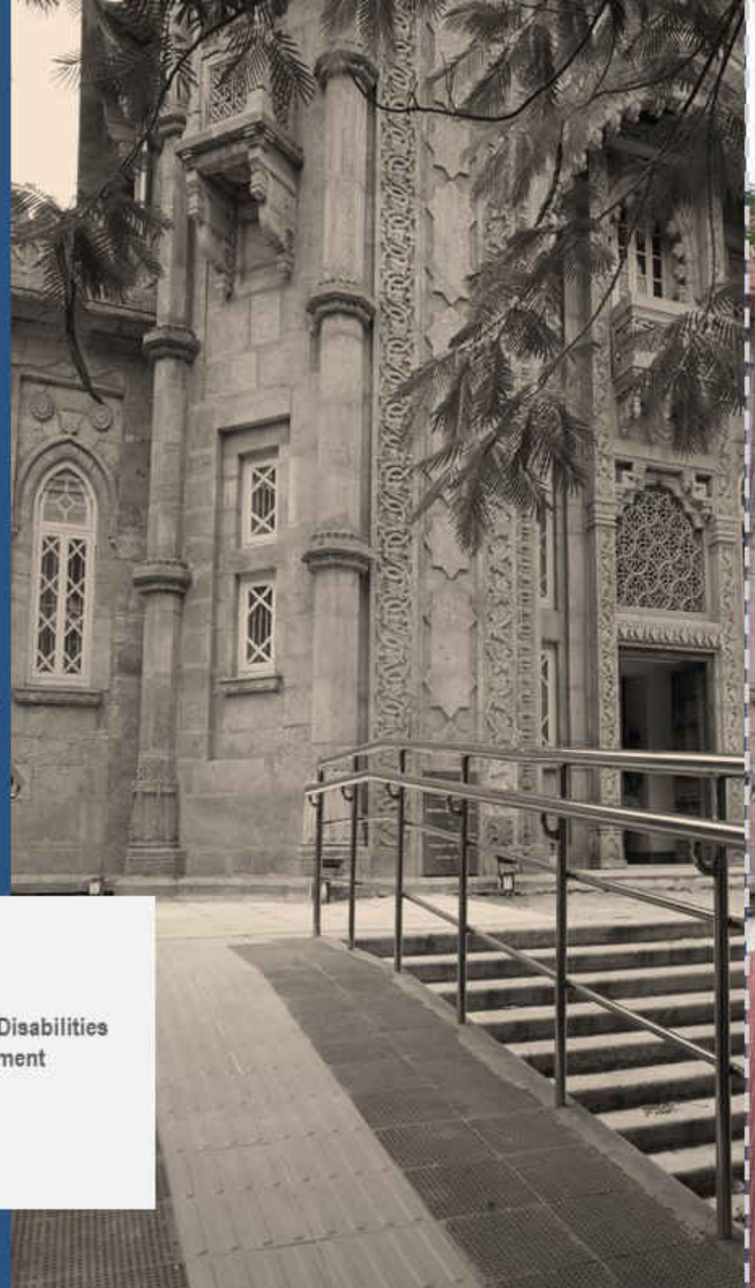
This target will ensure conversion of public documents published as of a specified year and all current websites meeting the relevant International Organization for Standardization (ISO) criteria, that are found in ISO / IEC 40500 : 2012, Information Technology – W3C Web Content Accessibility Guidelines (WCAG) 2.0. Public documents refer to all documents issued by the national government as well as all subnational documents. They include all publications such as laws, regulations, reports, forms and informational brochures.
Target 5.1: Conducting accessibility audit of 50% of all government (both Central and State Governments) websites and converting them into fully accessible websites by June 2022.
Target 5.2 : Ensuring that at least 50% of all public documents issued by the Central Government and the State Governments meet accessibility standards by June 2022.

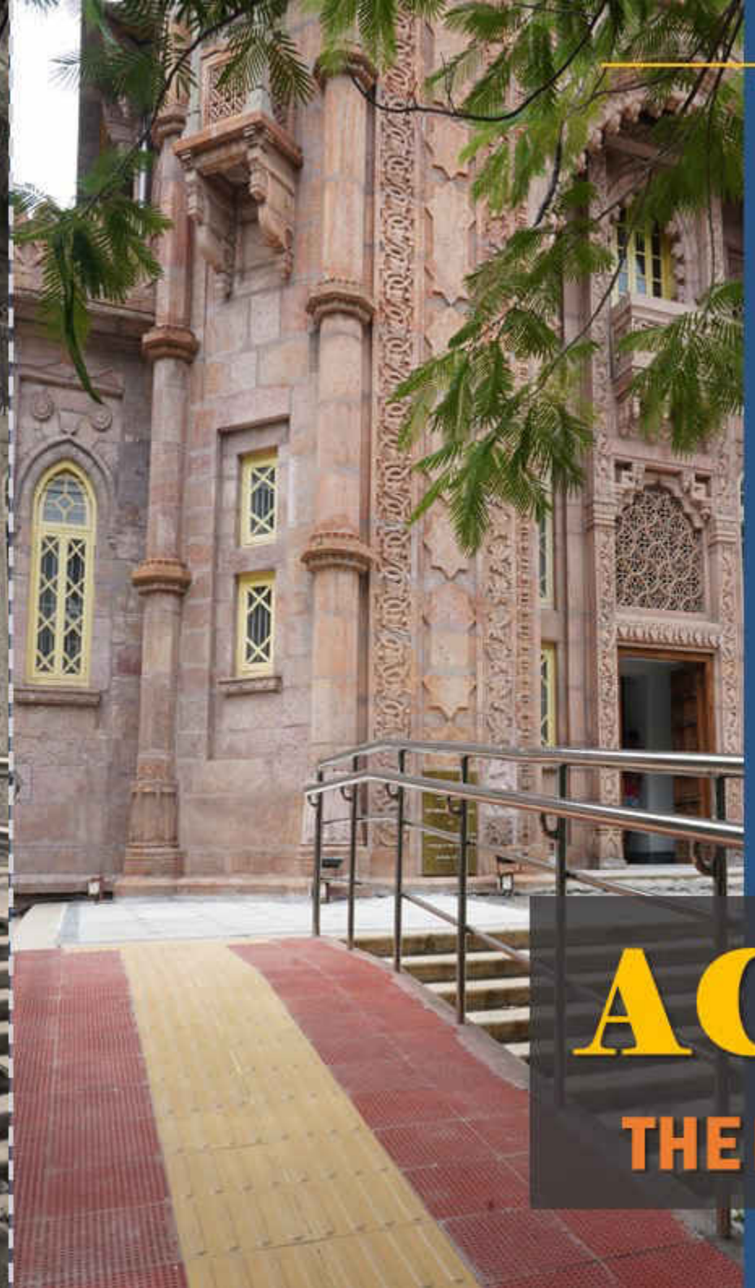
Objective 6: Enhancing the pool of sign language interpreters

Target 6.1 : Training and developing 200 additional sign language interpreters.

Objective 7: Enhancing the proportion of daily captioning and sign-language interpretation of public television news programmes

The proportion of public television news programmes that meet agreed upon standards of daily captioning and sign-language interpretation. Public television refers to programmes that are produced, funded or subsidized by the government.
Target 7.1 Developing and adoption of national standards on captioning and sign-language interpretation in consultation with National media authorities by June 2022.
Target 7.2 Ensuring that 25% of all public television programmes aired by government channels meet these standards by June 2022. Accessibility is about giving equal access to everyone. Without being able to access the facilities and services found in the communities, persons with disabilities will never be fully included. Accessible India Campaign will seek cooperation of all Central Government Departments/Ministries and State Governments to progress towards making india universally accessible.





FEBRUARY 2021

VOLUME 1 PUBLIC CENTRIC BUILDINGS

DEMYSTIFYING ACCESSIBILITY IN BUILT INFRASTRUCTURE

ACCESS

THE PHOTO-DIGEST

Department of Empowerment of Persons with Disabilities
Ministry of Social Justice and Empowerment
Government of India

Accessible India Campaign

Cover Photo: Government Museum, Egmore, Chennai, Tamil Nadu
Source of photograph – Commissionerate of Welfare of Differently Abled, Government of Tamil Nadu

Acknowledgement: Department of Empowerment of Persons with Disabilities is extremely grateful for the participation to provide photographs of accessible features from across the country, directly, indirectly or through the MIS portal of Accessible India Campaign, by State/UT Governments of Andaman & Nicobar Islands, Andhra Pradesh, Chandigarh, Chhattisgarh, Delhi, Haryana, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Mizoram, Nagaland, Odisha, Punjab, Rajasthan, Sikkim, Tamil Nadu, Telangana, Uttar Pradesh, Uttarakhand and West Bengal, the Airport Authority of India, the Railway Board, as well as Chandigarh College of Architecture. The enthusiasm and keenness demonstrated by all has been key in making this compilation not just interesting but resourceful and rich in information, thereby helping in the endeavour of taking steps towards universal accessibility across India.

Inspiration: Ms. Shakuntala D. Gamlin, Secretary, Department of Empowerment of Persons with Disabilities, Government of India.
Concept Design: Ms. Tarika Roy, Joint Secretary, Department of Empowerment of Persons with Disabilities, Government of India and helping in the endeavour, her team of Accessible India Campaign consisting of Mr. Vikash Prasad - Director, Mr. Sanjay Singh - Under Secretary and Ms. Priyadarshini Ghosh – Consultant.

CONTENTS

MESSAGE FROM

SHRI. THAAWARCHAND GEHLOT,

HONORABLE UNION MINISTER OF SOCIAL JUSTICE & EMPOWERMENT

With the motto of 'Sabka Saath Sabka Vikas', Hon'ble Prime Minister has envisioned the creation of an Inclusive India; a nation where every part of the society enjoys equal participation and dignified living. Universal Accessibility leads the way towards actualizing this vision. The Sugamya Bharat Abhiyan is a step in that direction.

Taking forward the understanding of the Social Model of Disability, it is only prudent that one realizes that disability is not a factor of an individual's medical condition but a product of the society's structure and attitude. In view of this, every member of our society must realize their responsibility towards creating an accessible environment for independent and safe living of divyangjan. Accessibility, in fact, paves the way for empowerment of not just for the persons with disabilities but of every vulnerable group, namely the elderly, women, new mothers, pregnant women, the infirm and those who are ill or injured.

This book is a simple representation for creating sensitization and awareness of what can be done on ground in order to create public centric infrastructure properly accessible. It is essential that the direction of development in our country is reoriented towards inclusivity and accessibility, thereby not only giving equal opportunity but also tapping the potential of our divyang brothers and sisters. This compilation must be received as an appeal to the society for progressing towards an 'Universally Accessible India' with utmost conviction.

I wish to compliment Secretary, Smt. Shakuntala D. Gamlin and Joint Secretary, Smt. Tarika Roy of the Department of Empowerment of Persons with Disabilities for taking up this initiative of developing an information bank in the form of a Photo-Digest that enhances the understanding of 'Accessibility', its necessity in public centric buildings and specifications of the basic features through simple photographic samples drawn from across various States and Union Territories of India.

MESSAGE FROM

SHRI. KRISHAN PAL GURJAR,

HONORABLE UNION MINISTER OF STATE FOR SOCIAL JUSTICE & EMPOWERMENT

India has ratified the United Nations Convention on Rights of Persons with Disabilities which obligates all signatories to ensure access to physical environment, transportation and information & communication for Persons with Disabilities on an equal basis with others in both urban and rural areas. Building on this, the Accessible India Campaign or the Sugamya Bharat Abhiyan was launched by Hon'ble Prime Minister on 3rd December 2015 with the vision of creating a barrier free environment across the three components of the built-up environment, the transportation systems and the ICT ecosystem. The Accessible India Campaign also serves as a tool to actualize the provisions of accessibility mentioned under the Rights for Persons with Disabilities Act, 2016 (RPwD Act). Sections 40 to 46 of the Act mandate accessibility through formulation of accessibility standards, compulsory compliance to standards as well as time bound creation of accessible infrastructure and services. Accordingly, the Harmonized Guidelines and Space Standards for creating Barrier Free Environment for Persons with Disabilities and Elderly Persons developed by Central Public Works Department in 2016 are the standards related to the built-infrastructure that have already been notified under the RPwD Act.

These measures reflect the commitment of the Government toward bringing about an organized change in the society, such that public centric infrastructure is made accessible for comfortable, safe and secured functioning for everyone who is vulnerable due to their ability, age, gender, situation or culture.

This initiative of the DEPwD of developing this comprehensive yet simple photographic book as a guide for the professionals is commendable. It provides reference to the key requirements for developing basic accessibility features while showcasing some examples of well executed works from around the country. It is heartening to see that Governments in every corner of India are taking progressive steps towards developing inclusive and accessible public spaces. I am sure this initiative of a Photo-Digest illustrating the features of accessibility in the built environment will help relevant stakeholders in providing accessible buildings.

FOREWORD

SMT. SHAKUNTALA D. GAMLIN,
SECRETARY, DEPARTMENT OF EMPOWERMENT OF PERSONS WITH DISABILITIES, GOVERNMENT OF INDIA

Building an accessible and inclusive society are the challenges that are being faced by every policy maker, be that in the field of education, health, infrastructure, information technology or transport systems. With accessibility comes efficiency, time saving, knowledge and growth.

It has been widely demonstrated that online learning and virtual events cut back on time, money and distances. Features of accessible learning through text to speech, voice over, optical character readers, colour contrasts, big size fonts, among others make education and information accessible for the visual and hearing impaired persons. The standardized Indian sign language has so well demonstrated the value of reaching out to the hearing impaired. Sign language has been adapted in the NCERT to convert it into a full syllabus for primary, middle and secondary school curriculum. A six thousand mode of expression of Dictionary with a catalogue of terminologies and words pertaining to agriculture and allied activities are milestones in history. They will prove to be the unifying forces in the country in their standardised form, content and substance. In today's modern world where access to information is the key to progress, accessibility in the information and communication eco-system becomes even more important.

As a matter of fact, advancement in tools and technologies has also extended to creation of accessible physical environments, thereby making everyday functioning of Persons with Disabilities (PwDs) convenient and safe. Ramps, wheelchair friendly receptions, signage, accessible lifts, smart toilets, automated doors and lighting systems, artificial intelligence, etc. are just a few examples of how innovative technologies have instilled impactful changes within the society.

The ten accessibility features, i.e. 3 outdoor features of access routes, accessible parking with transfer bays and accessible ramped entrances; as well as 7 indoor features of accessible reception counters, corridors, accessible lifts with braille buttons and audio announcements, accessible staircases, accessible toilets, accessible drinking water facilities and signages, are such that the disabled, elderly, infirm, pregnant women and all others would find railways, airports, public transport, buildings, public utilities viz. hospitals, schools, colleges, banks, sports stadiums etc. easy to access and use. Even basic accessibility in built environment allows everyone, those permanently disabled or those temporarily disabled or otherwise, to fully participate in the mainstream activities of society, which has been established as a right under the Rights for Persons with Disabilities Act, 2016.

Transformational change in adding value to the Human Resource through such easily accessible infrastructure will soon be a reality that till today was a distant dream. Retrofitment are cost effective solutions that can be carried out without much ado. However, while this revolutionary change in envisioning our surrounding has been initiated, it is also essential that facilities are created in compliance to standards and in tune with the requirements of PwDs such that efforts of authorities are not put to waste. Non compliance or ignorance towards the essential requirements of PwDs often lead to wasteful usage of resources, time and energy which only defeats the purpose of driving this movement towards an all inclusive environment under mission mode.

Finally, what we achieve through this would help us move towards the direction of what Rabindranath Tagore had poetically expressed as breaking the barriers of narrow domestic walls.

I compliment Ms. Tarika Roy, Joint Secretary and her team of Accessible India Campaign - Shri Vikash Prasad - Director, Shri Sanjay Singh - Under Secretary and Ms. Priyadarshini Ghosh - Consultant who have taken painstaking efforts in bringing out this Photo-Digest as a compilation of photographs from across India to sensitize the society towards correctness required to create holistically accessible environments. I hope all stakeholders take note of and follow these simple to understand instructions illustrated through pictographic depictions of some of the best examples taken from across different States and Union Territories while making their public spaces accessible.

ABOUT THE BOOK

The Accessible India Campaign (AIC) launched in December 2015 strives to bring accessibility across three verticals in India, namely – the built-up environment, the transportation sector and the ICT ecosystem. The Department of Empowerment of Persons with Disabilities (DEPwD), Ministry of Social Justice and Empowerment, Government of India is the nodal department for monitoring the implementation of AIC. In the last few years of the rolling out of this Campaign, DEPwD has been privy to not just the practical difficulties being faced on-ground across India, but also to the problems and issues witnessed with respect to the gaps in the level of understanding as well as in putting in place features of accessibility appropriately while retrofitting public buildings. It was realized that while carrying out retrofittment in buildings to make them accessible, it was imperative that the requirements and concerns of Persons with Disabilities, the elderly, pregnant women, children, those infirm or injured and temporarily disabled were understood and addressed properly, as required. A need was, thus, felt to educate and explain these requirements for the proper sensitization of the concerned authorities.

Accordingly, DEPwD started off by unlocking the 'maze' of the detailed *Harmonized Guidelines and Space Standards for creation of Barrier Free Environment for Persons with Disability and Elderly Persons* by simplifying it with 10 basic features of accessibility being culled out as the bare minimum requirements to be provided at least in all public buildings in order to enhance accessibility. These 10 features were conveyed to all Central and State/UT Governments frrom August 2019 onwards. Furthermore, a Management Information System (MIS) portal of AIC was launched by Shri Thaawarchand Gehlot, Hon'ble Union Minister of Social Justice and Empowerment in September 2019 where Central and State/UT Governments are required to upload details, with photographs of the retrofitting works of accessibility undertaken. An analysis of these photographs also revealed gaps in the retrofitment work being carried out which are being continuously pointed out to CPWD and State/UT Governments for course correction in these buildings as well as in the works yet to be taken up.

This exercise of analysing photographs uploaded in the MIS, together with the issues and gaps noticed during on-site visits, reports of accessibility audits conducted and discussions held with teams of engineers and architects, have all been the *raison d'etre* for this book. Secretary, DEPwD identified the need to bridge this gap through a simple at-a-glance understanding of the subject of accessibility in public buildings being made available through sketches and a photograph-based reference book. Thus, was conceived the idea of this Photo-Digest of the 10 basic features of accessibility, the first in the series of such books on accessibility. It was decided to showcase the good practices available on ground through photographs collected from all over India being compiled as an easy to comprehend book, that was not text heavy. The improvements to be made and innovative practices undertaken have also been mentioned.

The collation of photographs to demonstrate the 10 basic features of accessibility was done through several sources. State and UT Governments were requested to send in their photographs; as was the Airports Authority of India. The photographs uploaded in the MIS portal of the AIC were also utilized for the purpose, besides using the repository of photographs already available with DEPwD. One photograph was, infact, also taken from the internet, duly acknowledging the source.

It is hoped that these photographs assembled and presented in ACCESS – THE PHOTO DIGEST would do the necessary talking and help in demystifying accessibility for the purpose of being provided in public infrastructure in an endeavour to make India universally accessible, and thereby, eventually becoming truly inclusive. Lets all strive to become Accessibility Warriors!

SMT. TARIKA ROY,
JOINT SECRETARY, DEPARTMENT OF EMPOWERMENT OF PERSONS WITH DISABILITIES, GOVERNMENT OF INDIA

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UNDERSTANDING ACCESSIBILITY

Accessibility \ ik-ˌse-sə-ˈbi-lə-tē : (*noun*)
Dictionary meaning: Quality of being easy to obtain, understand, appreciate and use

The National Building Code states that **'Accessibility'** includes **ease of independent approach, entry, evacuation and/or use of a building and its services and facilities**, by all of the building's potential users with an assurance of individual **health, safety and welfare** during the course of those activities.

Accessibility is essential not only for **Persons with Disabilities** (PwDs) **but for all individuals facing vulnerability due gender, age, physical ability, economic situation or cultural disconnect**, such as the elderly, infants, new mothers, pregnant women, victims of accidents, the ill and the infirm.

United Nations Convention of Rights for Persons with Disabilities (UNCRPD) recognizes the **Social Model of Disability** which proposes that someone is disabled not due to the medical condition, but due to the attitudes and structure of society, induding inaccessible physical environments and transportation, unavailability of assistive devices & technologies, non-adapted means of communication, gaps in service delivery, and discriminatory prejudices & stigma in society.

The 2030 Agenda for Sustainable Development states that disability cannot be a reason for lack of access to development programming and the realization of human rights.

The following international mandates set the base for accessibility –

- **United Nations Convention on Rights for Persons with Disabilities, 2007 (UNCRPD)** which has been ratified by India, in its Preamble provides for recognizing the importance of accessibility to the physical, social, economic & cultural environments, health & education and information & communication, in enabling PwDs to fully enjoy all human rights and fundamental freedoms. **Artide 26 of Chapter 9 of UNCRPD** obligates ensuring access to physical environment, transportation and Information & communication for PwDs on an equal basis with others in both urban and rural areas.

- **Incheon Strategy, 2012** builds on the UNCRPD towards an inclusive, barrier-free and rights-based society for PwDs in Asia and the Pacific, which has been ratified by India. **Goal No. 3** specifically mentions access to physical environment, transportation, knowledge, information and communication as a precondition for inclusive society. The strategy provided the first set of regionally agreed disability-inclusive development goals and indicators for tracking the progress in accessibility.

The **Department of Empowerment of Person with Disabilities (DEPwD) under the Ministry of Social Justice and Empowerment, Government of India,** came up with a forward-looking Act to protect the rights of PwDs, known as the Rights for Persons with Disabilities Act, 2016 (RPwD Act). It is a rights-based Act that provides PwDs equal opportunities in health, education, employment, non-discrimination, guardianship, and most importantly, accessibility. The RPwD Act, 2016 has enlisted 21 types of disabilities which include impairment of motion, sight, hearing and speech, intellectual impairment, mental illness and other medical conditions like blood disorders (haemophilia, thalassemia, sickle cell disease) as well as multiple disabilities. Sections 40-46 of the RPwD Act, 2016 mandate Accessibility in the Built-Up Spaces, Transportation, Appropriate Technologies, Consumer Goods and all services to ensure an universally accessible environment for public at large.

NATIONAL ACCESSIBILITY MANDATES AND STANDARDS

The RPwD Act, 2016 mandates Accessibility through Sections 40 to 46, as under:

- **Section 40:** Formulation of rules for Persons with Disabilities (PwDs) by laying down the standards of accessibility for the physical environment, transportation, information and communications, including appropriate technologies and systems, and other facilities and services provided to the public in urban and rural areas.
- **Section 41:** Suitable measures to be taken to provide facilities for PwDs at bus stops, railway stations and airports conforming to the accessibility standards, access to all modes of transport and accessible roads to address the need of mobility for PwDs as well as taking measures to promote personal mobility of PwDs.
- **Section 42:** Suitable measures to be taken to ensure all contents available in audio, print and electronic media are in accessible format; PwDs have access to electronic media by providing audio description, sign language interpretation and close captioning; and electronic goods and equipment which are meant for every day use are available in universal design.
- **Section 43:** Promoting development, production and distribution of universally designed consumer products and accessories for general use.
- **Section 44:** Mandatory observance of accessibility norm, by not granting construction permit, certificate of completion or occupancy certificate to buildings not conforming to accessibility rules.

- **Section 45:** All public buildings shall be made accessible in accordance with the rules formulated within five years from the date of notification of such rules.
- **Section 46:** All Government or private service providers, shall provide services as per the accessibility rules within two years from the date of notification of rules.

Accessibility standards available for designing or planning accessible public facilities and infrastructure include :

For Buildings and Public Spaces

- **Harmonized Guidelines and Space Standards for Creation of Barrier Free Environment for Persons with Disabilities and Elderly Persons 2016** (Harmonized Guidelines) *by Central Public Works Department, Ministry of Housing and Urban Affairs* – Notified under RPwD Rules, 2017
- **National Building Code 2016** (NBC) *by Bureau of Indian Standards*

For Transportation Systems

- **Harmonized Guidelines for Passengers with Disabilities over Indian Railways** *by Ministry of Railways*
- **Code for Approval and Design of Bus Body** *by Ministry of Road Transport and Highways* – Notified under RPwD Rules, 2017
- **Handbook on Barrier Free Space Standards for Built Environment for Persons with Reduced Mobility** *by Ministry of Civil Aviation*

For Information and Communication Technology (ICT) Ecosystem

- **Guidelines for Indian Government Websites** by *Ministry of Electronics and Information Technology* – Notified under RPwD Rules, 2017
- **Guidelines for Accessible TV Viewing by Persons with Hearing Impairment** by *Ministry of Information & Broadcasting*

ACCESSIBLE INDIA CAMPAIGN

Department of Empowerment of Persons with Disabilities under the Ministry of Social Justice and Empowerment, Government of India is dedicated towards development of awareness, education and sensitization towards Persons with Disabilities (PwDs) in the society. To set out the Government's commitment on ratification of UNCRPD, a Flagship Campaign called the **Accessible India Campaign (AIC) or Sugamya Bharat Abhiyan** was launched by DEPwD on 3rd December 2015. Taking after the Incheon Strategy 2012, the **vision of the Campaign is to a create barrier free environment across the three verticals of the Built-Up Environment, the Transportation System and the ICT Ecosystem**.

The **Mission** of the Campaign is to create tangible assets of accessible infrastructure, through guided change in the society towards standardized, organic and intentional development of accessible facilities and services. To actualize this mission, the Campaign identifies its **core principles** as follows:

- **Universal Design** - The design of products, environments, programmes and services usable by all, to the greatest extent possible, without the need for adaptation or specialised design, applicable to assistive devices and advanced technologies.
- **Reasonable Accommodation** - Necessary and appropriate modification and adjustments, without imposing a disproportionate or undue burden in a particular case, to ensure to PwDs the enjoyment or exercise of rights equally with others.

Built-Up Environment

Under the Built-Up Environment of AIC, DEPwD is working with States/UTs across India for development of accessible public centric buildings. For this, Central and State/UT Governments have identified buildings to be retrofitted in Phases I, II and III of the Campaign. Endeavours are being made for enforcement of the accessibility rules and ensuring a minimum of 10 basic features of accessibility in all public spaces and buildings. These features of accessibility that have been culled out from the *Harmonized Guidelines*. Sector specific actions are also being undertaken so as to promote development of accessible infrastructure in a focussed manner, thereby creating models for future replication.

Transportation System

Under the transportation sector, not just are the premises of railway stations, airports and bus stops considered for being made barrier-free, but also the carriers and the services themselves are being made accessible. Introduction of disabled-friendly coaches by railways, low floor buses by various transport authorities and aerobridges-ramps in airports are among the steps being taken towards creation of accessible carriers. Transport related services such as enquiries, ticket bookings, booking of services are also being taken up for maximized beneficial effects. Upgradation of the accessibility standards of transportation are being taken up to develop more modern, inclusive and sustainable systems that are universally accessible.

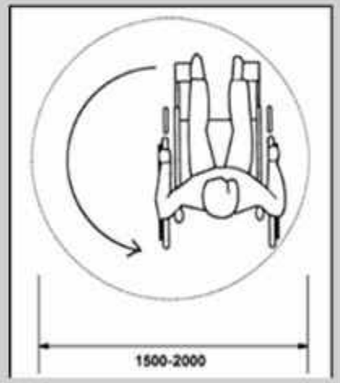
ICT Ecosystem

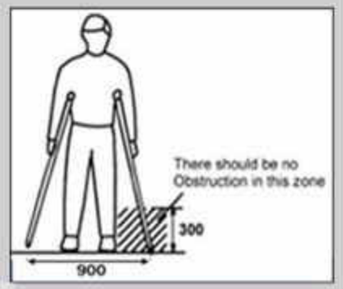
Due to the increasing dependency on digital and virtual infrastructure in today's world, the Campaign is also promoting accessible practices around Information and Communication Technology (ICT). Accessibility standards for accessible TV viewing by persons with hearing impairment have already been issued which provide for closed captioning of programs. Web Accessibility is also being taken up within the laid down guidelines for development of government websites catering to the requirements of the visually and hearing impaired persons.

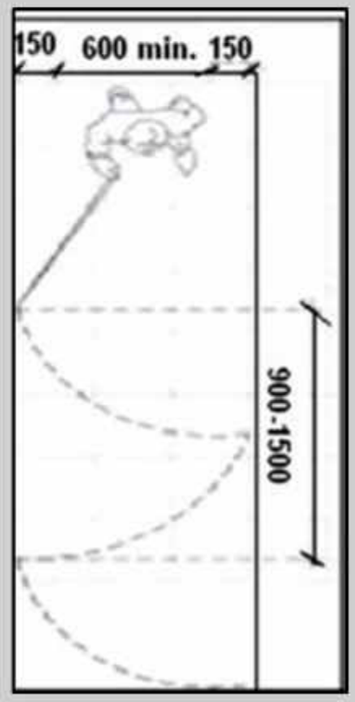
DESIGN PRINCIPLES OF ACCESSIBILITY

Graphic reference source: Harmonized Guidelines as per mentioned clause

The principles of design are based on:



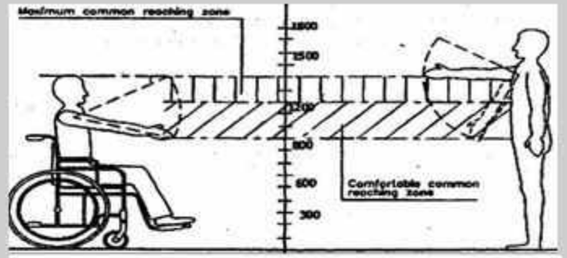


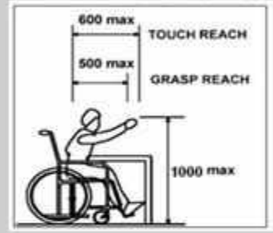


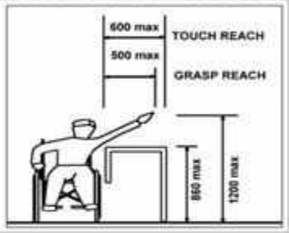
1. Assistive Devices and Space Allowance

Clause 3.1 of Harmonized Guidelines

- **Wheelchairs** - 1200mm X 900mm (4ftX3ft) ground space and 1500mm (5ft) radius to turn.
- **Crutch** - minimum clear passage of 920mm (3.06ft) unobstructed up to 300mm (1ft) height.
- **White canes** - radial range of 900mm (3ft) wide band, no obstruction above 600mm (2ft).



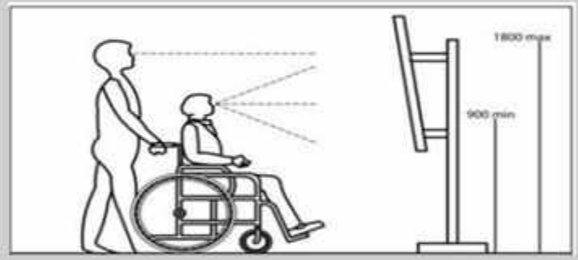




2. Reach Ranges of Wheelchair Users

Clause 3.2 of Harmonized Guidelines

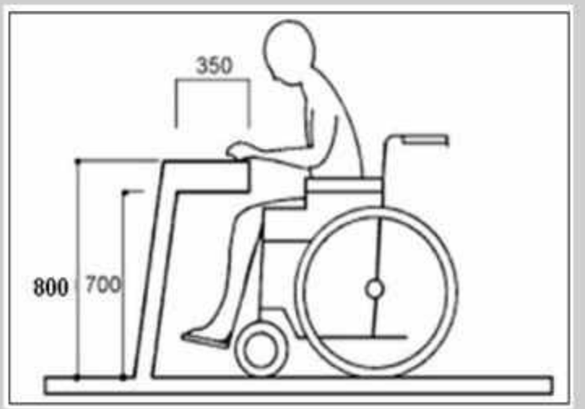
- **Comfortable reach** - 900 to 1200 mm (3ft to 4ft).
- **Maximum lower reach level** - 250mm (0.8ft) and higher reach level - 1300mm (4.3ft).
- The maximum **side-reach** over an obstruction 860mm (2.75ft) high x 500mm (1.75ft) deep, is 1200mm (4ft.)



3. Vision Zone

Clause 3.3 of Harmonized Guidelines

- **Comfortable Vision zone** - 900 to 1800 mm (3ft to 6ft).



4. Height and Width Zone

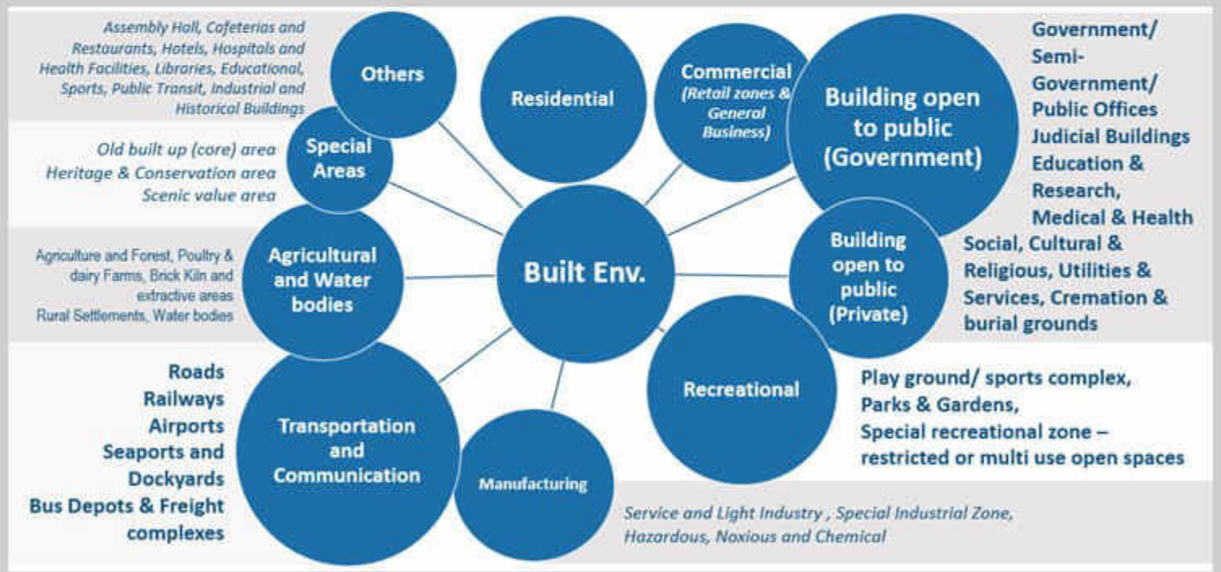
Clause 3.4 of Harmonized Guidelines

- **Height of controls (switch boards, alarm buttons etc.) from floor** - 400 to 1200mm (1.3ft to 4ft).
- **Counters** – Maximum height of 800mm (2.5ft), Legroom depth under counter - 350mm (1.15ft).
- **Minimum Door width** – 900mm (3ft).

WHERE ALL IS ACCESSIBILITY NEEDED

All public centric buildings and premises need universal accessibility:

The **RPwD Act 2016, defines 'Public Buildings'** as a Government or private building, used or accessed by the public at large, including a building used for educational or vocational purposes, workplace, commercial activities, public utilities, religious, cultural, leisure or recreational activities, medical or health services, law enforcement agencies, reformatories or judicial foras, railway stations or platforms, roadways bus stands or terminus, airports or waterways. Furthermore, ***Chapter 4 of the Harmonized Guidelines*** classifies buildings into the following groups based on the purpose or use of the premises:



10 basic features of accessibility in the Built-Up Environment:	
OUTDOORS	**INDOORS**
1. Accessible route	4. Reception
2. Parking	5. Corridors
3. Entrance to building	6. Lifts / Elevators
	7. Staircases
	8. Toilets
	9. Drinking water provision
	10. Signage

Accessible Route with tactile

Ramped Accessible Entrance

Reserved Parking with transfer bay

OUTDOOR FEATURES

Wide, Obstacle-free Corridors

Double Height Reception

INDOOR FEATURES

Lifts (Braille, Audio, Warning tile)

Staircase (Colour strips, handrail)

Accessible Toilet with grab-bars

Drinking Water Facility

Signage

AT A GLANCE SPECIFICATIONS OF THE 10 BASIC FEATURES OF ACCESSIBILITY

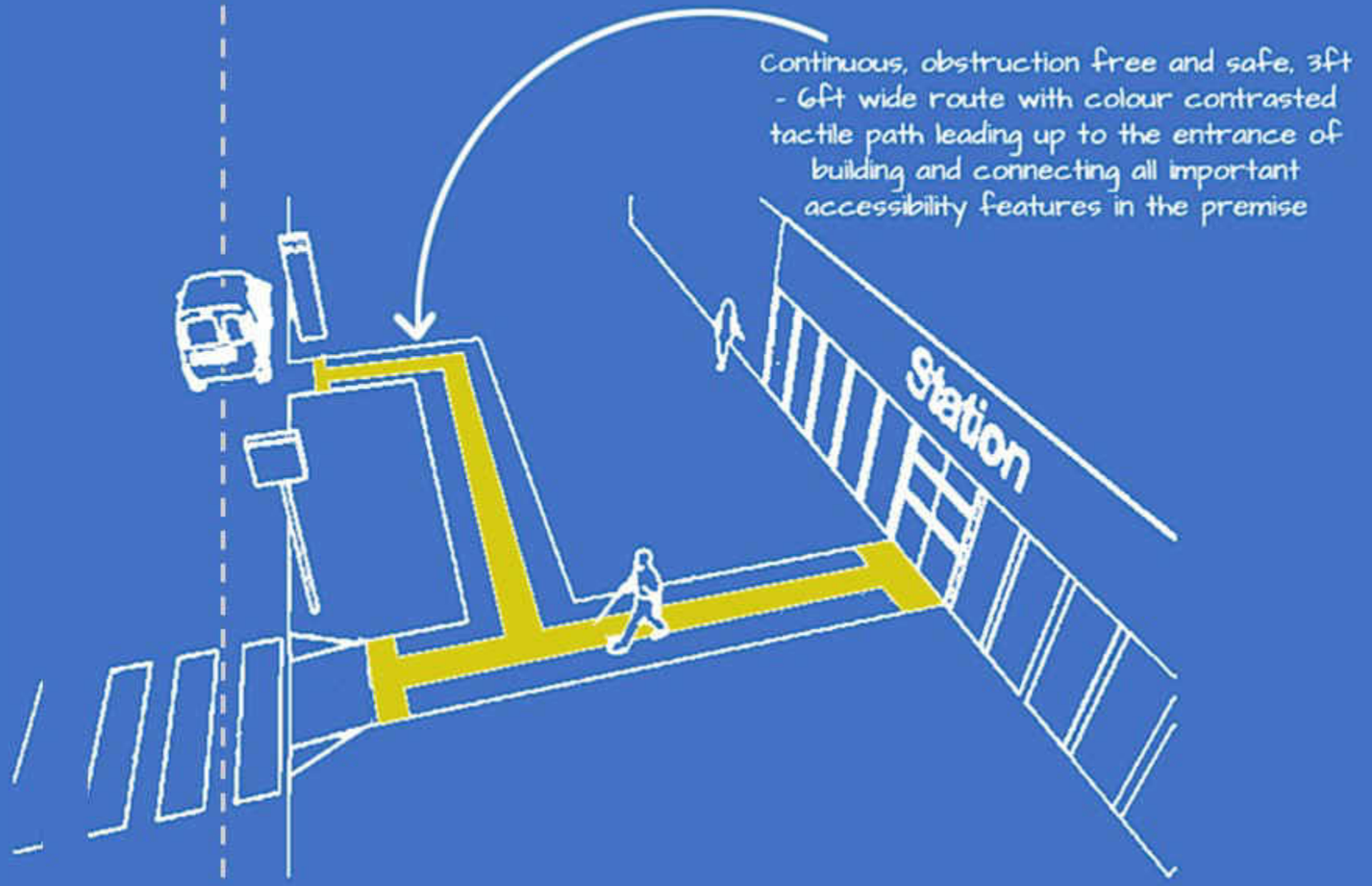
Features	Specifications
OUTDOOR FEATURES	
Accessible Route/ Pathway	900mm - 1800mm, anti-skid surface, tactile path, signage (directional and informational), well lit, unobstructed pathway.
Accessible Parking	5000mm X 3600 mm, within 30m of entrance, transfer bay, connected to accessible route, vertical and on floor signage.
Accessible Entrance to the Building	900 - 1800mm width, ramp with gradient 1:12 and double height handrail with proper grips rounded at the edges, anti-skid flooring, colour contrast, main door to be provided with minimum width of 1000 mm, signage prominently displayed.
INDOOR FEATURES	
Accessible Corridor	1500mm to 1800mm clear width, anti-skid surface, tactile path, well-lit, unobstructed by chairs/plants, doors should not open on to the corridor.
Accessible Reception	Low height counter (750-800mm) with 750-900mm width and leg space of 800mm height and 480 mm depth below the counter, information of accessible features, alternative media for communication - induction loop, braille, audio, etc.
Accessible Lifts/ Elevator	900 mm wide door with warning tiles at the entrance, 1500mm X 1500mm lift car size, braille buttons, auditory information and digital display, grab bars on three sides, alarm button, mirror on the rear wall.
Accessible Toilet	2000mm X 2200mm size, grab-bars around all sanitary fittings easy to be used by left and right handed users, 900mm door (double swing or outside opening), anti-skid floor, emergency button, latches (also middle, base), easy to operate handles and lever type taps with long neck, no *chaukhat*.
Accessible Staircase	Colour contrasting strips on the horizontal surface of the steps, double height rounded handrails (38mm to 45mm diameter) with proper grips rounded at the edges, warning tactile tiles at beginning and end, 50mm gap between wall and handrail for proper grip.
Accessible Drinking Water Facility	Low height counter (750-800mm), leg space below counter (300mm), ramps, no drains/ holes, double height fountain type taps that are easy to operate.
Signage	Directional and informational, high contrast, easy to understand, prominent locations, unobstructed, standardized and in alternative formats such as in braille, through audio output, tactile maps/boards, regional languages, etc, material of the signage should be anti-glare or preferably of matte finish, of durable quality.

1

Clause 5.5, Harmonised Guidelines
Clause B 2.2, Chapter 13, Part 3, NBC Vol.1

ACCESSIBLE ROUTE

Graphic reference source: National Building Code Part 3, Chapter 13



Accessible Route

- **Minimum width for pathway should be 1500mm** (5ft) for one wheelchair and 1800mm (6ft) for two wheelchairs to cross simultaneously.
- Obstacles, projections or other protrusions should be avoided.
- The route connecting the entire building **should be well lit and provided with high contrast tactile floor guidance path**, connecting all public utilities, entrances and exits.
- Informational and directional signage to be provided.

Accessible Route

- **Path obstructed** by landscaping, manholes, potted plants, parking etc.
- **Tactile path provided is not continuous or not designed appropriately.**
- Warning and guiding tiles not provided or wrongly placed.
- Provision for lighting the pathway not considered.
- **Pathway/Route** created for wheelchair movement **is narrow**, less than 1500mm (5ft).

Out-Patient Department, Ganesh Das Hospital, Shillong, Meghalaya

- An accessible corridor is created to connect each wing of the hospital building.
- Well contrasted tactile guiding path provided for ease of navigation for persons with visual impairment.
- Double height rounded handrail provides additional security and support to people of varying heights.

OUT PATIENT DEPARTMENT GANESH DAS HOSPITAL

Rajiv Bhawan, Bhubaneshwar, Odisha

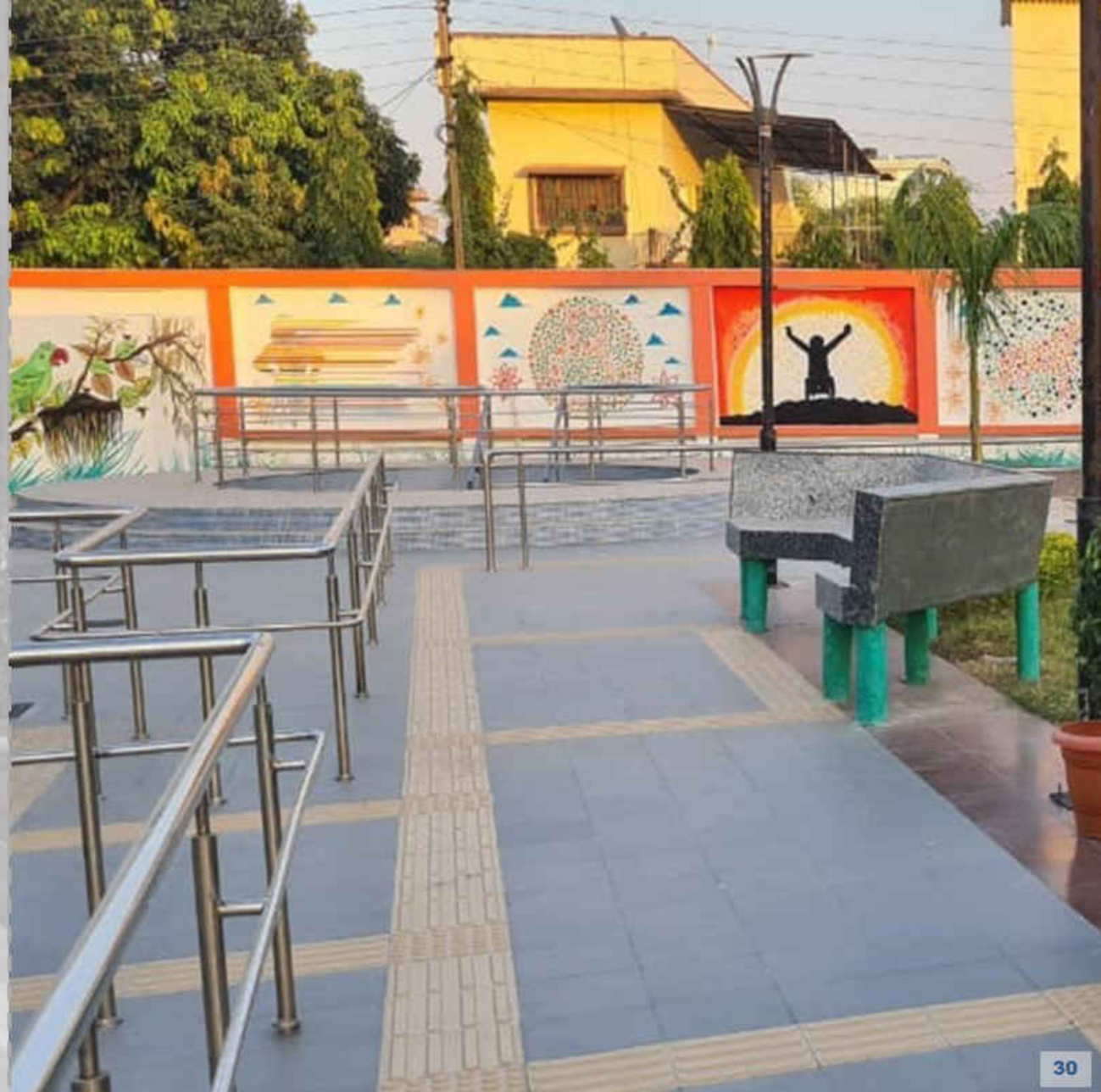
- An accessible route is created from the entrance gate up to the entrance of the building.
- The route is created separate from the vehicular path and kept obstruction free for seamless unhindered movement.
- The route is sufficiently wide with a well contrasted and continuous tactile path.
- The route is also provided with appropriate signages (directional and instructional) indicating ramp, reserved parking etc.
- Ideally, the pathway should also be well lit.

Road Design for Naya Raipur Smart City, Chhattisgarh

- Road crossing has been made seamless by provision of a prominent table top (platform for pedestrian crossing with slopes on both sides for vehicles to pass easily) that is in level with the side-walk.
- Continuous tactile guiding path provided to help persons with visual impairment cross the road safely.
- This forms a safe crossing for cyclists, wheelchair users as well as pedestrians.

Samvedna Park, DDRC, Tikamgarh, Madhya Pradesh

- The well contrasted tactile guiding paths along the walkways in this park creates accessible routes to all important features in the park, including the seating which is an essential feature of open public spaces.
- The pathway is also accentuated by provision of double height rounded handrails for additional support to elderly, children and persons with disabilities visiting the park.
- The tactile path is designed with warning tiles to mark the nodes and junctions along the walkway.

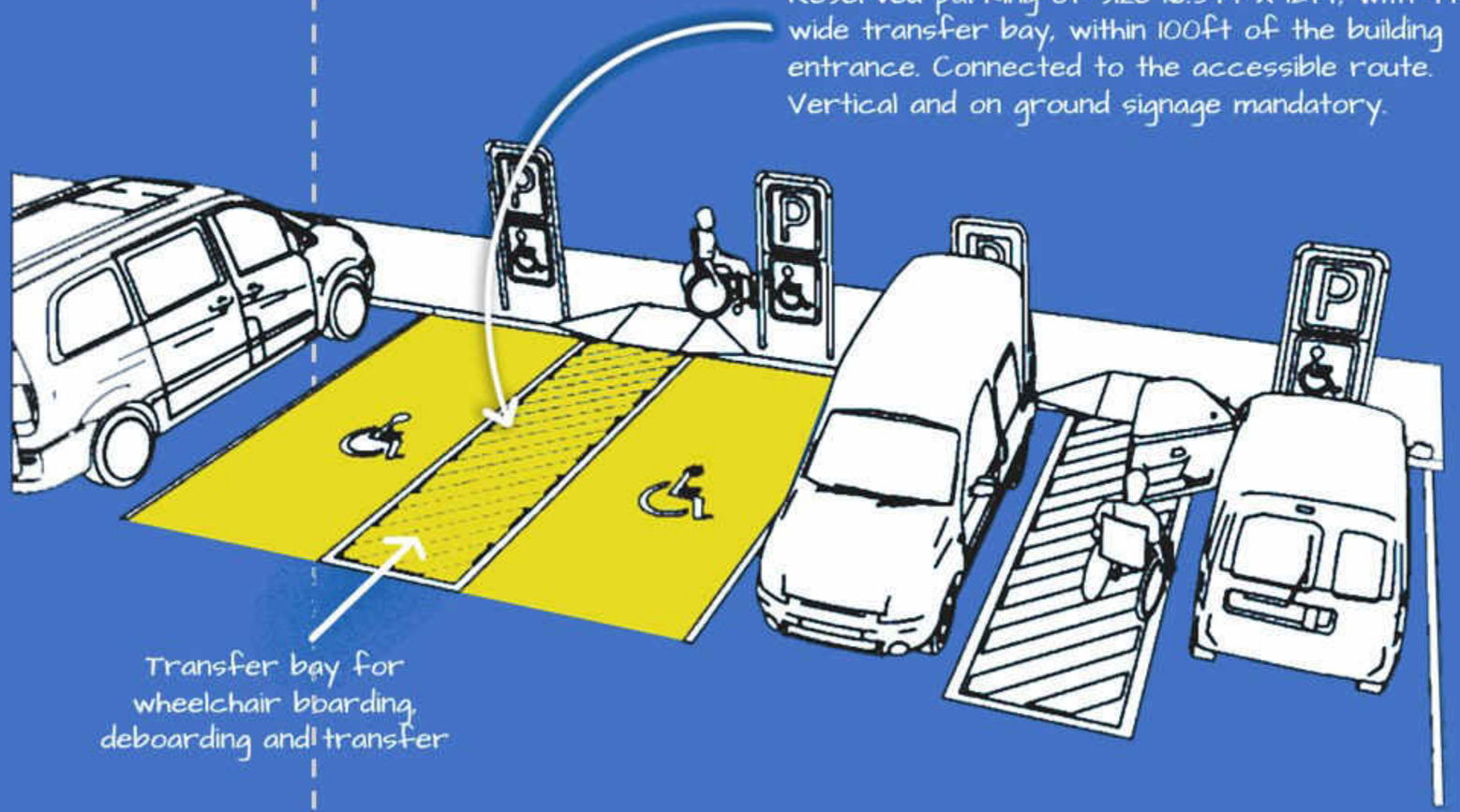


2

Clause 10.1, Harmonised Guidelines
Clause B 3, Chapter 13, Part 3, NBC Vol.1

ACCESSIBLE PARKING

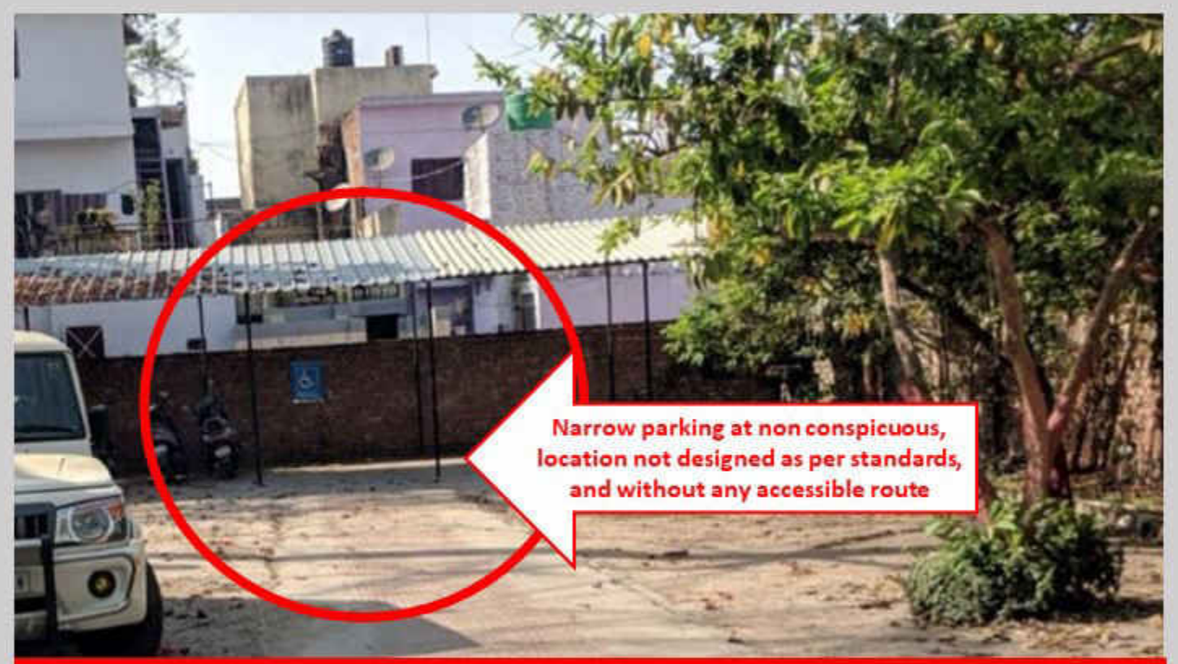
Graphic reference source: National Building Code Part 3, Chapter 13



Accessible Parking

- Parking must have **minimum dimensions of 5000 mm×3600 mm.** (16.5ftX12ft) **located nearest to an accessible entrance or lift lobby within 30m** (100ft).
- A **transfer bay 1200mm (4ft) wide** is required for transfer of wheelchair users, which **must be connected to the accessible route.**
- **Accessible parking lot should be identifiable by the International Symbol of Accessibility, marked on ground and provided on a sign post.**

Accessible Parking



- **No reserved parking provided for PwDs and if provided, not located near the entrance.**
- **Signage not as per standard** – Missing ground marking, vertical post not provided, signage provided is not prominent.
- **No transfer bay** provided for alighting and boarding of wheelchair users or **not connected to an unobstructed accessible route.**

Zoological Survey of India, Pune, Maharashtra

- Parking is connected to the accessible route leading to the building.
- The parking has been provided with both on-ground marking and a signage pole
- A transfer bay has been provided that is marked with warning and guiding tactile tiles as well towards the pathway.

Rajahmundry Airport, Andhra Pradesh

- A space has been reserved in the larger parking lot for persons with disabilities, close to the entry/exit point of the parking lot.
- The parking lot is provided with an on-ground signage of the universal accessibility symbol and each lot has been provided with a transfer bay for boarding and de-boarding of wheelchair users.

Jaydev Bhawan, Bhubaneshwar, Odisha

- Ideally created parking with prominent on-ground marking and a signage pole, reserving the parking lot for Persons with Disabilities.
- The parking area also includes a well spaced and marked transfer bay for boarding and de-boarding of wheelchair users.

Tura Civil Hospital, Shillong, Meghalaya

- Parking has been created near the entry to the building.
- The parking has been provided with prominent signage, both on-ground and on a pole, marking the parking lot reserved for persons with disabilities.
- Two (2) parking lots have been provided with a shared transfer bay for boarding and de-boarding of wheelchair users.

DDRC, Ujjain, Madhya Pradesh

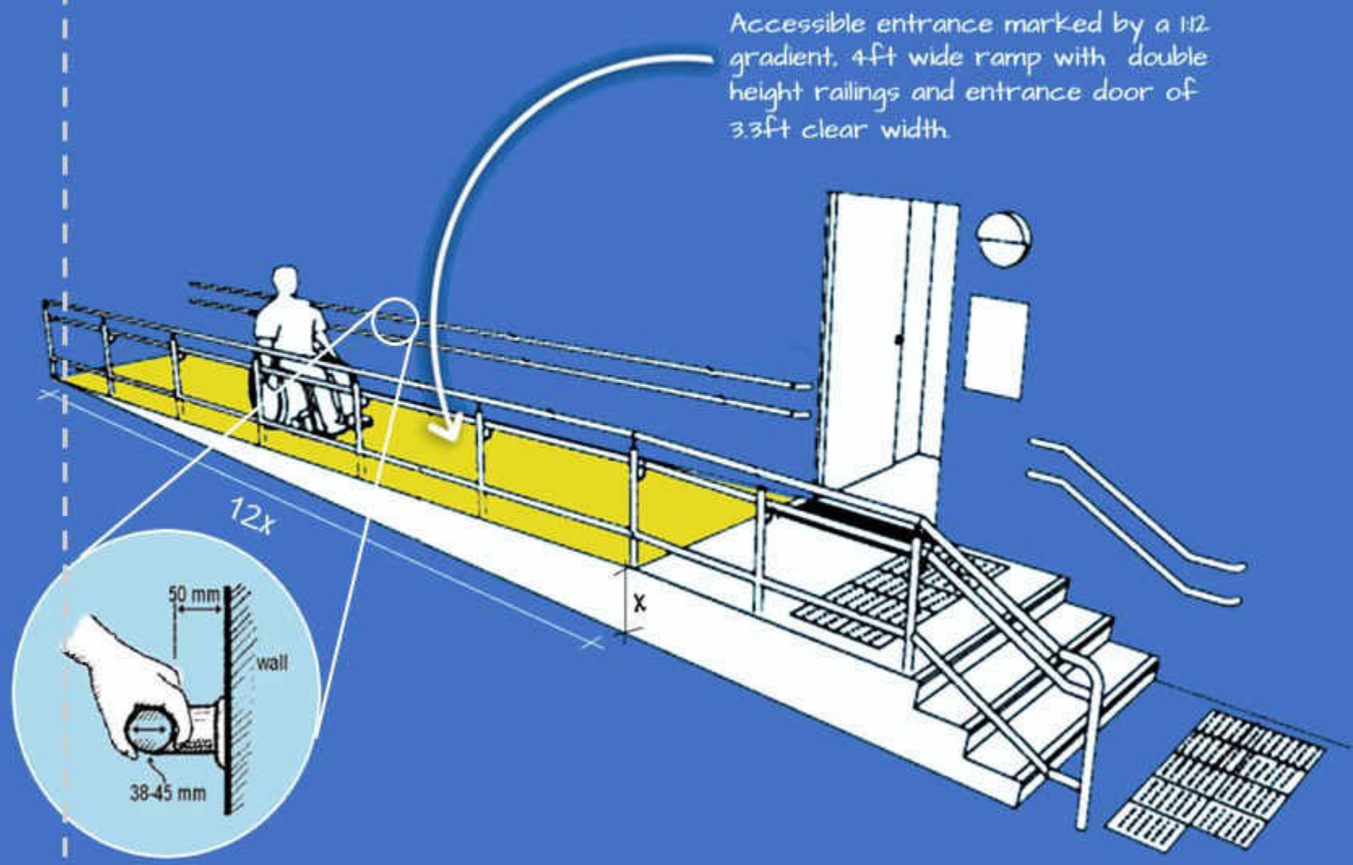
- Parking is located near the entrance of the building, prominently marked with a signboard which is visible from a distance.
- The parking leads to the entrance which has been created with a wide gentle slope seamlessly connecting into the entrance corridor of the building.
- The entry is marked with a well contrasted tactile guiding path and double height rounded handrail provided for additional support.

3

Clauses 5.4 and 7.2, Harmonised Guidelines
Clauses B 4 and B 6.2, Chapter 13, Part 3, NBC Vol.1

ACCESSIBLE ENTRANCE

Graphic reference source: National Building Code Part 3, Chapter 13



Accessible Entrance

- Minimum **1200mm** (4ft) **wide unobstructed ramped entrance/approach of gradient 1:12, with stairs and minimum 1000mm** (3.3ft) wide door.
- Ramp must have **continuous rounded double height handrails** (760mm(2.5ft) and 900mm(3ft)) on both sides; may also be provided with **Braille indicators** marking start and end of ramp, on the handrails.
- **Warning tiles at start and end, non-slippery flooring, landing and signage is mandatory.**

Accessible Entrance

- **No ramp provided and if provided, designed very steep, narrow or slippery.**
- **Handrails not provided or not as per standard design**
- **Ramp not accentuated** with warning tiles, braille indicators or signage.
- **Ramp obstructed** by landscaping, protruding objects, parking etc.

Rabindra Mandap, Bhubaneshwar, Odisha

- The grandeur of the building has been complemented by giving the ramp a homogeneous finish, similar to the building.
- The ramp has been made accessible by providing warning tiles and a well contrasted tactile path along with double height rounded handrails.
- The ramp has also been accentuated by providing a prominent signage marking the way.

Government Museum, Egmore, Chennai, Tamil Nadu

- This being a building of heritage value had to be made accessible through minimum intervention.
- Approach to the entrance of the building has been made accessible by providing a ramp with a continuous and well contrasted tactile guiding path ending in warning tiles.
- The ramp has been provided with double height rounded handrails for added security, comfort and safety.

Additional Secretariat Building, Shillong, Meghalaya

- The entrance to the building has been made accessible by provision of ramp along with the steps to access the plinth of the building.
- The ramp has been developed with a gentle slope and accentuated by providing a tactile guiding path and warning tiles at the beginning, middle and end of ramp.
- The double height handrails have been developed with rounded edges. For additional support, a handrail has also been provided along the wall.

Collectorate, Kannur, Kerala

- A gradual ramp provided at the entrance to the building makes it accessible.
- A guiding tactile path has been provided on the ramp as are double height rounded handrails complementing the steps to enter the building.
- Accessibility to be further enhanced by providing warning tiles.

Office of Accountant General, Kohima, Nagaland

- A ramp with double height rounded handrails on both sides makes the entrance to the building accessible.
- However, the ramp has be kept obstruction free and accessibility to be further enhanced by providing warning tiles and tactile guiding path.

Centre for Disability Study in Mizoram University, Aizawl, Mizoram

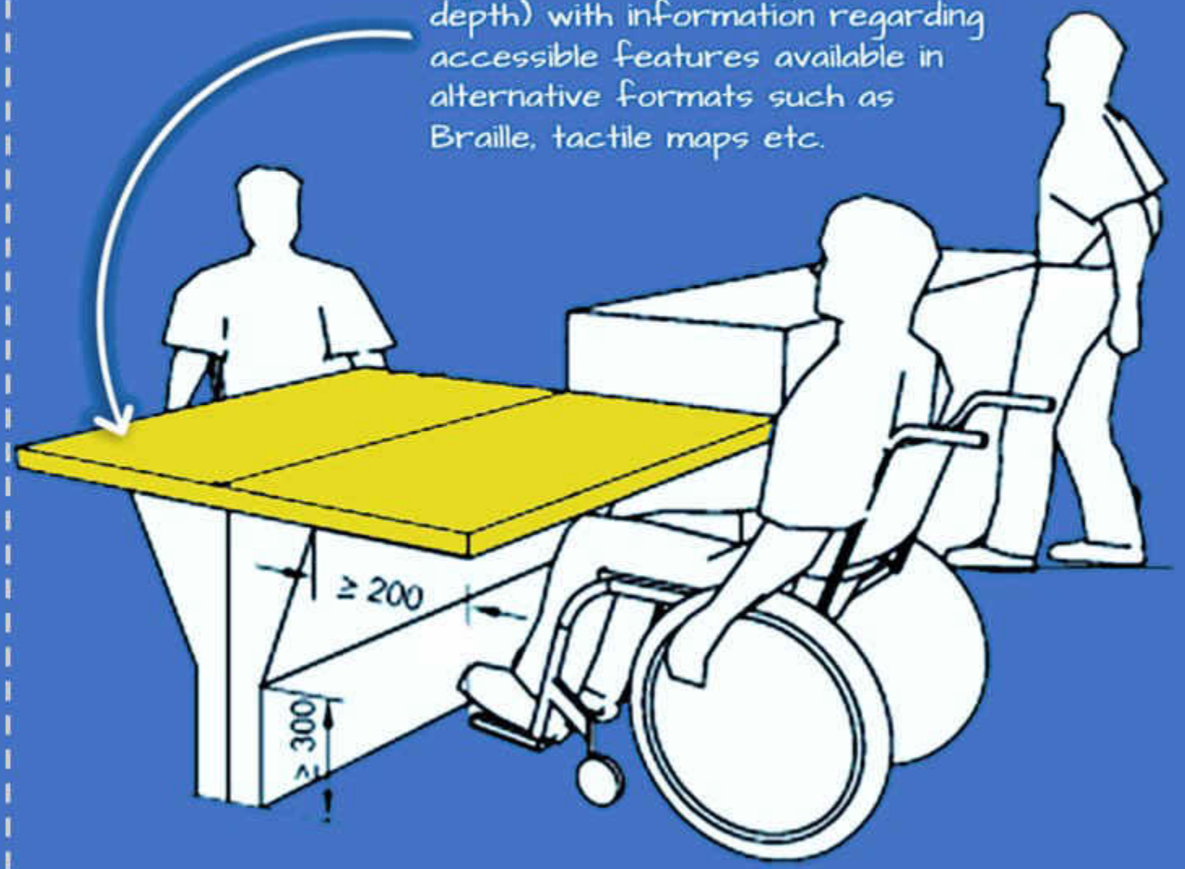
- The entrance to the building has been provided with a ramp of gradual slope with well defined and colour contrasted tactile guiding path.
- Warning tiles need to be added before the ramp to enhance accessibility.
- The ramp further continues as an accessible tactile path leading inside the building.

4

Clause 5.11, Harmonised Guidelines
Clause B 10, Chapter 13, Part 3, NBC Vol.1

ACCESSIBLE RECEPTION

Graphic reference source: National Building Code Part 3, Chapter 13



Accessible Reception

- **Reception or information desks made accessible by providing low (counter top at 800mm (2.75ft) or double height counter with prominent signage.** Minimum unobstructed space of 900mmX1200mm (3ftX4ft) before counter, leg space of 800mm (2.75ft) height below counter and maximum counter depth upto 480mm(1.6ft).
- **Alternative media for communication** - induction loop, braille, audio etc.
- Information of accessible facilities in building to be made available.
- Staff to be sensitized.

Accessible Reception

- **No accessible reception/ counter** provided or created inside small room.
- **Leg space not provided below** the counter or counter top too deep.
- Information on accessible features not available or limited information available.
- **Information not available in alternative formats.**
- **Ssignage not displayed prominently.**

Krishna Nagar Metro Station, Lucknow, Uttar Pradesh

Source: https://themetrorailguy.com/2017/09/05/lmrcl-releases-lucknow-metros-fare-chart-smart-card-info/

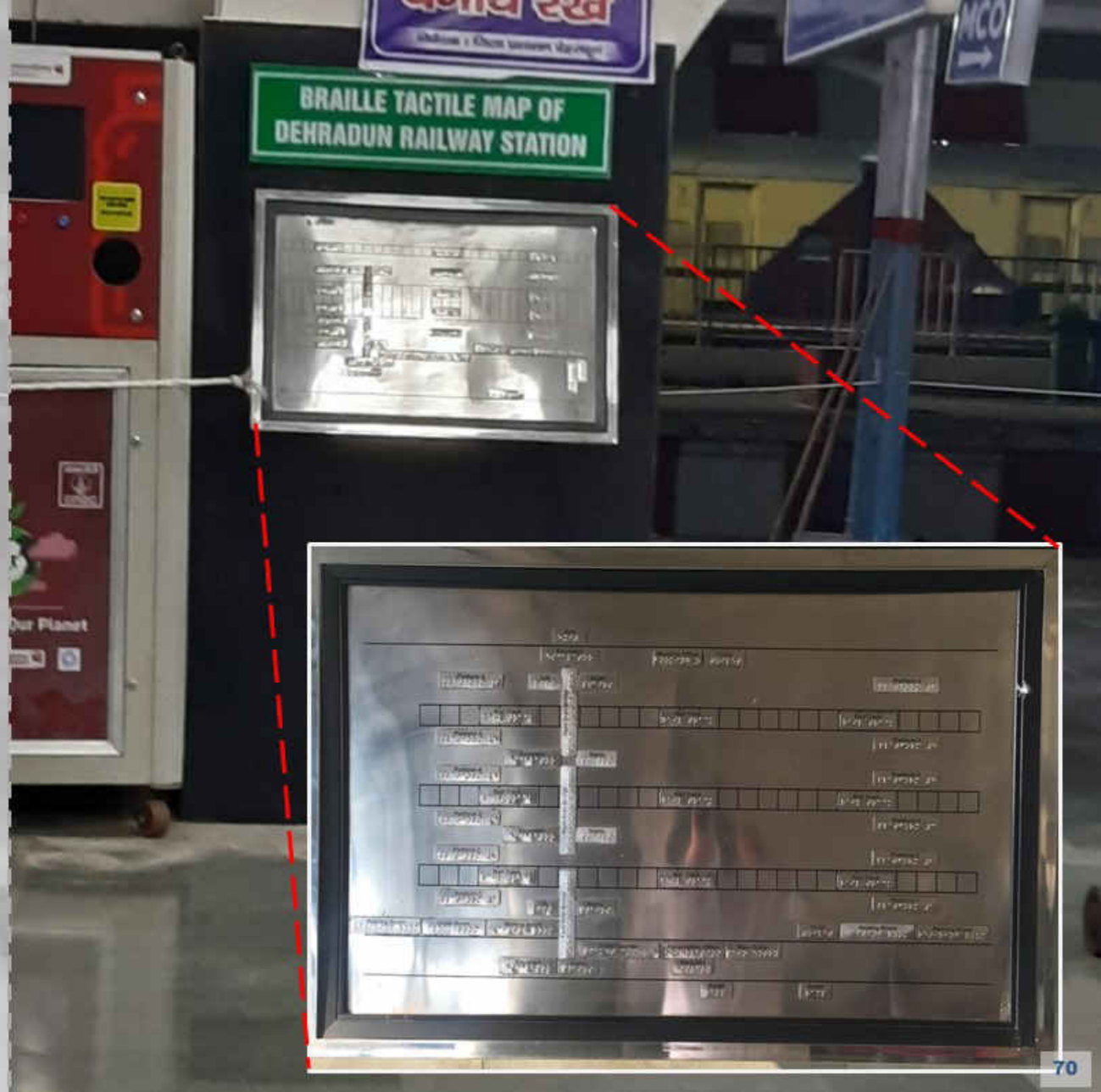
- The ticketing counter at the metro station has been carefully designed for use by Persons with Disabilities with a low height counter.
- Facilities such as digital display have also been provided for ease of understanding and communicating with persons with hearing and speech impairment.
- The counter is prominently marked with a signage.
- A guiding path with a warning patch has been created by use of stainless steel buttons leading up to the counter.

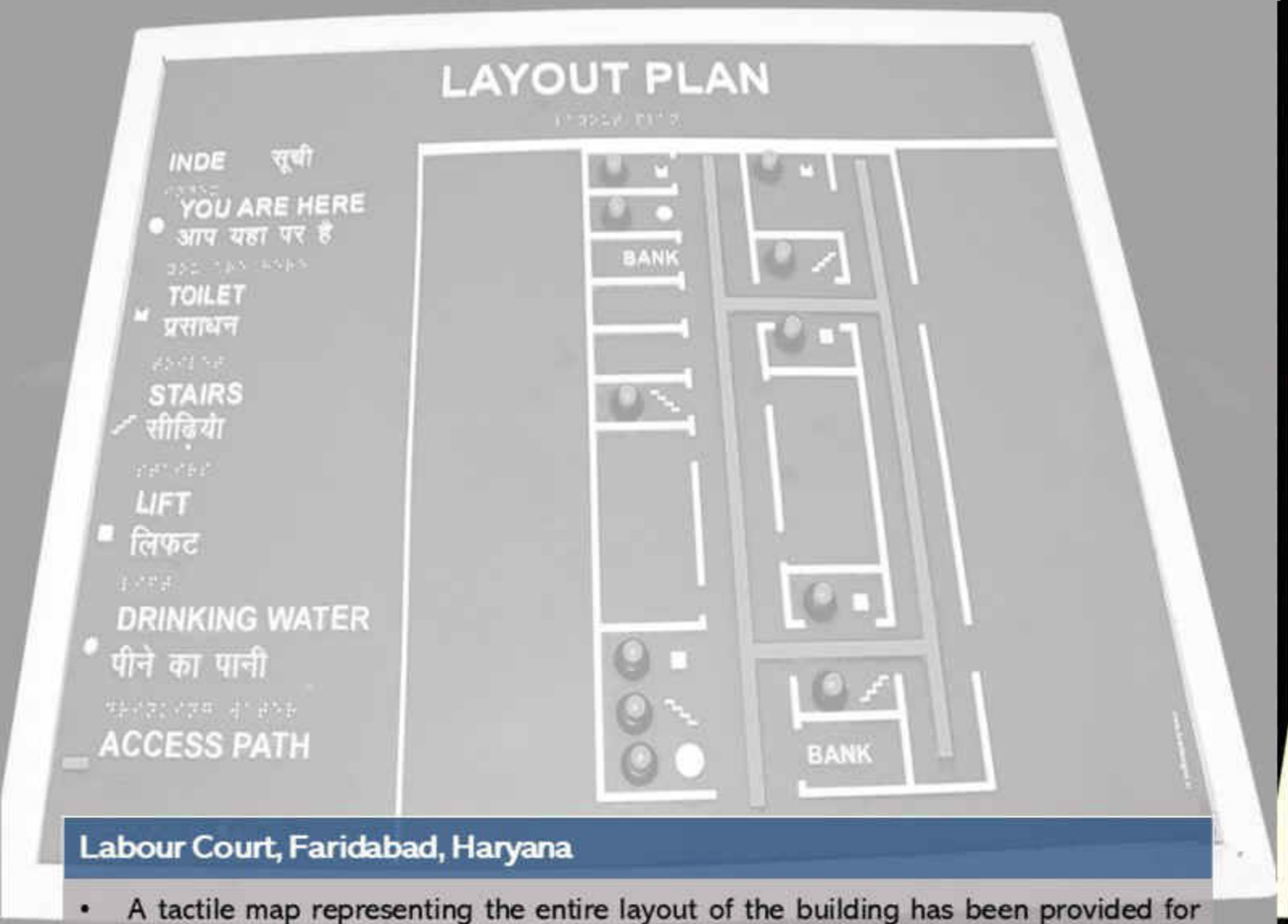
Netaji Subhash Chandra Bose International Airport, Kolkata, West Bengal

- An accessible help desk created by providing low height counter, easily accessible by wheelchair users.
- The desk has also been marked prominently with an universal accessibility signage making it easy to be spotted from afar.
- A guiding path with a warning patch has been created by use of stainless steel tactile buttons leading up to the help desk.

Dehradun Railway Station, Dehradun, Uttarakhand

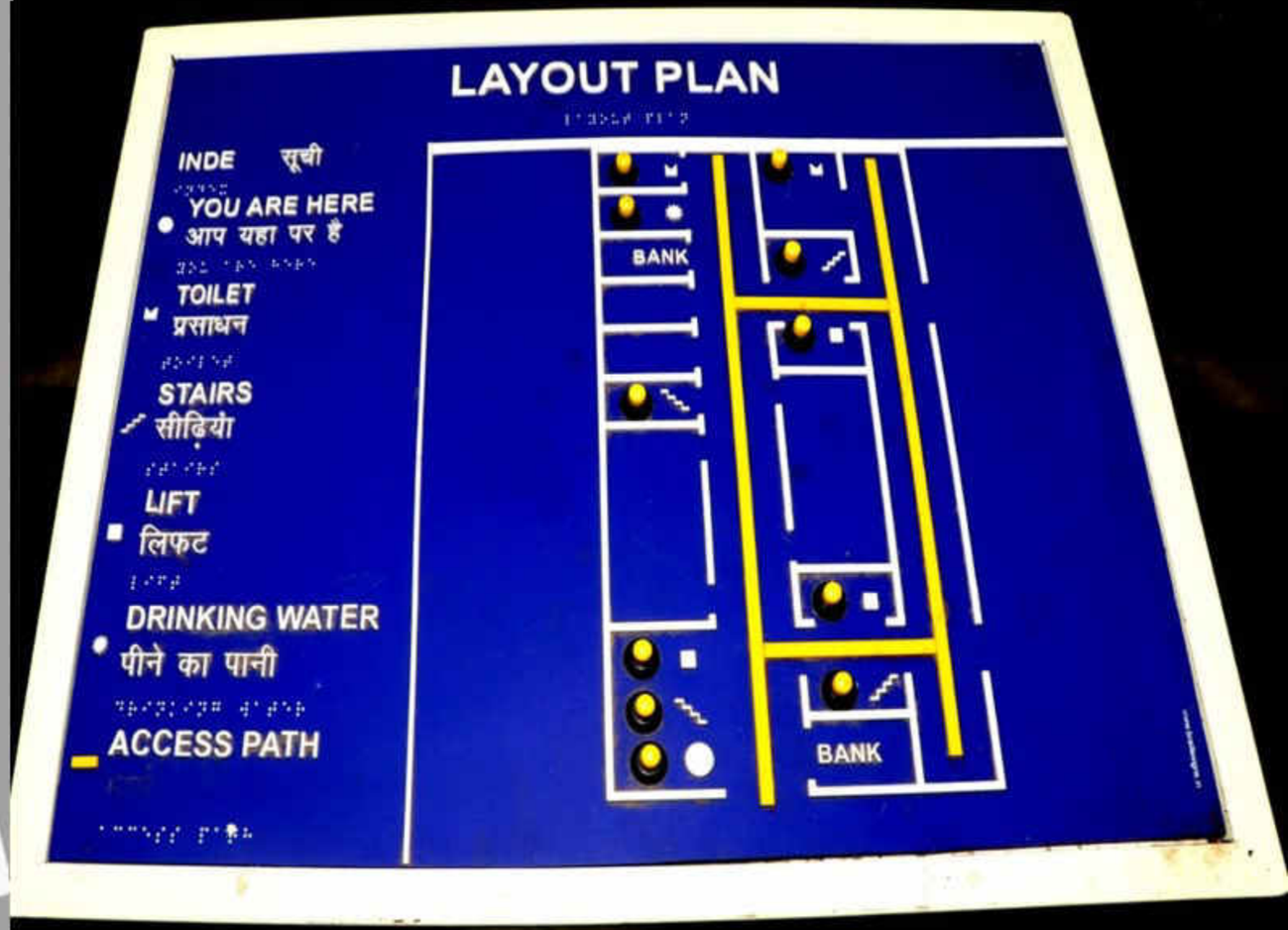
- For the ease of navigation for persons with visual impairment, the entire layout of the station has been provided in the form of a tactile map at the entrance.
- This map is located at an approachable height such that it can be reached comfortably.





Labour Court, Faridabad, Haryana

- A tactile map representing the entire layout of the building has been provided for the ease of navigation for persons with visual impairment.
- The location of the map is within an approachable height such that it can be accessed comfortably.



Secretariat, Chennai, Tamil Nadu

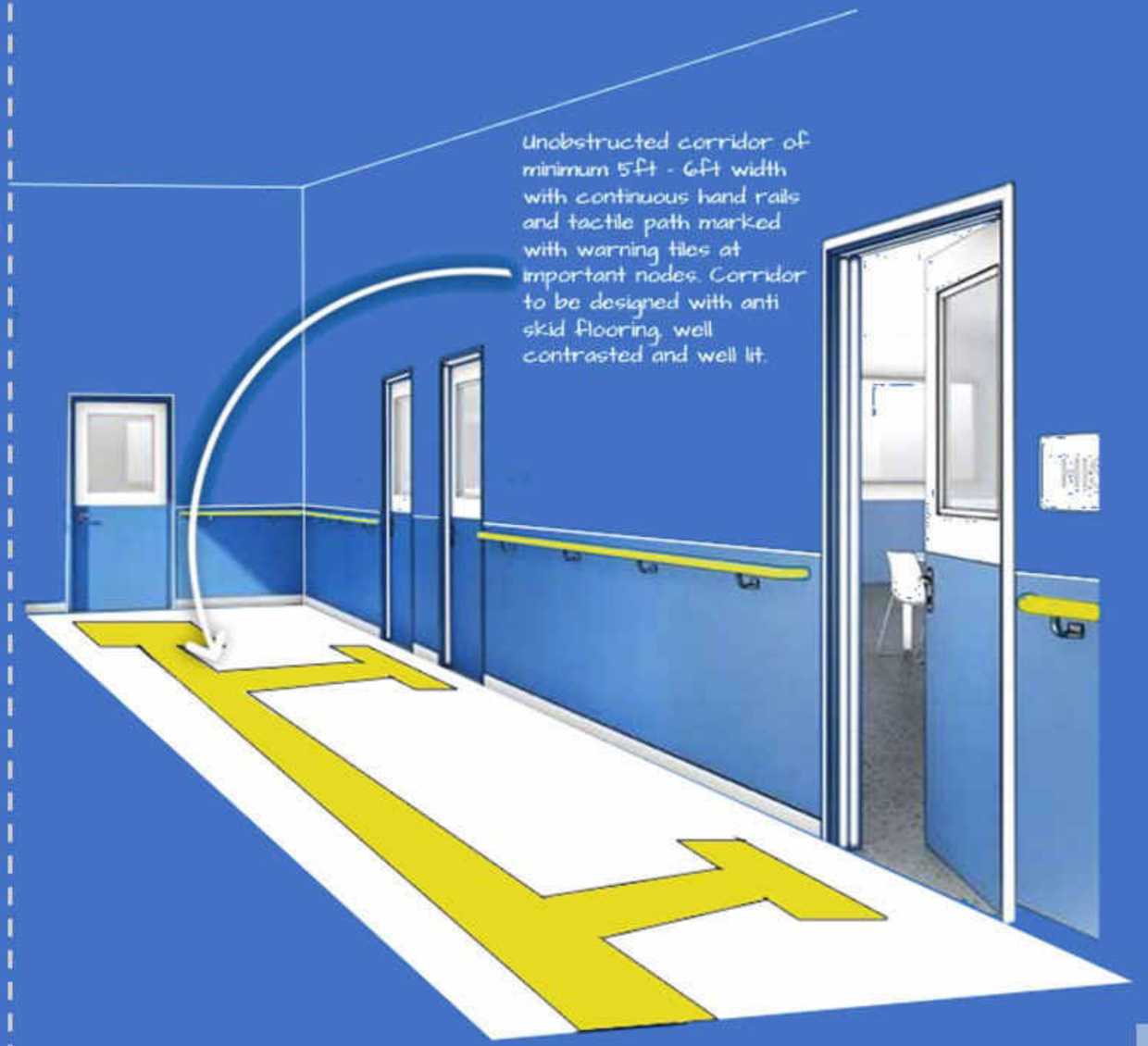
- This tactile map of the layout of the campus placed just at the entrance of the campus helps persons with visual impairment to navigate with ease.
- This height of the board is easily approachable such that it can be reached comfortably.

5

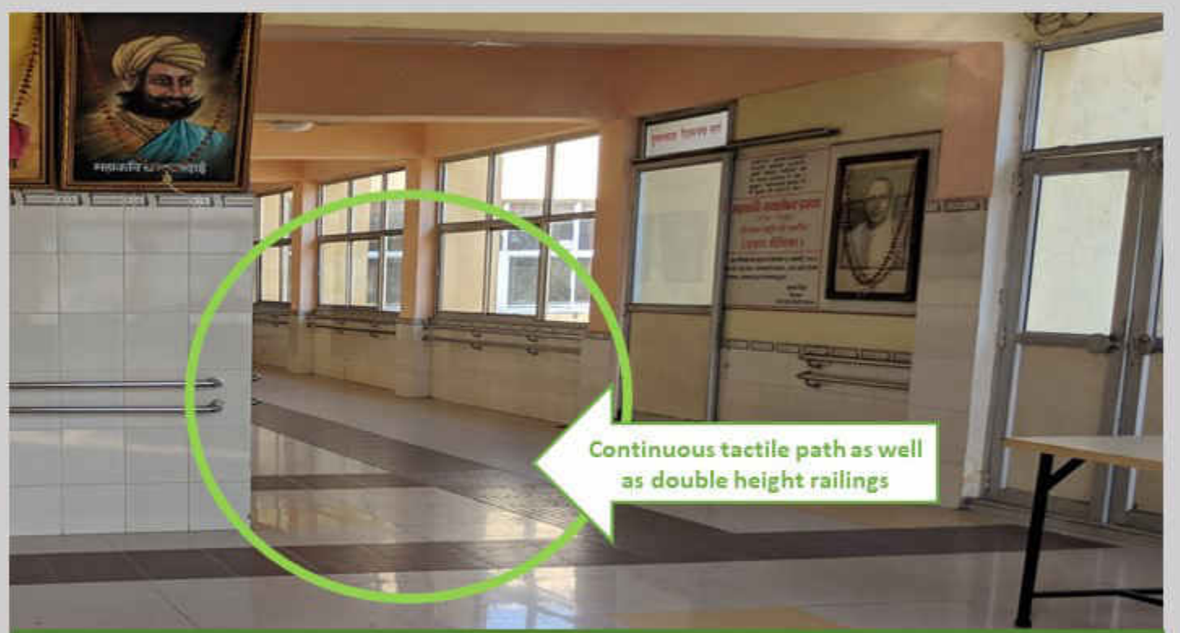
Clause 5.5, Harmonised Guidelines
Clause B 5.2, Chapter 13, Part 3, NBC Vol.1

ACCESSIBLE CORRIDORS

Graphic reference source: https://www.gradus.com/files/webfm/brochure_-_wall_protection_systems_-_march_2017_update_dec_2018.pdf

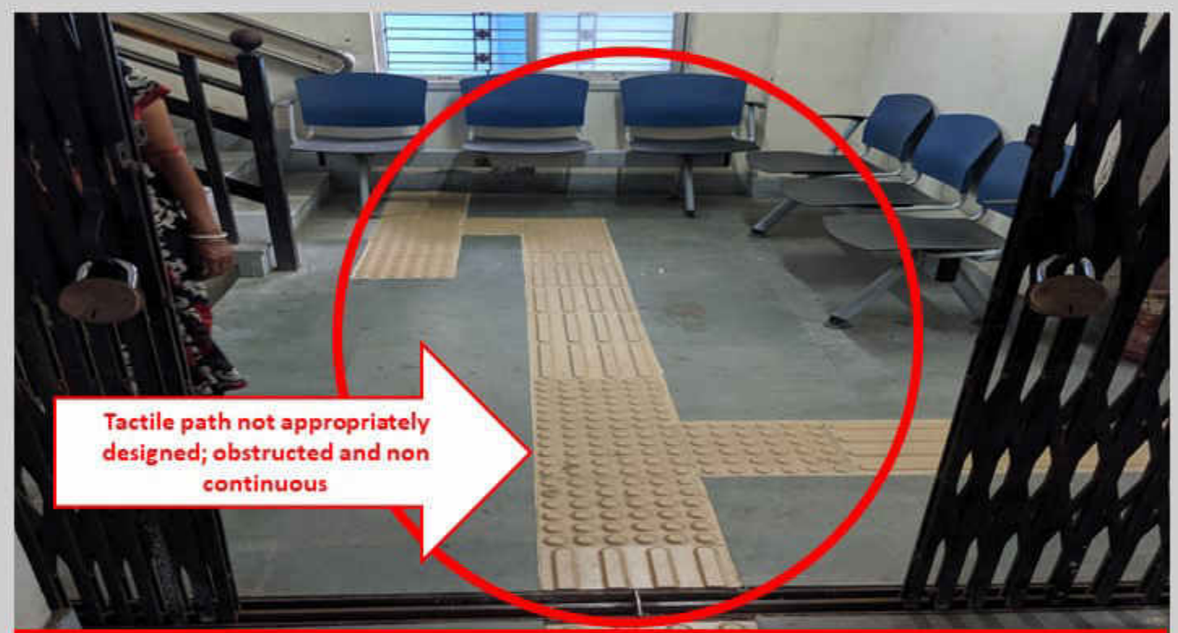


Accessible Corridors



- **Clear width of 1500mm to 1800mm (5ft to 6ft) to be maintained throughout with anti skid flooring and well contrasted tactile path.**
- Illumination level should be maintained at 150 lux; no glare but well lit.
- Should be supported by directional and informational signage.
- **Double height rounded handrail** to be kept continuous as much as possible.
- **Room doors should not open outside on to the corridors.**

Accessible Corridors



- Clear unobstructed **width of 1500mm to 1800mm (5ft to 6ft) not maintained.**
- Anti skid flooring or tactile path not provided. Flooring not well contrasted.
- **Not kept free of obstacles like - plantation, seating arrangements** etc.
- Dimly lit and or dark corridor/spaces.
- Tactile guiding tiles not fixed in the direction of movement.

Directorate of Agriculture, Chennai, Tamil Nadu

- The corridors of this building have been made accessible by creating a continuous tactile path appropriately provided with warning tiles at important junctions and nodes, such as in front of the door opening, in front of the lift and starting/ending of the staircase.
- The corridor is brightly lit and kept obstruction free for hindrance free movement.

Guru Tegh Bahadur Hospital, Delhi

- The corridors in the hospital has been made accessible by creating tactile guiding paths using PVC tactile buttons which create a well marked and well contrasted path.
- The corridor is also provided with continuous double height rounded handrails.
- The corridor is brightly lit and kept obstruction free for hindrance free movement.

Civil Station, Kalpetta, Kerela

- An accessible corridor is created to connect each floor owing to the contour of the site.
- Well contrasted tactile guiding path provided for ease of navigation for persons with visual impairment.
- Double height rounded handrails provides additional security and support to people of varying heights.

Veer Savarkar International Airport, Port Blair, Andaman and Nicobar Islands

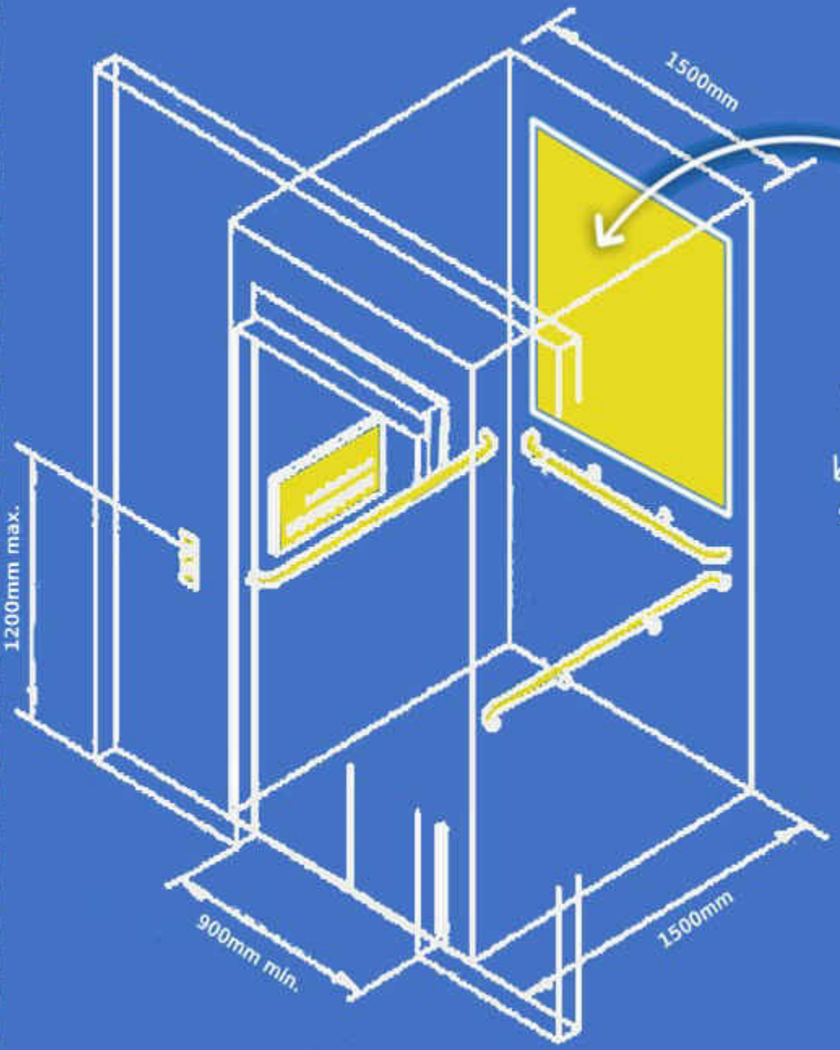
- An accessible route has been created within the airport building by using stainless steel tactile buttons.
- The path is designed with warning tiles at all important nodes and junctions.

6

Clause 7.4, Harmonised Guidelines
Clause B 6.4, Chapter 13, Part 3, NBC Vol.1

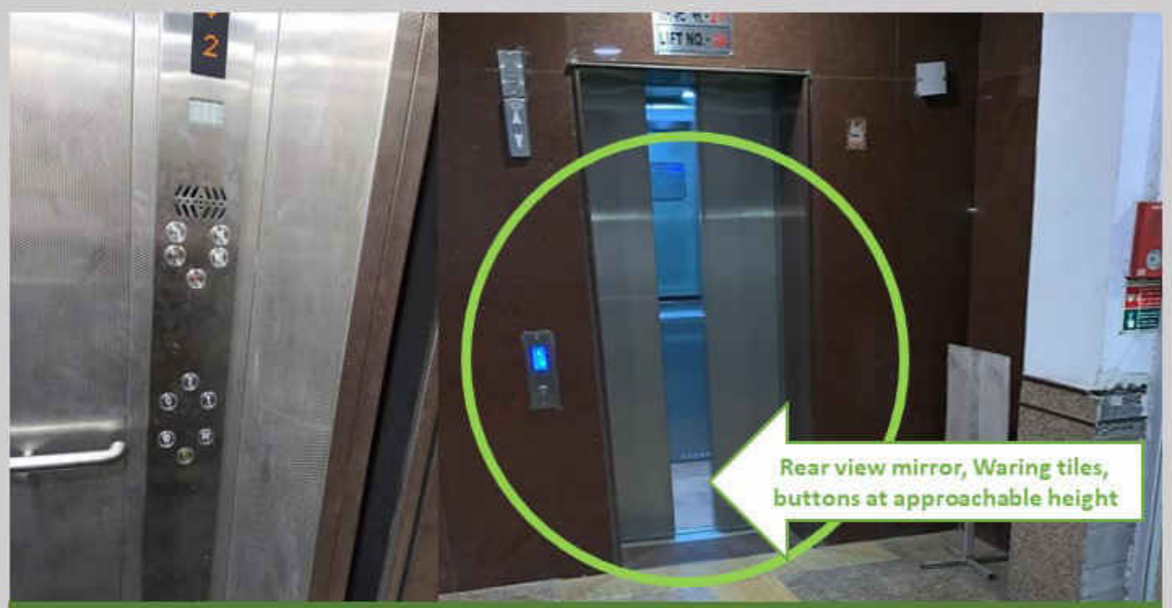
ACCESSIBLE ELEVATORS

Graphic reference source:https://www.bca.gov.sg/data/ImgCont/202/dimension.htm



Lift car with minimum dimensions 5ft X 5ft with rear mirror, braille buttons, audio anouncement systems, alarm button and grab bars

Accessible Elevators



- **Minimum internal car size should be 1500mmX1500mm** (5ftX5ft), possibly 13 passenger capacity lift with grab bars at 900mm(3ft) height.
- Minimum door width to be maintained as 900 mm (3ft).
- **Mandatory accessible accessories** such as Braille buttons, auditory announcement systems and digital display, alarm button, emergency brake, rear mirror and other operating mechanisms (control panels) to be provided at an accessible height of 650mm (2.15ft) to 800mm (2.3ft).
- **Signage and warning tactile tiles** must be provided outside the lifts.

Accessible Elevators

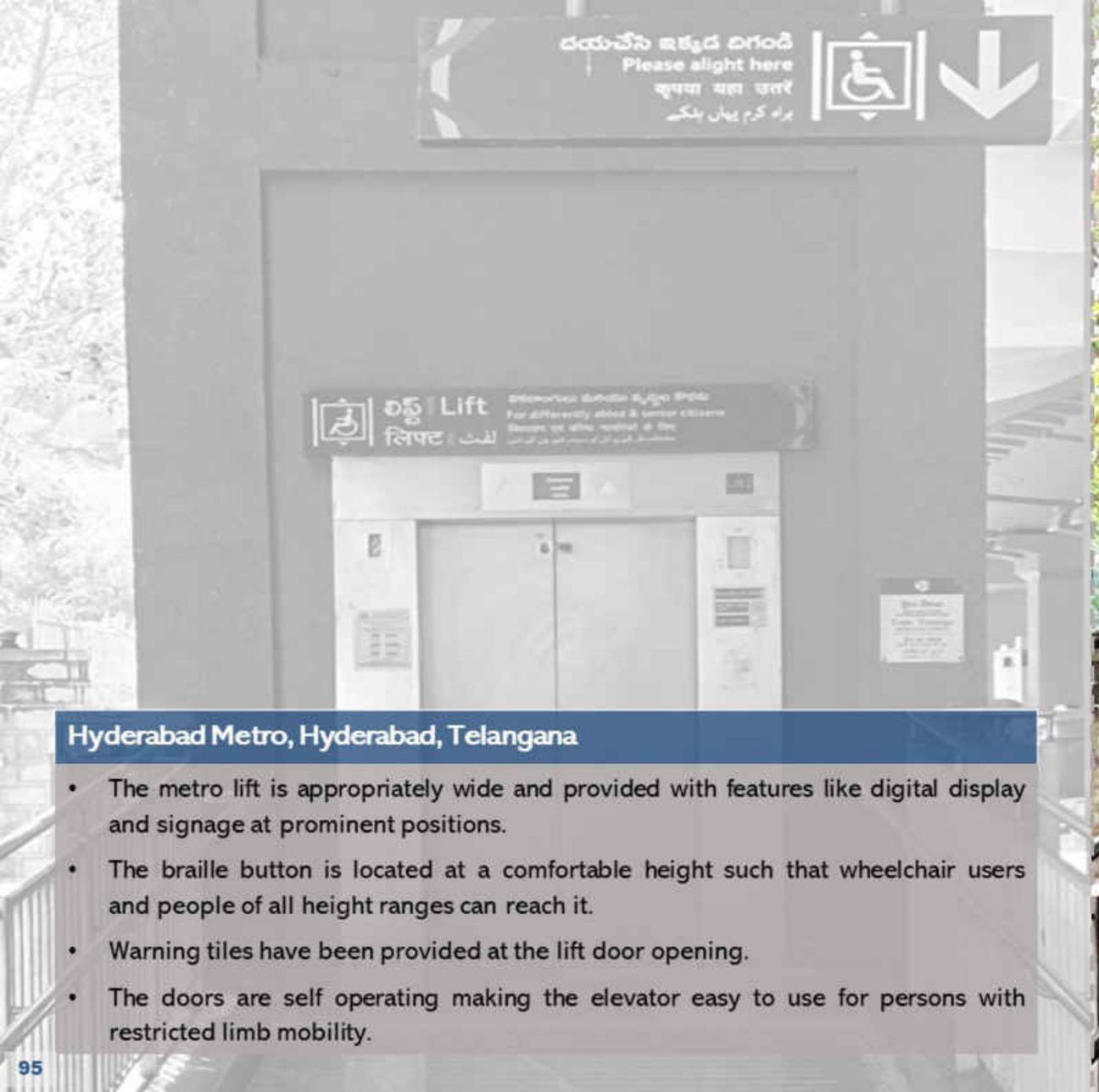
- **Lift size is not adequate** (even for single wheelchair) or **door is not wide enough.**
- **Accessible accessories**, grab bars, braille buttons, auditory systems, mirror, alarm button **not provided or placed at inaccessible reach or vision range.**
- **Warning tactile tiles not (or wrongly) provided** in front of the lift door opening.

Secretariat, Jaipur, Rajasthan

- The lift has been made accessible by providing outdoor accessories, such as an accessible braille signage at an approachable height from the floor and digital display displaying the floor numbers and movement of the lift.
- Warning tiles have been provided at the lift door opening.
- The wide door of the lift is self operating which makes using the lift easier for persons with restricted limb action.

State Library, Sector 17, Chandigarh

- Access to the lift has been well marked by usage of warning tiles located near lift door opening.
- The button panel has been placed at an approachable height for the convenience of wheelchair users.
- The door of the lift is wide enough for wheelchair users.



Hyderabad Metro, Hyderabad, Telangana

- The metro lift is appropriately wide and provided with features like digital display and signage at prominent positions.
- The braille button is located at a comfortable height such that wheelchair users and people of all height ranges can reach it.
- Warning tiles have been provided at the lift door opening.
- The doors are self operating making the elevator easy to use for persons with restricted limb mobility.

Shree Guru Ram Das Jee International Airport, Amritsar, Punjab

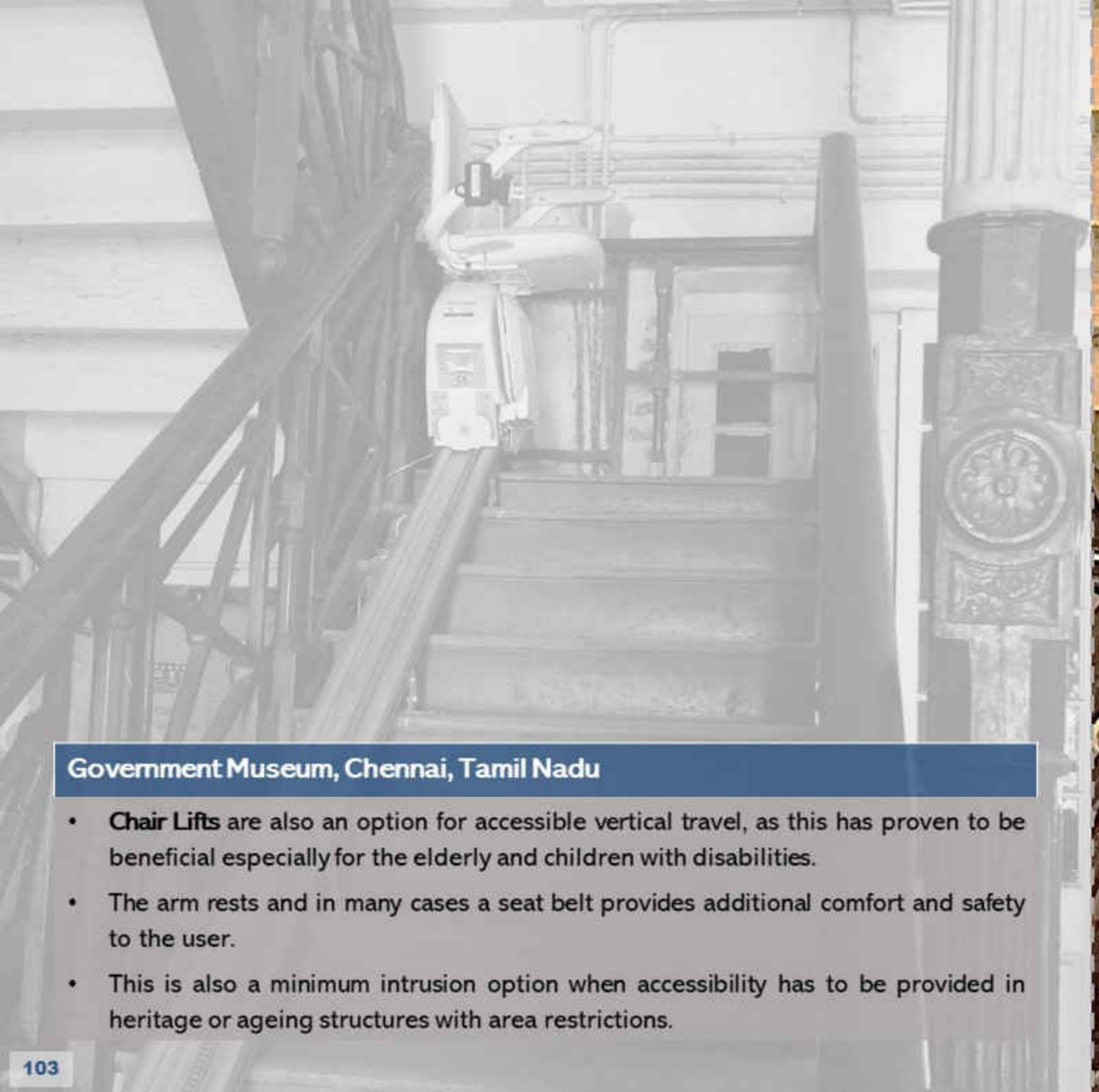
- The lift is spacious, allowing barrier free manoeuvring of wheelchairs inside the lift car.
- The lift has been provided with accessible features such as coloured braille buttons, speakers for announcing floors and emergency telephone along with alarm button. The panel with these accessories has been positioned at an universally approachable height.
- The lift car is also provided with grab bars on 3 walls for added support.

Government Museum, Chennai, Tamil Nadu

- **Hydraulic lifts** are provided where availability of space is limited.
- The entry to this lift has been made seamless by use of a gradual ramp.
- The operating button panel has been provided at an convenient height for even wheelchair users to approach it comfortably.

Government Museum, Chennai, Tamil Nadu

- In places where providing lifts is not possible due to limitations of space or topography, such **platform lifts** may be provided for wheelchair users to traverse height differences.
- The platform lift must be provided with a kerb ramp for easy boarding and de-boarding and a foldable handrail for secured grip during movement.
- If possible, the platform may also be provided with wheel locks to secure the wheelchair in one position only.



Government Museum, Chennai, Tamil Nadu

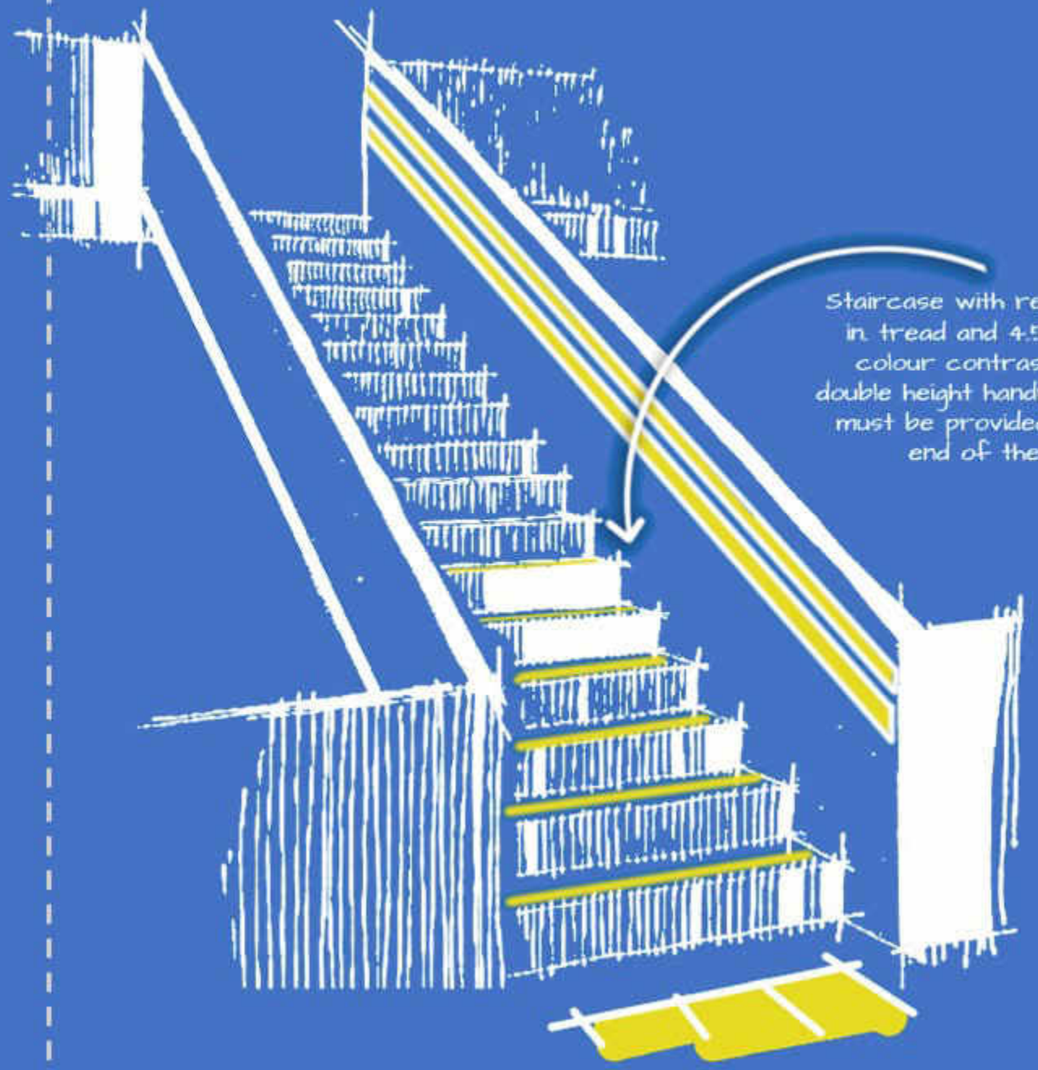
- **Chair Lifts** are also an option for accessible vertical travel, as this has proven to be beneficial especially for the elderly and children with disabilities.
- The arm rests and in many cases a seat belt provides additional comfort and safety to the user.
- This is also a minimum intrusion option when accessibility has to be provided in heritage or ageing structures with area restrictions.

7

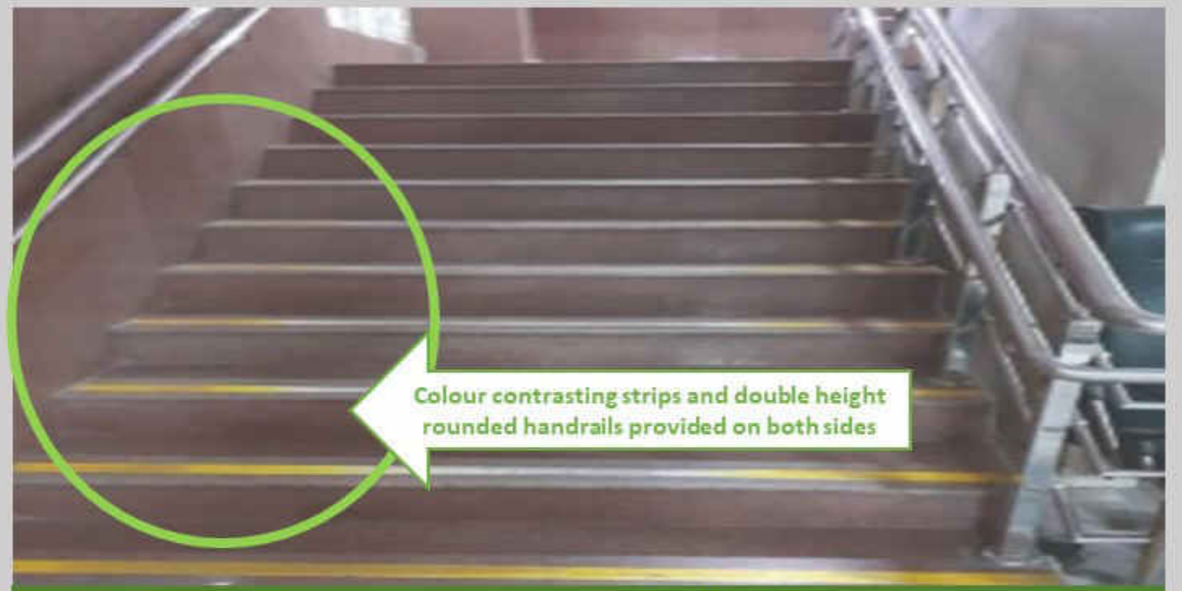
Clause 7.3, Harmonised Guidelines
Clause B 6.3, Chapter 13, Part 3, NBC Vol.1

ACCESSIBLE STAIRCASES

Graphic reference source: https://in.pinterest.com/pin/431993789248726147/



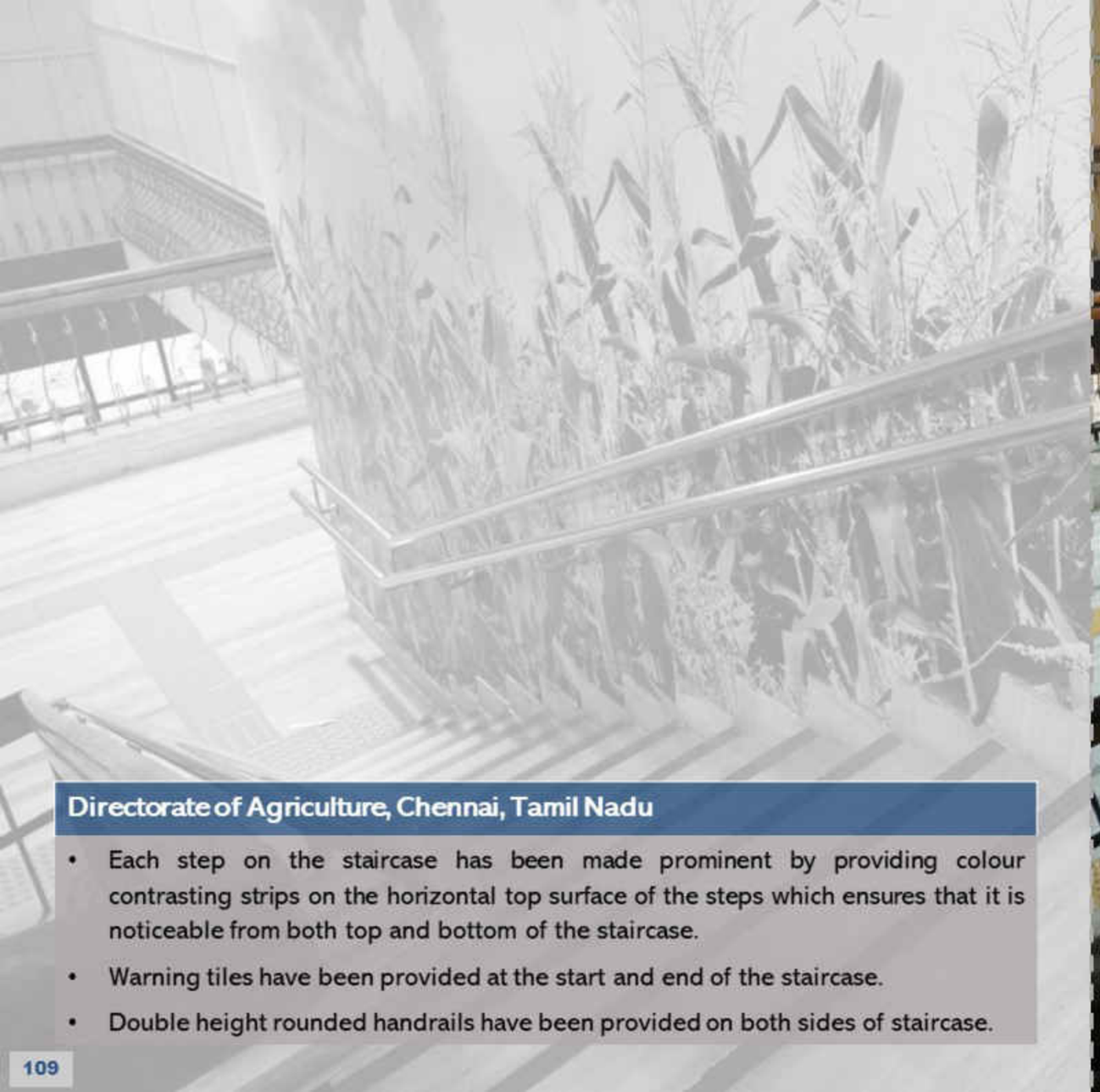
Accessible Staircases



- **Staircase with regular steps of tread (width) 250mm (9ft) and rise (height) 150mm (4.5ft)** with colour contrasting strips (glow in the dark, retroreflective kinds) on the flat edge.
- The stair lobby must be well lit.
- Warning tiles or **Braille indicators on handrails to** mark start and end.
- **The staircase has to be provided with continuous rounded double height handrails** (760mm (2.5ft) & 900mm (3ft)) on both sides. The diameter of handrail to be 38-45mm and a gap of 50mm to be kept from the wall.

Accessible Staircases

- **Irregular or higher or narrow steps** provided.
- **Colour contrasting strips are not provided** or placed on the vertical surface, thus not visible, or wrong design and colour and non – reflective.
- **Many a times edges are left sharp or broken.**
- **Handrails not designed as per standard** or not provided on both sides or placed too close to the wall leaving no space for proper grip.
- **Warning tiles not provided.**



Directorate of Agriculture, Chennai, Tamil Nadu

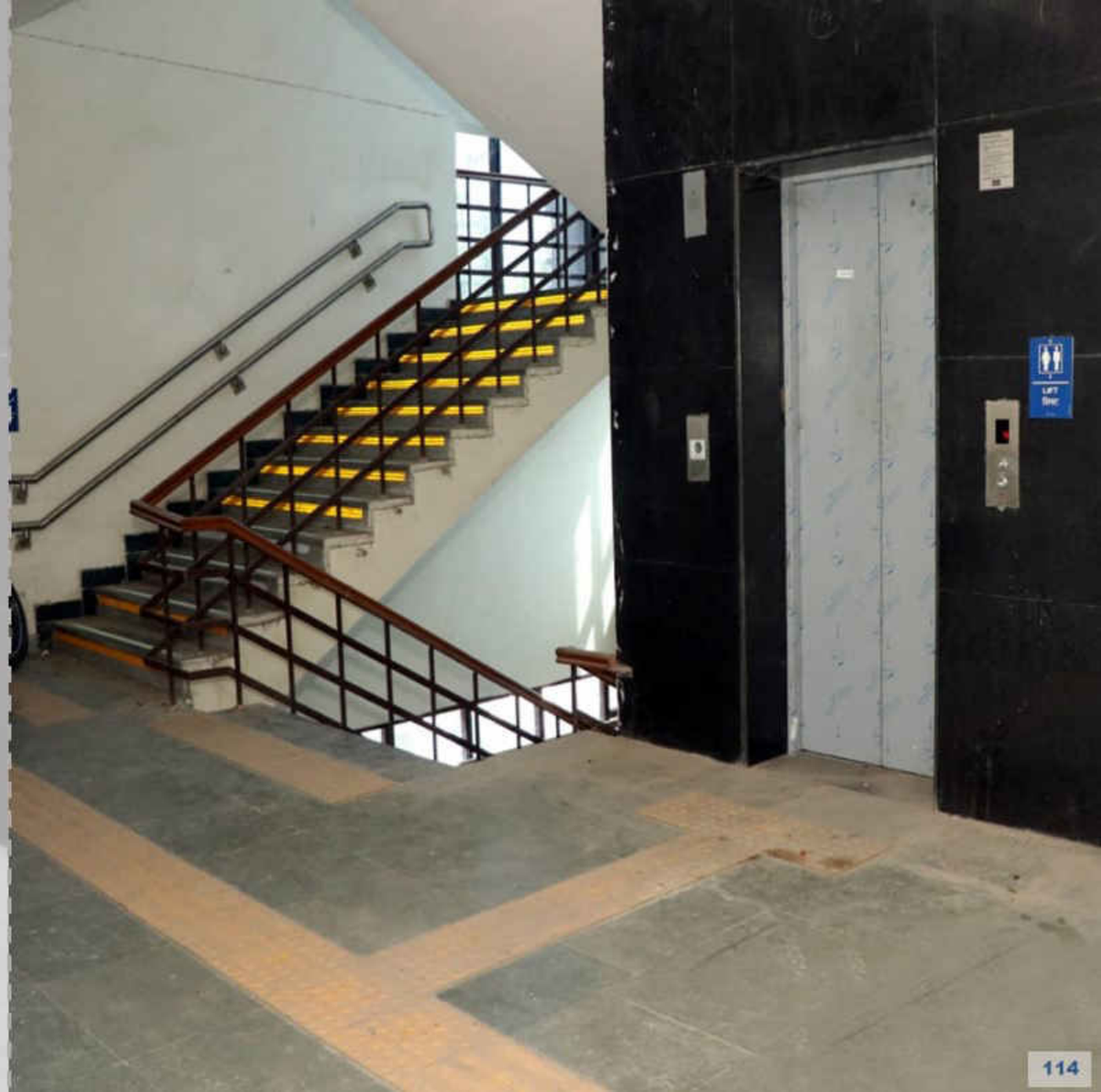
- Each step on the staircase has been made prominent by providing colour contrasting strips on the horizontal top surface of the steps which ensures that it is noticeable from both top and bottom of the staircase.
- Warning tiles have been provided at the start and end of the staircase.
- Double height rounded handrails have been provided on both sides of staircase.

Main Secretariat Building, Shillong, Meghalaya

- The edges of the steps have been made noticeable for everyone including persons with low vision by providing colour contrasting strips on both horizontal and vertical surfaces.
- The double height rounded handrails have been provided along the stairs as well as the landings.
- Warning tiles have been provided at the beginning and end of the staircase.

Labour Court, Faridabad, Haryana

- This has been observed as an example of good practice for designing accessible corridors as continuous tactile paths have been created and the corridor has been kept obstruction free.
- Colour contrasting strips provided on both horizontal and vertical surfaces make the edges of the steps noticeable.
- Double height rounded handrails have been provided.
- Warning tiles have been provided at the start and end of the staircase as well as in front of the elevator as shown in the photograph.

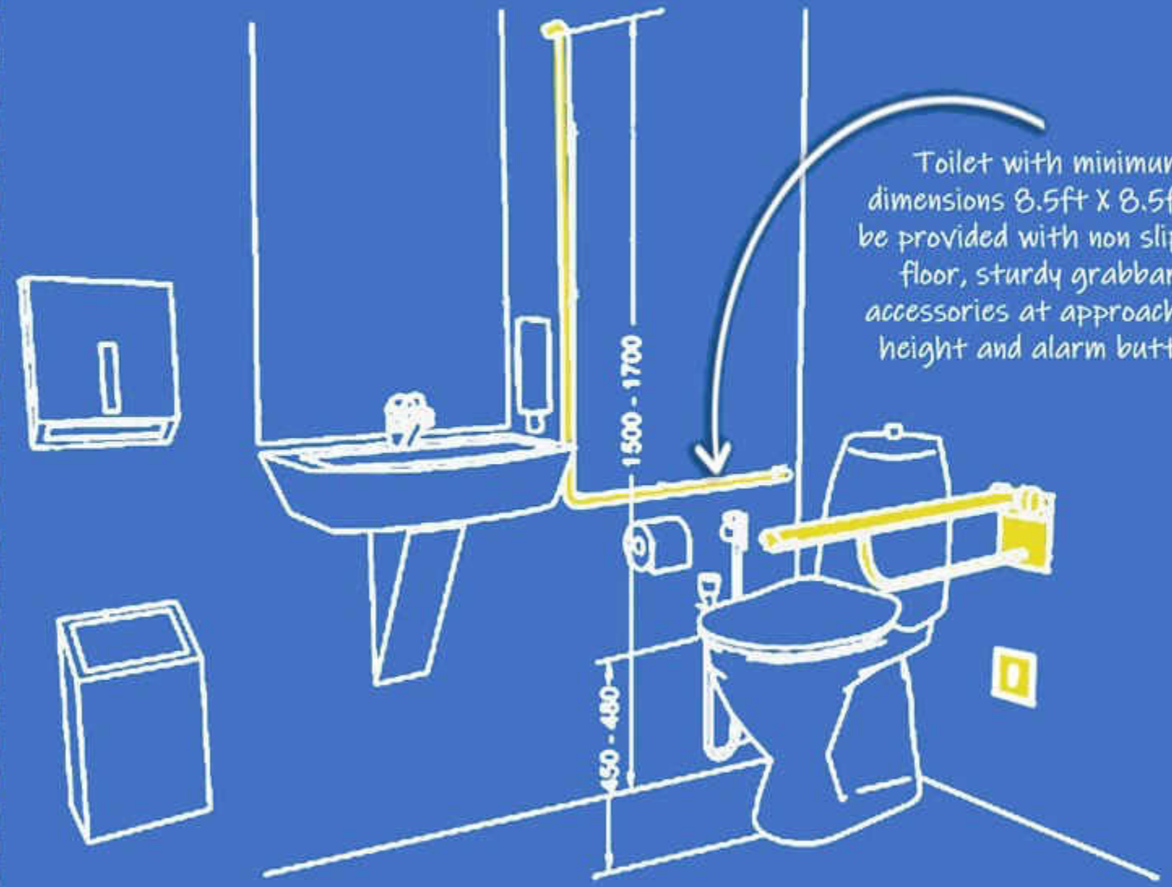


8

Chapter 8, Harmonised Guidelines
Clause B 9, Chapter 13, Part 3, NBC Vol.1

ACCESSIBLE TOILETS

Graphic reference source: National Building Code Part 3, Chapter 13



Accessible Toilets

- **Minimum toilet dimension should be 2000mm X 2200mm** (6.5ft X 7.3ft), sufficient for wheelchair manoeuvrability.
- **Floor Finish** - Toilet to be provided with well contrasted, anti skid flooring, with proper drainage and no threshold (*choukhat).*
- Toilet door must be of minimum 900mm (3ft) wide. Latches to be placed at top, middle and bottom, with an easy-use mechanism which may be operated by foot also. The door handles must be of D-type or lever type, instead of knobs.
- Accessories/Fittings -
  - **Taps to be provided with sufficiently long necks and easy to use lever type operating mechanism**
  - WC top height should be at 450mm to 480mm (approx. 1.5ft)
  - Washbasin top height must be 750mm to 800mm (approx. 2.5ft)
  - **Grab bars/ door handles/ all fittings/ accessories/ operable items placed at approachable height of 300mm to 1000mm** (1ft to 3.3ft) from the floor and be easy to operate (Long/lever handles of taps)
  - **Enough grab bars which must have adequate strength to bear weight upto 250Kgs.**
  - **Emergency buttons at 300mm (1ft) from the floor (preferably on 3 walls)**
  - **Mirror may be placed at an angle** for convenience of wheelchair users.
  - The toilet must be **well lit.**

Accessible Toilets

- Toilet **dimension is not sufficient for wheelchair manoeuvrability.**
- **Approach to the toilet door if provided by means of a ramp, is often kept narrow, slippery and too steep without a proper landing.**
- **Entry at door not levelled** or provided with *chaukhat.*
- **Door design makes operating the wheelchair difficult or the door opening is too narrow for a wheelchair.**
- **Grab bars not provided,** and if provided, not as per standard design/ strength.
- Latches difficult to use.
- Handles are knob types which are difficult to use.
- Lever type taps with long necks not provided.
- No emergency buttons and if provided not functional.
- The toilet is not well lit and ventilated.
- Anti-skid flooring not provided.
- Cleanliness/leakages inside toilet making it slippery and hence dangerous especially for persons with disabilities.

High Court Building, Shillong, Meghalaya

- Grab-bars are provided for use on both right and left sides, for support and ease of transfer, aptly covering all sanitary fittings.
- The fittings such as hand faucet, toilet paper holder and valves are located within comfortable reach range.
- An alarm button has also been provided to call for help in case of emergency.

Calicut Airport, Kerala

- The toilet is finished with non-slippery floor tiles.
- The grab-bars provided can be used by left and right handed persons for support and ease of transfer.
- The tap has been provided with a long lever type operating mechanism.
- For the convenience of wheelchair users, the mirror could have been placed above the wash basin and in a slanting position.

Consumer Forum, Sector 19, Chandigarh

- As can be seen in the photograph of the approach to the toilet, exterior accessibility features such as a prominent braille signage at an approachable height and tactile guiding path with warning tiles, have also been provided.
- The mirror has been fixed at an angle to help wheelchair users access it.
- The toilet is finished with non-slippery floor tiles and the grab-bars provided can be used by left and right handed persons and used for enhanced support.

District Collectorate, Kannur, Kerala

- The approach to the toilet has been made accessible by providing a gentle ramp.
- It has been ensured to keep the entry seamless without providing any threshold *(chaukhat)* at the door.
- The toilets have been provided a prominent signage. Also, a waiting area has been created with spacing near the toilet specially reserved for persons with disabilities.
- The ramp is also marked with tactile guiding path appropriately provided with warning tiles in front of important nodes and junctions

Tashi Namgyal Academy, Gangtok, Sikkim

- Accessible toilet block created separately outside the building has been provided with a ramp up to the plinth level having a gentle gradient and handrails for support. The ramp is sufficiently wide to be easily used by a wheelchair user.
- Accessibility must be further enhanced by provision of tactile warning and guiding tiles and signage which is visible from a distance.

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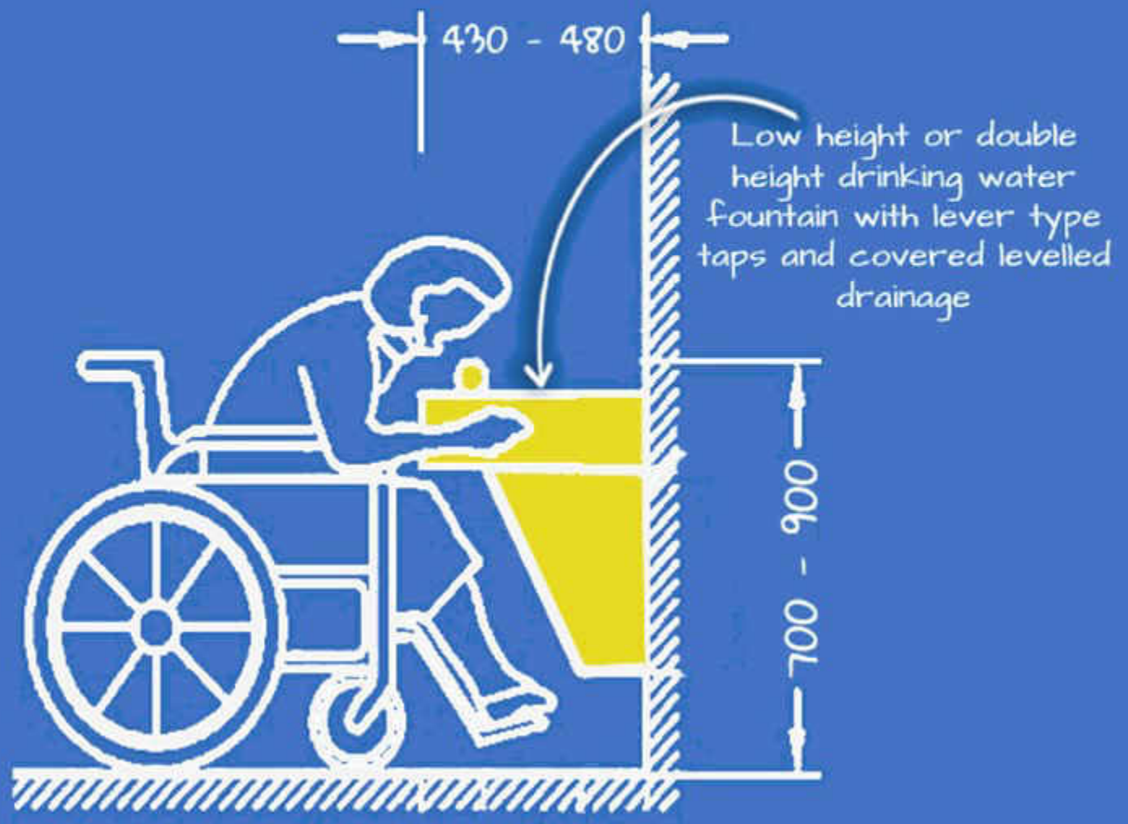
Clause 5.12.1, Harmonised Guidelines
Clause B 7.11, Chapter 13, Part 3, NBC Vol.1

ACCESSIBLE DRINKING WATER FACILITY

Graphic reference source: National Building Code Part 3, Chapter 13



Accessible Drinking Water Facility

- **Drinking water facility area should have clear space of 900mm X 1200mm** (3ftX4ft) in front of the fountain for a wheelchair, **kept dry, anti skid and well drained by means of covered drainage.**
- **Basin must have double heights** (700mm (2.3ft) to 900 mm(3ft)) with leg space of 300mm(1ft) to 680mm(2.1ft) below the counter.
- The **taps must be lever or fountain type with easy to use operating systems** and long neck for maximum reach to wheelchair user. Foot operability may be provided.

Accessible Drinking Water Facility

- **Conventional water coolers placed on platforms, kept inside cage or placed at end of narrow passages** without any leg room or turning space. Slippery surfaces to be avoided.
- **Taps neither provided at two levels** nor with fountain or lever type design making it difficult to be used.
- Open drains, jaali over drains or *chaukhat* not to be provided as it causes hindrance to movement of wheelchair users and persons with visual impairment with or without canes.

Guru Ram Dass Jee International Airport, Amritsar, Punjab

- A double height water fountain has been provided at the drinking water station with ample leg space below the dispensers for wheelchair users.
- The operating system provided is simple and easy to use with button type control.
- The area has been kept dry and clean by providing a rubber mat instead of grills or drain covers which cause hindrance to cane and wheelchair users.
- A prominent signage has been placed which may be spotted from a distance.

GST Bhavan, Pune, Maharashtra

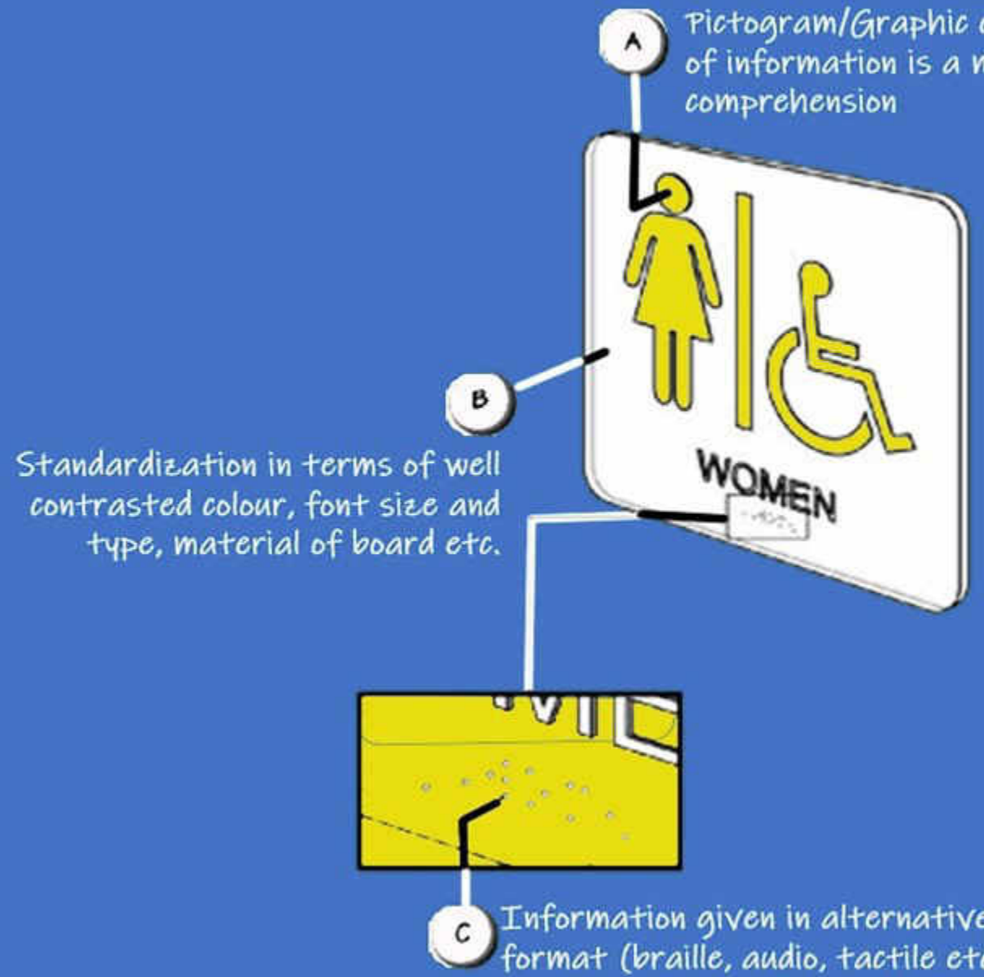
- Double height water fountain dispensers have been provided for ease of use by persons of varying heights.
- Leg space has been provided below the dispensers for wheelchair users.
- Simple and big, easy to use buttons provided for convenience.

10

Chapter 6, Harmonised Guidelines
Clause B 24, Chapter 13, Part 3, NBC Vol.1

ACCESSIBLE SIGNAGE

Graphic reference source: National Building Code Part 3, Chapter 13



Signage

- **Signage to follow standard design, be well contrasted with background and have simple layout while being eye-catching.**
- **Positioning to be planned considering the requirements of the visually impaired. Must also be prominently located and well lit so that it is visible even from a distance.**
- **Alternative formats** – Information should be given not just in text but as pictograms, symbols, infographics and, through alternative media such as braille, audio, digital display, tactile maps and models etc.
- **Lighting, material and finish to enhance visibility** and ease of viewing.

Signage

- Signage design is not standardized and different themes are used all around a premise. Often size not maintained making it unreadable.
- Signage visibility either obstructed or affected due to distance.
- Not well lit and material used is highly reflective causing glare and difficulty in reading.
- Colour contrast is not provided as per standard, hence does not serve the purpose.

STANDARD GRAPHIC SYMBOLS

Clause 6.4.7.5, Harmonised Guidelines
Clause B 24.2.16, Chapter 13, Part 3, NBC Vol.1
American Disability Act (ADA) Guidelines

International symbol of accessibility

Accessible Access/ Ramp/ Entrance

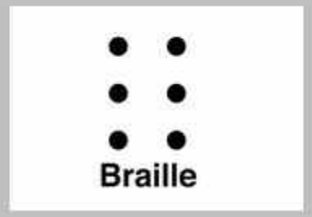
Facilities for Persons with Disabilities

Assistive Communication Devices

Closed Captioning

Facility for Visual Impaired

Assistive listening systems/ Induction Loop Available

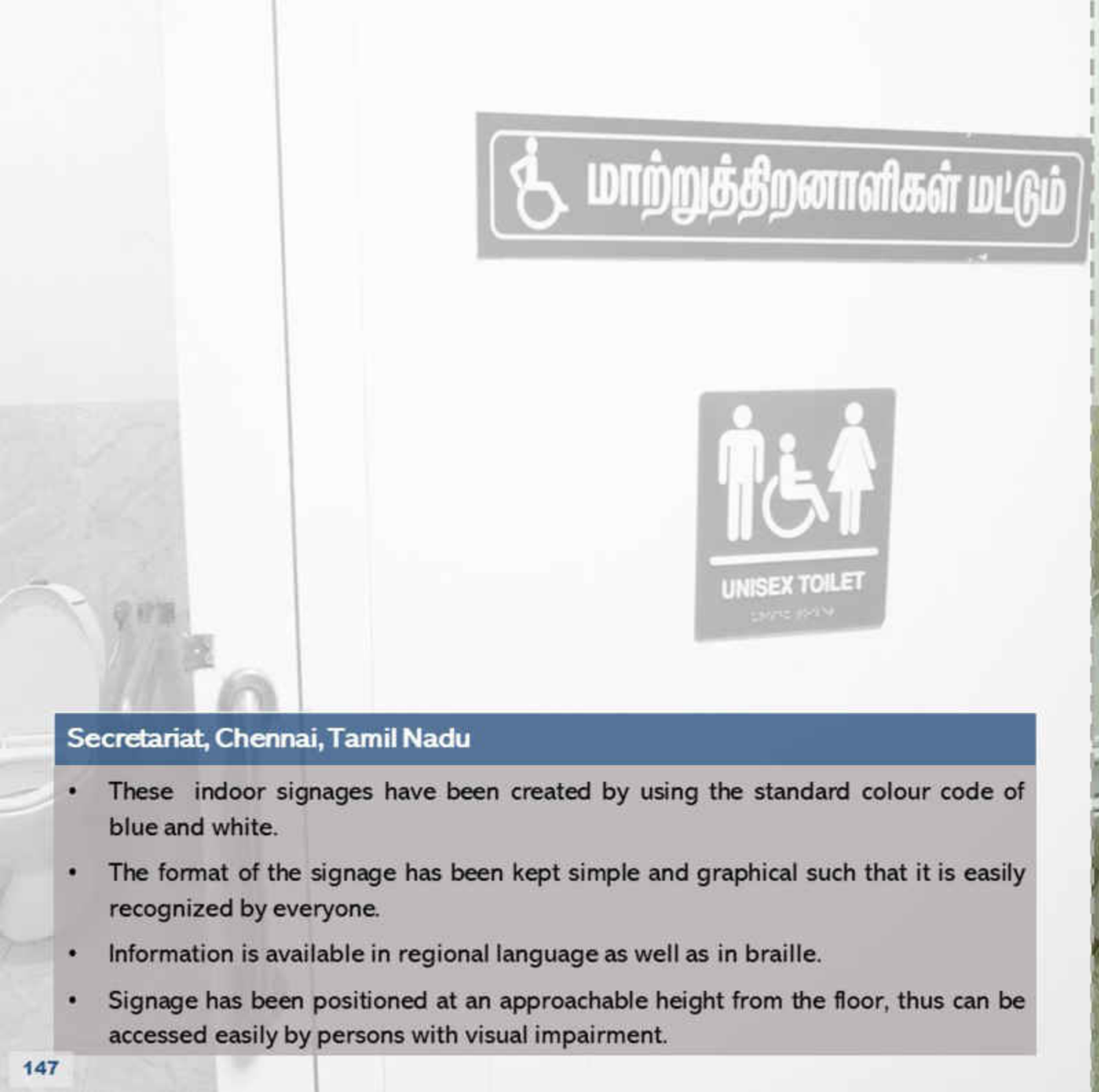


Braille Information Available

Sign Language interpretation

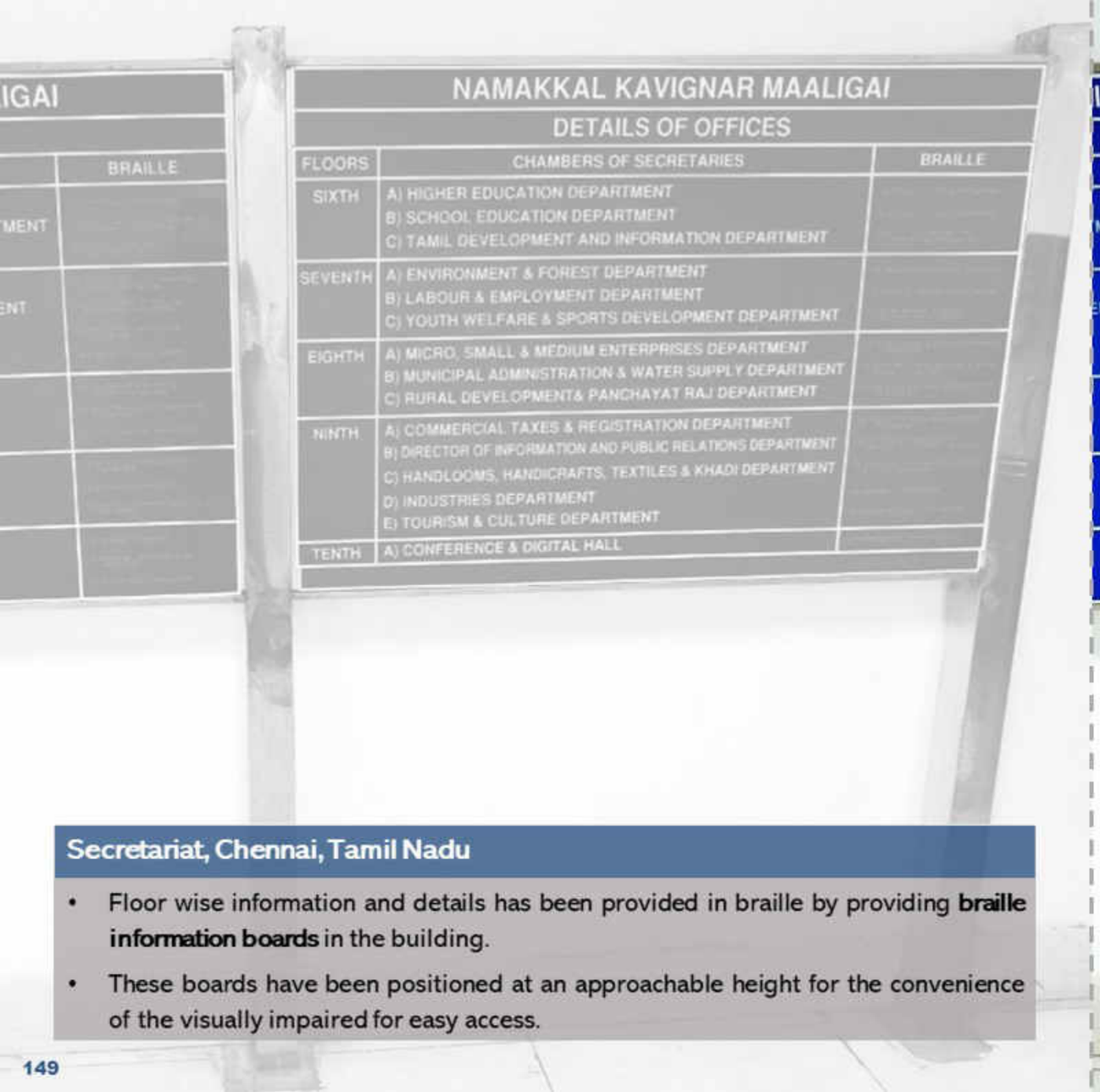
Nirmana Soudha, Bhubaneswar, Odisha

- These outdoor signages have been created by using the standard colour code of blue and white.
- Additional graphical representation is beneficial for persons with intellectual disabilities to comprehend the information. Information is also provided in regional language.
- The posts have been designed and located such that they are visible from all sides and no major obstacle occurs in the line of vision.



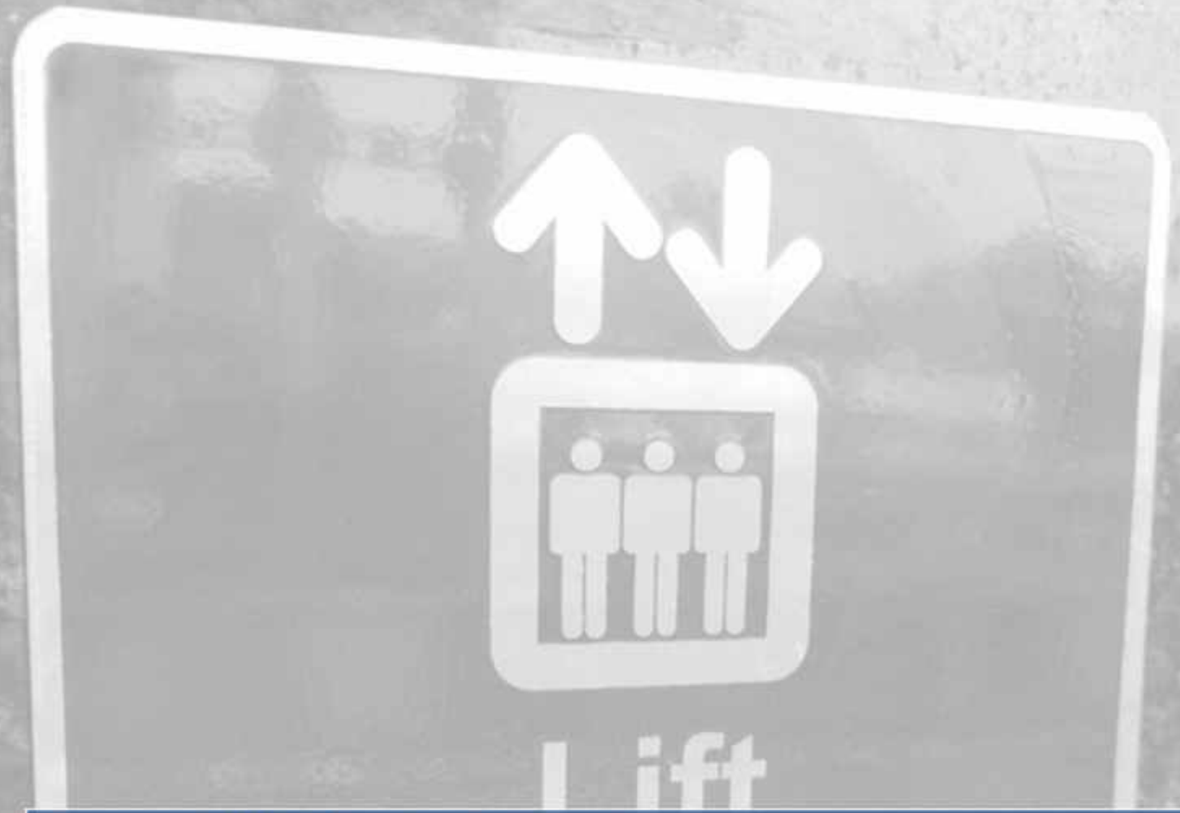
Secretariat, Chennai, Tamil Nadu

- These indoor signages have been created by using the standard colour code of blue and white.
- The format of the signage has been kept simple and graphical such that it is easily recognized by everyone.
- Information is available in regional language as well as in braille.
- Signage has been positioned at an approachable height from the floor, thus can be accessed easily by persons with visual impairment.



Secretariat, Chennai, Tamil Nadu

- Floor wise information and details has been provided in braille by providing **braille information boards** in the building.
- These boards have been positioned at an approachable height for the convenience of the visually impaired for easy access.



Chandigarh Railway Station, Chandigarh

- Informational Signage marking important activities available in the railway stations have been provided all across the premise.
- The signage has been designed using a colour contrasted template.
- The information has been depicted as simple graphics, text as well as in the braille format for universal readability.
- Although stainless steel has been used as the base material for the signboards, the overall design of the boards reduces glare or reflection making them easy to read.

Chennai Metro Station, Tamil Nadu

- Simple graphical representation of information to create prominent signage at open areas. A simple format with directional arrows allows quick interpretation of information which is essential for crowded public areas.

ALARM SYSTEMS

Apart from these 10 basic features of accessibility, **emergency evacuation** is also an important factor of built-up spaces. It requires careful detailing and design, such that accessibility of emergency response accessories such as alarm systems, fire extinguishers, evacuation maps are maintained for prompt and independent response by all, including the Persons with Disabilities.

Of the various emergency response accessories, alarms are the most important features which need to be designed to cater to the requirements of persons with visual and hearing impairments. Sound alarms along with prominent flashing beacons, glow in the dark signage etc. are required to be installed in the premises. Few parameters that require special attention include:

- Toilets and lifts must mandatorily be provided with alarm buttons at an approachable height from the floor.
- In toilets, it is recommended that either string type alarms are used or prominent alarm buttons are placed close to the floor preferably on all 3 walls for easy reach, since persons with disability could have a fall anywhere leaving them in inconvenient positions.
- The emergency calling system must be maintained and manned at all times. Personnel must be trained to identify and respond promptly to any alarms raised within the premise and rush to help evacuate the people.
- Flashing beacons must be bright enough to catch the attention of persons with hearing impairment in case of emergency.

String type alarm system

Source: https://tjelectricaluk.com/our-work/b03-power-lighting-fire-alarm-cheam/

Source: https://www.ecmag.com/section/ systems/ building-renovation

Flashing Beacon as a fire alarm system

SELECT A BUILDING, PREMISE OR AN AREA AND JUDGE IT…
ASK THE FOLLOWING QUESTIONS?

Do you see a Ramp? Is it marked prominently by appropriate signage?	Is the Ramp steep or narrow?	Does the ramp have double height rounded handrails?	Does the staircase have coloured strips to enhance visibility of edges of steps?
Is there continuous tactile path, outside and inside the building? Are the warning tiles properly placed?	If it is a old building or heritage building, which temporary provisions of accessibility can be made?	Did I notice a low height accessible counter?	Is an accessible parking provided near the entrance? Does it have a transfer bay?
Can the elevator accommodate a wheelchair? Can the control panel be used by those wheelchair bound?	Will a new mother with a child or a pregnant lady feel comfortable here?	Is the complex and building well lit?	Is the toilet accessible to wheelchair users?
Does the toilet have sufficient number of grab bars which are sturdy and strong?	Will an unattended disabled person be able to use the toilet independently?	Can the drinking water point be used by wheelchair users? Is it double heighted?	Does the emergency evacuation plan include needs of PwDs?
Do the signage/ information system help persons with visual impairment to move around safely?	Does the seating provided consider reserving a place for a wheelchair user or a person with disability?	Are the open or green areas accessible?	How overwhelming will navigating here be for an individual with intellectual impairment?

NOTES

Accessible India Campaign

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Accessible India Campaign

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