



A Guide for Inclusive, Accessible, Safe and Resilient Urban Development



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Glossary

- 1. Disability Inclusion approach¹:** Disability Inclusion approach is aimed at providing three critical aspects (Equality of Opportunity, increase social role valorisation, and increase basic functions and freedoms) to strengthen social positioning of persons with disabilities and, thereby, making them empowered and enabled for independent living. The approach of Disability Inclusion (Pineda) can be adopted to include all marginalized groups in general.
- 2. Disability Inclusive urban development:** City development planned with the approach of Disability Inclusion, thereby, making cities for all.
- 3. New Urban Agenda:** The New Urban Agenda, envisioned by the United Nations, highlights linkages between sustainable urbanization and job creation, livelihood opportunities and improved quality of life, and it emphasizes on incorporation of all these sectors in every urban development or renewal policy and strategy. It promotes a safe, healthy, inclusive, and secure environment in cities and human settlements, enabling all to live, work, and participate in urban life without fear of violence and intimidation, taking into consideration that women and girls, children and youth, and persons in vulnerable situations are often particularly affected.
- 4. Accessibility:** Accessibility can be defined as the “ability to access” the functionality, and possible benefit of a system or entity. It is used to describe the degree to which a product, such as a device, service or the environment, is accessible by as many diverse people as possible. Accessibility is often measured through minimum standards based on regulations and guidelines.
- 5. Inclusive Design:** Inclusive Design is the design of an environment so that it can be accessed and used by as many people as possible, regardless of age, gender, and disability. Community engagement is one of the core components of Inclusive Design.
- 6. Universal Design:** It is a set of principles to ensure usability by the broadest possible spectrum of users without technical modifications. It started in architecture and has evolved and been adapted into other sectors, such as education and public spaces, regardless of age, gender, and disability.

¹Pineda, V.S. (2020). *Building the Inclusive City*. Palgrave Macmillan. DOI: <https://doi.org/10.1007/978-3-030-32988-4>

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This document is only a ready reckoner for urban practitioners containing checklists highlighting the basic minimum criteria for accessibility and inclusion. For proper compliance, one must refer to the relevant statutory documents of Government of India including - National Building Code 2016, developed by the BIS, and the Harmonized Guidelines and Space Standards for Universal Accessibility in India 2021. The sectoral guidelines developed by the concerned Ministries should be duly referred while formulating the DPRs. It is ideal that the project team consists of an Accessibility Specialist right from the beginning of the project to ensure technical accuracy in drawings and implementation.

For a digital and interactive e-learning module of this document, please visit: niua.org and in.one.un.org

Introduction

The Guide on 'Inclusive, Accessible, Safe, and Resilient Urban Development' has been designed as an easy reckoner for urban practitioners to embed the principles of Universal Design and Inclusion in planning, implementing, and monitoring and evaluation of infrastructure projects. The document follows the principle of 'Leave No One Behind' and seeks to include marginalized and vulnerable population groups, such as persons with disabilities (PwD), women and children, pregnant women and new mothers, people with chronic conditions, ageing population, and LGBTQI+, among others in urban design and practice.

This easy-to-understand Guide contains simplified checklists that provide essential knowledge and basic technical inputs to rights implementers across all States / UTs in India on Gender Sensitive Disability Inclusion. The checklists focus on an inclusive approach to urban planning, design, and implementation of all public infrastructure projects to ensure compliance with accessibility guidelines and standards set forth by the Ministry of Housing and Urban Affairs (MoHUA), Government of India. The guidelines and standards aim to ensure accessible and inclusive urban spaces for all citizens in India.

This Guide works as an integrated toolkit for development of an inclusive urban environment covering various aspects of an infrastructure project. The Guide has been divided into four sections: 1) Project Cycle, 2) Sector-Specific Guidelines, 3) Monitoring and Evaluation (Audit Toolkit), and 4) Inclusive Resilience Strategies. Each section gives a basic understanding and the minimum required standards and technicalities to be adopted by the practitioners for the respective section.

Section: 1

Accessibility Across Project Cycle

This section has been designed in the form of a to-do list for project teams. It lists out the basic minimum that the project teams should do or follow in each stage of the project cycle in order to ensure an inclusive and accessible urban development.



Accessibility parameters for built environment

Project Cycle Checklist

Project Stage	Accessibility
Feasibility Study	<ul style="list-style-type: none">Feasibility study should be anchored to the needs of persons with disabilities, other marginalised communities, and user's representative of the demographics in the area. This shall include collection of disaggregated data on various vulnerable demographics, including persons with disabilities, elderly, women and children.
Concept Development	<ul style="list-style-type: none">Needs Assessment and its translation into requirement through:<ul style="list-style-type: none">Periodic collection of disaggregated data on the quality and numbers of the marginalised groups living in the concentrated areaPublic projects to conduct consultations with all types of beneficiaries to understand their needs and expectationsEnsure '4 A' concept- "Availability, Accessibility, Affordability, Acceptability" for all in project brief
Design Stage	<ul style="list-style-type: none">Design of the built environment elements - reviewed and ratified by an Accessibility Auditor (empanelled under the Accessible India Campaign)Design team consists of an Accessibility ExpertStakeholder Consultation to be conducted with citizenry (including persons with disabilities, elderly, women and children, developers, government) to review the proposals
Tendering Stage	<ul style="list-style-type: none">Tendering to include construction of accessibility elements (as detailed in subsequent table) with detailed specifications, dimensions, and material qualitiesOperational and maintenance cost of both hardware and software as well as goods and services should be considered in the bidding process itselfWebsites, mobile applications, and digital infrastructure to be compliant to the W3CGSA Standards



Project Stage	Accessibility
Procurement	<ul style="list-style-type: none"> Procurement to be in accordance to the accessibility and quality compliance Procurement of material/elements needs to detail out accessibility specifications as part of the tendering process
Implementation Stage	<ul style="list-style-type: none"> Compliance check for the incorporation of proper standards for accessibility and safety into the procurement and the contract document
	<ul style="list-style-type: none"> Enhancement of capacities of officials on tenets of accessibility, safety, and inclusivity (BASIC Training & Capacity Building activities) on spatial and digital aspects Training & capacity building of contractors on universal design and proper construction of accessible elements by an empanelled accessibility trainer Quality certification check by empanelled accessibility auditor for accessibility features during and after the implementation stage
Maintenance & Operations	<ul style="list-style-type: none"> Maintenance of accessible infrastructure to be ensured by periodic (maximum five-year interval) accessibility audits including Quality Check Periodic city-wide audit to keep a check on usability of inter-connected components of the urban system. Reports to be made available in the public domain. Accessible (physical and digital) mechanisms for complaint registration and resolution should be designed. The complaint redressal shall comprise of a grievance redressal officer, accessibility experts as well as stakeholders from marginalized sections - including persons with disabilities, women, LGBTQI, the gender non-conforming.

Eligibility for Accessibility Auditor

Any firm/ organisation/ individual

1. Minimum two years' experience and expertise in conducting accessibility audits.
2. Experience and expertise in conducting accessibility audits of at least 5 government buildings/ public infrastructure.
3. Only such individuals/ organisations having a good track record working in the disability sector. In the case of an organisation, a minimum of three years standing as a registered organisation in the disability sector.

Or

Any firm/organisation/individual recognised/ certified by Accessible India Campaign under Ministry of Social Justice and Empowerment as accessibility auditor.

General Best Practices

- At the initial stages, there must be a focused drive to collate disability- and sex-disaggregated data of the number of trainings and awareness-raising workshops on the intersecting issues.
- There should be a predefined standard operating procedure for a situation when the contractor/government organisation/department fails to comply with accessibility standards.
- Considerations for the physical and psychological safety of the users should be ensured at all stages.
- Transparency is to be ensured in all proposals by ensuring details are available in the public domain.
- Understandable information in easily accessible formats and local vernacular should be provided to all stakeholders.



Section 2

Checklists for Sectoral Integration

This section contains simplified sectoral checklists for common public projects- public buildings, educational buildings, public spaces/ parks development, street development, and buildings for large gatherings- to promote an inclusive approach to planning, design, and implementation of all public projects and ensure an inclusive and universally accessible urban environment for all citizens. Each sector under this section highlights the important features/ elements that need to be added/ included into the design. It also provides the corresponding Universal Design parameters to ensure accessible, inclusive, and safe urban development.

1. Checklist for Residential Development

Design Elements	Universal design considerations
General	<ul style="list-style-type: none">▪ Visitability and accessibility to all built and unbuilt areas in the complex▪ Flexibility in the unit plan to support the transformation to accessible units▪ Large Housing complexes should contain accessibility facilities and inclusive features like an on-call doctor, facility wheelchair, inclusive play spaces, etc.▪ Provisions like an access card reader or other security sensors to be mounted at 1200 mm height▪ Reserved number of units to be designed as wheelchair accessible housing.¹
Exterior Spaces	<ul style="list-style-type: none">▪ Provisions of levelled and even walkway (1500 mm wide) for easy access in driveway/ drop-off/ parking area to individual's house▪ Access routes to be hard, non-slippery, and evenly surfaced▪ Access route to be free from unnecessary steps and obstructions. Sudden level changes to be avoided▪ Ramps (min slope of 1:12) with handrails/ platform lifts/ elevators to be provided at any level change, as applicable▪ Provisions for adequate and uniform illumination of all exterior spaces▪ No level difference to be present in access to common spaces, such as Landscaped outdoor areas, garbage chute and meter rooms▪ Tactile Guiding Path (TGSIs) to be provided In all common circulation areas (indoor/outdoor)

¹Atleast 3 percent of the total or as per the URDPFI/ Harmonised Guidelines



Design Elements	Universal design considerations
Lifts/ Elevators	<ul style="list-style-type: none"> An adequate number of lifts to be provided for all multistoried buildings Level and the non-slip surface of lift lobby Each floor number to be clearly indicated in lift lobby to ease wayfinding Lifts should be min. of 1500 x 1500 mm Provision of at least one stretcher lift should be provided
Corridors	<ul style="list-style-type: none"> Minimum corridor width for all circulation areas of 1500 mm. Manoeuvring space for a wheelchair to be provided wherever required Tactile Guiding Path to be provided In all common circulation areas Minimum clear width of all access doors to be 900mm.
Staircase	<ul style="list-style-type: none"> Clear width of at least 1200 mm Steps to be uniform with the minimum width 300 mm of tread and 150 mm height of the riser Curved or configured steps to be avoided Warning tactile tiles at start and end of each flight Non-slip nosing strips to be installed with permanent contrasting colour - minimum 50 mm wide Maximum 25 mm splay backwards to riser Handrails to be on both sides with grab rails at two levels (760 & 900 mm) Braille encryption to be marked at beginning and end of the handrail
Wayfinding	<ul style="list-style-type: none"> Provision of adequate directional signage for independent navigation through the complex Provision of Wayfinding Map in multilingual, braille, tactile and audiovisual formats at the main entrance Information on the list of apartment owner and wayfinding schedule can be provisioned in tactile formats Emergency exits to be identified and marked and refuge areas to be demarcated. Clear floor directions to be provided with directional signage
Accessible Unit Design	
Design Elements	Universal design considerations
Entrance	<ul style="list-style-type: none"> Entrances to be covered and well-lit Doorbell switches height to be 1200 mm from finished floor level Technological solutions to provision for keyless door to be incorporated Free platform/ space of 1500 mm x 1500 mm in front of each entrance Provisions for flushed door mats Clear width of the door should be 900 mm
Living Room	<ul style="list-style-type: none"> 1500 mm turning in space to be provided near all entry points to living rooms Living-dining combination to be provided Clear floor space for wheelchair to be at least 900 x 1200 mm in front of all fixtures



Design Elements	Universal design considerations
Washroom	<ul style="list-style-type: none"> ▪ Accessible washroom² should be directly accessible from living room ▪ No level difference/ thresholds to be present within the washroom ▪ Entry to be minimum 900 mm wide (Clear width) ▪ Provisions of accessible features, such as grab rail, shower seat, along with level type faucets ▪ Provision of wall hung basin with knee clearance space ▪ Provision of emergency alarm cord with operable height range ▪ Level type door lock to be at two heights (between 700-900 mm) ▪ Slip resistant flooring ▪ Double swing doors
Kitchen	<ul style="list-style-type: none"> ▪ Manoeuvring space of 1500 mm to be between the counter and opposite walls ▪ Anti-slippery floor surface to allow for easy wheelchair manoeuvrability ▪ Countertops height to be between 750-800 mm with clear knee space (900 mm wide and 480 mm deep) ▪ Provision of round/ chamfered edges for countertops/ slabs ▪ Installation of special hydraulic hardware system (such as wall pull down systems/ one touch wall cabinet) in kitchen cabinet design ▪ Lever types faucets to be installed for sinks
Bedroom	<ul style="list-style-type: none"> ▪ 1500 mm turning space for wheelchair to be at least near all doors ▪ Bedroom closet to have a clear floor space of at least 900-1200 mm ▪ Clothes barto be at height of 1200 from the floor ▪ Wall hook installed to be at a height of 1100 mm - 1300 mm ▪ Shelves installed at 300 mm - 1150 mm height from floor surface
Others	<ul style="list-style-type: none"> ▪ Provision of knurled surface door handles ▪ Door to balcony with to be at least clear width of 900mm ▪ Bright colored motif at eye-level for glass door ▪ Contrasting colour band for any level difference ▪ Top handrails to be installed for all glass railings ▪ Controls and operating mechanisms to be placed between 900 - 1200 mm and located at a minimum of 600 mm from any corner ▪ Provision of automatic light controls/ motion sensor lights wherever possible

- Special Inclusive consideration to be made for slum upgradation projects. Some of the key features include-
 - Design of community female toilets may include doors that do not open on roads or opposite/ in front of male toilets.
 - Seclusion or enclosure for specified female bathing spaces.
 - Provision of accessible community water facility especially considering wheelchair users or users with mobility issues.
 - The main streets / arterial roads running across the slum to be made accessible for wheelchair users.
 - Adequate street lighting in slum interior and arterial roads to prevent gender-based violence and stalking.
 - Provisioning of storm water drainage in slums whose level is higher than the adjacent nallah or larger drain.
 - Covering for stormwater drains to be provided as per accessibility standards.

²Designed as per Harmonised Guidelines or NBC



2. Checklist for Development of Public/ Recreational Spaces

Design Elements	Universal Design considerations
General	<ul style="list-style-type: none"> Integration with Public Transportation system Adequate ramps with gentle slopes in all pathways Provision of adequate and uniform illumination Provision of shaded seating space at appropriate places Provision of SOS features, such as medical emergency systems, facility wheelchair, and defibrillators, etc.
Entrance to Public Spaces	<ul style="list-style-type: none"> Provision of well-defined and covered (for weather protection) entrances for public spaces along with designated signage Obstruction free entrance (Preferably step free entrance) Provision of contrasting colour schemes and nosing for steps or plinth edges Provision of Tactile Guiding Path (TGSIs) as per National accessibility guidelines to all important locations and amenities Provision of pedestrian gate with a clear width of 900mm (at least) Provision of ramps with both side handrails of gradient min 1:12 (for plinth level, wherever it is a stepped entrance)
Sidewalks	<ul style="list-style-type: none"> Use of non-slippery materials for floor surface Should be continuous along the length of the road with kerb cuts at all ends/ crossings and other appropriate places Height to be not more than 150 mm 1500 - 1800 mm clear width (at least) Unobstructed Tactile Guiding Path (TGSIs) for persons with visual impairment. Warning tiles around obstructions including existing tree pit/ manhole/ poles. No overhead obstructions or projections in the clear width Clear headroom of 2100 mm (minimum) should be maintained
Accessible Parking	<ul style="list-style-type: none"> Adequate number of accessible car parking spaces³ Bay size 3600 mm (including 1200 mm for wheelchair assistive devices circulation, like rollators, etc.) x 5000 mm Bay located within 30 m of accessible/ main entrances Designated parking space for adapted scooters/ tricycles to be provided Provision of footpath (1200 mm wide) behind car parking for wheelchair movement Provision of kerb ramps (1800 mm wide) in footpath behind the parking at appropriate places Tactile warning tiles with stop tiles near obstacles and kerb ramps in access footpath No landscapes features (like tree branches and other elements) in the walkway to pose an obstruction to persons with vision impairments Non-slippery surface material (no loose material like sand/ gravel, cobblers etc.)

³As per the Harmonised Guidelines



Design Elements	Universal Design considerations
Wayfinding and Accessible Information	<ul style="list-style-type: none"> ▪ Signages for accessible parking (signage for accessible car and adapted two-wheeler parking) <ul style="list-style-type: none"> ▪ at visible locations ▪ a 1000 m x 1000 mm signboard, provided at 2100 - 2500 mm clear height ▪ Provisions of beepers at junctions/ crossings/ entrances are ideal ▪ Comprehensive wayfinding system to be installed which is legible and easy to locate ▪ Comprehensive system of signages/ maps to be in tactile as well as visual format ▪ Audio Visual (AV) signages at appropriate places ▪ Wayfinding and directions at appropriate places with appropriate: <ul style="list-style-type: none"> ▪ Orientation ▪ Route Decision ▪ Route Monitoring ▪ Destination Recognition ▪ Tactile, multilingual (especially local vernacular), and braille signage ▪ Building directional signage and bulletin board signs to be at 1800 mm from finished floor level ▪ Colours of the signage should be distinguishable and fonts to be legible ▪ Wall mounted signs to be placed between 900 - 1800 mm ▪ Emergency exits should be clearly marked and emergency evacuation maps to be displayed at legible locations ▪ Provision for Tactile Map of the building ▪ Both orientational and destination recognition signages for evacuation and refuge areas, elevators, lifts, restrooms and designated spaces / rooms should be there ▪ Audio-tactile floor maps and floor- wise directories to be provided on every floor ▪ Provision of evacuation and navigational maps in multilingual and tactile formats to be provided at all major entrances and all floors.
Materials	<ul style="list-style-type: none"> ▪ Non-slippery and uniform surface material (no loose material like sand/ gravel, etc.)to be used ▪ Selection to be done by considering the ease of maintenance (across lifecycles) and longevity
Kerb Ramps	<ul style="list-style-type: none"> ▪ Slope with a gradient to be maximum 1:10 ▪ Flared edges to be maximum 1:10 ▪ Strip of warning tactile guiding blocks (TGSIs) to be installed at the beginning and end of ramp
Walkways/ Pathways	<ul style="list-style-type: none"> ▪ Walkways/ Pathways to be free from any obstructions ▪ Floor surface to be smooth, hard, and levelled ▪ Provision of 1500 - 1800 mm width (for two-way movement) ▪ Provision of 5% or =< 1:20 gradient ▪ Provision of appropriate resting place at 30 m intervals for walks more than 60 m ▪ Landscape elements (natural and built) to be integrated for shade in walkways ▪ Manhole covers to be avoided in the accessible path. In unavoidable situations, tactile warning tiles are provided around the manhole cover.. ▪ Provision of adequate and uniform illumination with high colour contrast between level surfaces and avoiding glare ▪ Design of Tactile Guiding system to be at the intersection as per Harmonised Guidelines ▪ High contrast colour to denote any change in level ▪ Only gentle slopes should be maintained or provided with handrails on sides ▪ Provision of litter bins, lighting poles etc away from the Tactile Guiding Path (TGSIs)



Design Elements	Universal Design considerations
Street Furniture	<ul style="list-style-type: none"> Provisions of adequate shaded seating/ resting spaces Provisions of seats with height of 450 - 500mm and a backrest and handrest at 700 mm height Provision of appropriate/ sheltered resting place at 30 m intervals for walks more than 60 m Seating areas to be well illuminated and with clear hard paved surface in contrasting colour Provision of litter bins, lighting poles, etc. away from the Tactile Guiding Path (TGSIs)
Vending Machines	<ul style="list-style-type: none"> Vending machines to be accessible from a distance of 500 mm Vending display to be at a height of 900-1200 mm Provision of audio signals in vending machines and acoustically sound environments Tactile Warning tiles to be at a distance at 300 mm Accessible Vending Machines with adequate knee space should be preferred
Information Display Board	<ul style="list-style-type: none"> Height to vary from 900-1800 mm Audio-visual, tactile, and multi sensory formats of information dissemination should be encouraged Warning signage for slopes, obstructions and water bodies to be provided at visible locations Tactile Warning tiles to be at a distance at 300 mm
Bollards	<ul style="list-style-type: none"> General spacing of bollards to be 750mm wide and one space 900 mm wide (for wheelchair access) Height 1000 mm Provision of Tactile Guiding Path (TGSIs) in the centre of the clear space between bollards Provision of warning tiles at 300 mm on both sides of the bollards Provision of distinctly visible bollards through a contrasting colour material against the floor surface with light reflective indicators/ surface Use of vandalism proof and high durability materials
Safety Rail	<ul style="list-style-type: none"> Provision of safety rails at two heights (760 & 900 mm high) at required places including landscape features, like water elements, etc. Provision of warning tiles at 300mm from the railing throughout the length
Obstructions/ Protruding Objects	<ul style="list-style-type: none"> Provision of contrasting colour of protruding objects/ obstructions No obstructions in the clear width of the walkway Clear headroom of 2100 mm (minimum) in the clear width
Green Areas	<ul style="list-style-type: none"> Provision of smooth, hard, and levelled surface walkway in the green areas for comfortable movement of wheelchair/ strollers/ crutches, etc. Provision of Tactile Guiding Path (TGSIs) in the centre of the said walkway Regular cleaning of leaf litter to be carried out from the walkway Provision of inclusive components, like play equipment for children with disabilities, senior citizen corner, etc. No landscapes (like tree branches and other elements) in the walkway to pose obstruction to persons with vision impairments Provisions of plantation scheme with minimum littering
Gratings for Storm Water Drains	<ul style="list-style-type: none"> Longer dimension to be perpendicular to the direction of travel Provision of either perforated or grooves in the grating with space less than 12 mm for safe mobility or crossover by people using sticks/ canes/ wheelchairs/ strollers Edges of gratings to be well concealed in the floor masonry/ civil work



Design Elements	Universal Design considerations
Public Toilets	<ul style="list-style-type: none"> Ensure visibility of public toilets from a distance with signage as per standards Provision of access ramps (1:12 or 1:14 slope gradient) with both side handrails (with non-slip surface) Provision of unit with multiple choices of toilets (including Indian squat and European WC type fixtures) and provision of grab rail on adjacent wall to WC between 450 - 500 mm Minimum size of cubicle to be 2.2 x 2 m with sufficient manoeuvring space inside the cubicle and minimum 900 mm clear door width Provision of grab rails at both sides of the cubicle (with 680 mm clear width) and height between 650 - 700 mm Provision of unisex/ gender neutral toilet (with diaper changing area and adequate accessories) / atleast one unisex/ gender neutral accessible washroom on all floors with child friendly sanitation fixtures. Provision of at least one step-free urinal and at least one urinal at low height with grab rails in male toilets Provision of washbasin at accessible height between 750 - 800 mm and Grab rails on either side of the washbasin Provision of L- shaped grab rails on the adjacent wall to the water closet and folding bar on transfer/open side of the water closet Floor material to be skidproof Provision of an easy door closing mechanisms (simple lever type attachment) with double swing doors Provision of panic alarm buttons and an alarm signal outside with flash sign light for emergencies Provision of inclusive signs for Public Toilet (signs for Female, Male, Transgender, Family, and Baby feeding areas) Flushing arrangements, dispensers, and toilet paper to be mounted between 300 mm x 800 mm Provision of space for diaper changing, baby feeding, etc. Provision of proper drainage facilities
Drinking Water	<ul style="list-style-type: none"> Provision of drinking facility basin at a height of 800 - 900 mm and 480 mm wide Provision of tap above 100 mm from the basin Provision of a tactile path leading up to basin Provision of lever type taps
Ticket Counter	<ul style="list-style-type: none"> Provision of counters with height to be 750 mm and rounded counter edges Provision of counter to extend 480 mm on the outside with clear knee space below it
Pedestrian Crossings	<ul style="list-style-type: none"> Provision of kerb ramps or raised islands at crossings Tactile warning tiles of at least two rows to be marked at the beginning and end of traffic island Provision of pelican signals for pedestrians especially those with blindness (recommended) Provision of pedestrian symbols along with disability symbol painted before the zebra crossing lines



3. Checklist for Street Design Projects

Design Elements	Universal Design considerations
General	<ul style="list-style-type: none"> ▪ Integration with Public Transportation system ▪ Provision of adequate ramps with gentle slopes ▪ Provision of adequate and uniform illumination ▪ Provision of shaded seating space at appropriate places ▪ Provision of SOS features like medical emergency systems, facility wheelchair, and defibrillators, etc.
Sidewalks	<ul style="list-style-type: none"> ▪ Use of non-slippery materials for floor surface ▪ Should be continuous along the length of the road with kerb cuts at all ends/ crossings and other appropriate places ▪ Height to be not more than 150 mm ▪ Sidewalks to have 1500 - 1800 mm clear width (at least) ▪ Unobstructed Tactile Guiding Path (TGSIs) for persons with visual impairment. Warning tiles around obstructions including existing tree pit/ manhole/ poles. ▪ No overhead obstructions or projections in the clear width ▪ Clear headroom of 2100 mm (minimum) should be maintained
Wayfinding and Accessible Information	<ul style="list-style-type: none"> ▪ Signages for accessible parking (signage for accessible car and adapted two-wheeler parking) <ul style="list-style-type: none"> ▪ at visible locations ▪ a 1000 m x 1000 mm signboard, provided at 2100 - 2500 mm clear height ▪ Provisions of beepers at junctions/ crossings/ entrances are ideal ▪ Comprehensive wayfinding system to be installed which is legible and easy to locate ▪ Provision of comprehensive system of signages/ maps in tactile as well as visual format, Audio Visual (AV) signages at appropriate places ▪ Information Display Board height to vary from 900 - 1800 mm ▪ Warning signage for slopes, obstructions, and water bodies to be provided at visible locations ▪ Wayfinding and directions to be provided at appropriate places with appropriate: <ul style="list-style-type: none"> ▪ Orientation ▪ Route Decision ▪ Route Monitoring ▪ Destination Recognition ▪ Tactile, multilingual (especially local vernacular), and braille signage ▪ Building directional signage and bulletin board signs to be at 1800 mm from finished floor level ▪ Colours of the signage should be distinguishable and fonts to be legible ▪ Wall mounted signs to be placed between 900 - 1800 mm ▪ Emergency exits should be clearly marked and emergency evacuation maps to be displayed at legible locations ▪ Provision for Tactile Map of the building ▪ Both orientational and destination recognition signages for evacuation and refuge areas, elevators, lifts, restrooms and designated spaces/ rooms should be there ▪ Audio-tactile floor maps and floor- wise directories to be provided on every floor ▪ Provision of evacuation and navigational maps in multilingual and tactile formats to be provided at all major entrances and all floors.



Design Elements	Universal Design considerations
Materials	<ul style="list-style-type: none"> Usage of non-slippery and uniform surface material (no loose material like sand/ gravel, etc.) Selection considering ease of maintenance (across lifecycles) and longevity
Kerb Ramps	<ul style="list-style-type: none"> Slope with a gradient to be maximum 1:10 Flared edges to be maximum 1:10 Provision of trip of warning tactile guiding blocks (TGSIs) at the beginning and end of ramp
Walkways/ Pathways	<ul style="list-style-type: none"> Walkways/ Pathways to be free from any obstructions <ul style="list-style-type: none"> Floor surface to be smooth, hard, and levelled Provision of 1500 - 1800 mm width (for two-way movement) Provision of 5% or =< 1:20 gradient Provision of appropriate resting place at 30 m intervals for walks more than 60 m Landscape elements (natural and built) to be integrated for shade in walkways Manhole covers to be avoided in the accessible path. In unavoidable situations, tactile warning tiles are provided around the manhole cover. Provision of adequate and uniform illumination with high colour contrast between level surfaces and avoiding glare Design of Tactile Guiding system at an intersection as per Harmonised Guidelines High contrast colour to denote any change in level Only gentle slopes should be maintained or provided with handrails on sides Provision of litter bins, lighting poles etc away from the Tactile Guiding Path (TGSIs)
Street Furniture	<ul style="list-style-type: none"> Provisions of adequate shaded seating/ resting spaces Provisions of seats with a height of 450 - 500mm and a backrest and handrest at 700 mm height Provision of appropriate/ sheltered resting place at 30 m intervals for walks more than 60 m Seating areas to be well illuminated and with a clear hard paved surface in contrasting colour Provision of litter bins, lighting poles, etc. away from the Tactile Guiding Path (TGSIs)



Design Elements	Universal Design considerations
Bollards	<ul style="list-style-type: none"> General spacing of bollards to be 750mm wide and one space 900 mm wide (for wheelchair access) Height to be 1000 mm Provision of Tactile Guiding Path (TGSIs) in the centre of the clear space between bollards Provision of warning tiles at 300 mm on both sides of the bollards Provision of distinctly visible bollards through a contrasting colour material against the floor surface with light reflective indicators/ surface Usage of vandalism proof and high durability materials
Safety Rail	<ul style="list-style-type: none"> Provision of safety rails at two heights (760 & 900 mm high) at required places including landscape features, like water elements, etc. Provision of warning tiles at 300mm from the railing throughout the length
Obstructions/ Protruding Objects	<ul style="list-style-type: none"> Provision of contrasting colour of protruding objects/ obstructions No obstructions in the clear width of the walkway Clear headroom of 2100 mm (minimum) in the clear width
Green Areas	<ul style="list-style-type: none"> Provision of smooth, hard, and levelled surface walkway in the green areas for comfortable movement of wheelchair/ strollers/ crutches, etc. Provision of Tactile Guiding Path (TGSIs) in the centre of the said walkway Regular cleaning of leaf litter from the walkway Provision of inclusive components, like play equipment for children with disabilities, senior citizen corner, etc. No landscapes (like tree branches and other elements) in the walkway to pose an obstruction to persons with vision impairments Provisions of plantation scheme with minimum littering



Design Elements	Universal Design considerations
Gratings for Storm Water Drains	<ul style="list-style-type: none"> Longer dimension perpendicular to the direction of travel Provision of either perforated or grooves in the grating with space less than 12 mm for safe mobility or crossover by people using sticks/ canes/ wheelchairs/ strollers Edges of gratings to be well concealed in the floor masonry/ civil work
Pedestrian Crossings	<ul style="list-style-type: none"> Provision of kerb ramps or raised islands at crossings Tactile warning tiles of at least two rows to be marked at the beginning and end of traffic island Provision of pelican signals for pedestrians especially those with blindness (recommended) Provision of pedestrian symbols along with disability symbol painted before the zebra crossing lines

4. Checklist for Office Buildings

Design Elements	Universal Design considerations
Access Route	<ul style="list-style-type: none"> Accessible car parking bays towards the entrance/ exit Provision of features such as gentle gradients and resting areas Enable easy navigation, integrating wayfinding within the landscape and building forms to aid independent movement Provision of way-marking features that are prominent and legible from the point of arrival Provisions for accessible street and pedestrian infrastructure within surroundings Safe and accessible traffic crossing and intersection Integration with the public transportation system
Parking	<ul style="list-style-type: none"> Provision of adequate number of accessible car parking spaces⁴ Bay Size to be 3600 mm (including 1200 mm for wheelchair assistive devices circulation, like rollators, etc.) x 5000 mm Designated parking space for adapted scooters/ tricycles of size 3000 x 2400 mm Bay located within 30 m of accessible/ main entrances Provision of footpath (1200 mm wide) behind car parking for wheelchair movement connected to the building entrance Provision of kerb ramps (1800 mm wide) in footpath behind the parking at appropriate places Provision of tactile warning tiles with stop tiles near obstacles and kerb ramps in access footpath No landscapes (like tree branches and other elements) in the walkway to pose obstruction to persons with vision impairments Non-Slippery Surface Material (no loose material like sand/ gravel, etc.) The international symbol of accessibility (wheelchair sign) at approaches and entrances <ul style="list-style-type: none"> Vertical sign at a visible height range between 1500 - 2100 mm Square signage with dimensions at least 1000 mm but not exceeding 1500 mm in length

⁴At least 3 percent of the total or as per the URDPFI/ Harmonised Guidelines



Design Elements	Universal Design considerations
Entrance gate	<ul style="list-style-type: none"> ▪ Provision of well-defined and covered (for weather protection) entrances of office premises along with designated signage ▪ Tactile, braille and multilingual signage should be provided ▪ Obstruction free entrance (preferably step-free entrance) to the premises. ▪ Provision of contrasting colour schemes and nosing for steps, if any ▪ Provision of ramps with gradient 1:12 and both side handrails, (wherever is a stepped entrance) ▪ Provision of Tactile Guiding Path (TGSIs) in as per National accessibility guidelines to all buildings/important locations and amenities ▪ Provision of pedestrian gate with clear width 900 mm (at least), accessible to wheelchair user with a companion ▪ Non-slippery material to be used
Building Entrance	<ul style="list-style-type: none"> ▪ Provision of entrance door with clear width of minimum 1000 mm and easily moving door swings ▪ Lever handle should be provided for doors at Height of 800 - 1000 mm ▪ Installation of ramp at the entrance of the building at clear location ▪ Slope of the ramp to be no less than 1:12 with Landing of at least 1500 x 1500 mm at 9 m interval and continuous handrails on both side at a height of 760 and 900 mm ▪ Non-slippery material to be used ▪ Provision of covering/ shading over entrance ▪ Provision of Tactile Guiding Path (TGSIs) as per National accessibility guidelines ▪ Appropriate signage to be provided ▪ Provision of contrasting colour schemes and nosing for steps, if any
Reception/ Information Centre	<ul style="list-style-type: none"> ▪ At least a part of the counter height should be at 750 - 800 mm with adequate knee space for wheelchair users ▪ Appropriate illumination of the counter ▪ Flexible layout of lobby and waiting areas ▪ Provisions like access card reader or other security sensors to be mounted at 1200 mm height ▪ Provision of induction loop systems, tactile navigation maps at reception counter
Circulation Corridors	<ul style="list-style-type: none"> ▪ Minimum 1500 mm width of the corridors ▪ Grab rails along the corridors ▪ Provision of Tactile Guiding Path (TGSIs) as per National accessibility guidelines ▪ Provision of Directional and locational signage as required
Lifts/ Elevators	<ul style="list-style-type: none"> ▪ Size of the lift to be minimum 1500 mm x 1500 mm ▪ Control panel to be placed between 800 - 1000 mm from the floor of the lift ▪ Mirror at the back of the lift ▪ Adequate Manoeuvring space in the lift lobby to be provided ▪ Provision for grab rail on both sides ▪ Provision of audio signals, multilingual braille control panel



Design Elements	Universal Design considerations
Staircase	<ul style="list-style-type: none"> Clear width to be at least 1200 mm Uniform steps of minimum width 300 mm of tread and 150 mm height of the riser No curved or configured steps Installation of warning tactile tiles at start and end of each flight Provision of non-slip nosing strips with permanent contrasting colour - minimum 50 mm wide Maximum 25 mm splay backward for riser to be provided Provision of handrails on both sides with grab rails at two levels Provision of Braille encryption at beginning and end of the hand rail Directional signage to be provided in each landing space
Doors	<ul style="list-style-type: none"> Provision of knurled surface door handles Provision of doors with at least clear width of 900 mm Bright colored motif to be at eye-level for glass door Contrasting colour band for any level difference Top handrails for all glass railings Controls and operating mechanisms to be placed between 900 - 1200 mm and located at a minimum of 600 mm from any corner Lever handle should be provided for doors at Height of 800 - 1000 mm Kick plates of 300 mm high should be provided Door mats/thresholds and to avoided Provision of ramps for single step, if any at entrances of all rooms Signage for room name, numbers etc should be provided at 1500mm ht. in multilingual and braille formats
Meeting Rooms	<ul style="list-style-type: none"> Flexible furniture layout Anti-slippery floor surface to allow for easy wheelchair manoeuvrability Audio Visual (AV) display provisions Induction loop systems to be provided Microphones to be preferably provided on individual desks
Workspaces	<ul style="list-style-type: none"> Manoeuvring space of 1500 mm between the aisles Anti-slippery floor surface to allow for easy wheelchair manoeuvrability Desk height between 750 - 800 mm with clear knee space (900 mm wide and 480 mm deep) Round/ chamfered edges for desks Adjustable swivel chairs to be provided Use of contrasting colour for sockets and switched should be encouraged Provision of Tactile Guiding Path (TGSIs) as per National accessibility guidelines in the aisle space



Design Elements	Universal Design considerations
Toilets	<ul style="list-style-type: none"> ▪ At least one unisex/ gender neutral accessible washroom on all floors with clear wayfinding signage ▪ Minimum size of cubicle to be 2.2 x 2 m ▪ Sufficient wheelchair manoeuvring space inside the cubicle ▪ Provision of L- shaped grab rails on adjacent wall to water closet and folding bar on transfer/open side of the water closet ▪ Grab rails on either side of the wash basin ▪ Height of grab rail to be between 650 - 700mm ▪ Accessible basin to be between 750 - 800 mm ▪ Flushing arrangements, dispensers, and toilet paper to be mounted between 300 mm x 800 mm ▪ Provision of skidproof floor material ▪ Provision of proper drainage ▪ Installation of double swing doors
Other Amenities	<ul style="list-style-type: none"> ▪ Cash and service counter to be below 800 mm ▪ Clear circulation path of 900 mm with Provision of Tactile Guiding Path (TGSIs) as per National accessibility guidelines in the aisle space ▪ Provision of accessible drinking water fountain/ taps⁵ ▪ Provision of accessible design of vending machines and kiosks
Signages and Wayfinding	<ul style="list-style-type: none"> ▪ Provision of wayfinding and directions at appropriate places with appropriate: <ul style="list-style-type: none"> ▪ Orientation ▪ Route Decision ▪ Route Monitoring ▪ Destination Recognition ▪ Tactile, multilingual (especially local vernacular), and braille signage ▪ Building directional signage and bulletin board signs to be at 1800 mm from finished floor level ▪ Colours of the signage should be distinguishable and fonts to be legible ▪ Wall mounted signs to be placed between 900 - 1800 mm ▪ Emergency exits should be clearly marked and emergency evacuation maps to be displayed at legible locations ▪ Provision for Tactile Map of the building ▪ Both orientational and destination recognition signages for evacuation and refuge areas, elevators, lifts, restrooms, corridor spaces and designated spaces / rooms should be there ▪ Audio-tactile floor maps and floor- wise directories to be provided on every floor ▪ Provision of evacuation and navigational maps in multilingual and tactile formats to be provided at all major entrances and all floors.

⁵As per the Harmonised Guidelines and Standards



5. Checklist for Development of Educational Buildings

Design Elements	Universal Design considerations
Access Route	<ul style="list-style-type: none"> Provision of accessible car parking bays towards the entrance/ exit Provision of a pedestrian friendly environment and provide features, such as gentle gradients and resting areas Enable easy navigation, integrating wayfinding within the landscape and building forms to aid independent movement Provision of interesting and interactive way-marking features that are prominent and legible from the point of arrival Provisions for accessible street and pedestrian infrastructure within the school locality Ensure safe and accessible traffic crossing and intersection Tactile Guiding Path to be integrated with the pedestrian footpath
Parking Bays	<ul style="list-style-type: none"> Size of the designated space to be 3600 x 5000 mm Demarcation of accessible parking space to be made Installation of kerb ramp Provision of wheelchair charging stations Accessible parking to be within 30m of the main/ accessible entrance
Boarding Point for School Bus Service	<ul style="list-style-type: none"> Provision of amp for boarding of the bus Provision of rab rail on both sides Minimum width of boarding platform to be 900 mm Provision of bus box, signage, dustbin and map
Entrance	<ul style="list-style-type: none"> Entrance door with clear width of minimum 1000 mm accessible to wheelchair user with easily moving door swings Provision of contrasting colour schemes and nosing for steps Lever handle should be provided for doors at Height of 800 - 1000 mm Ramp to be installed at the entrance of the building at clear location Slope of the ramp to be no less than 1:12 with Landing of at least 1500 x 1500 mm at 9 m interval and continuous handrails on both side at a height of 760 and 900 mm Non-slippery material to be used Covering/ shading over entrance to be provided Provision of Tactile Guiding Path (TGSIs) as per National accessibility guidelines Appropriate signage to be provided Provision of contrasting colour schemes and nosing for steps, if any
Reception/ Information Centers	<ul style="list-style-type: none"> At least a part of the counter height should be at 750 - 800 mm with adequate knee space for wheelchair users Appropriate illumination of the counter to be ensured Layout of lobby and waiting areas to be made flexible Provisions like access card reader or other security sensors to be mounted at 1200 mm height Provision of induction loop systems, tactile navigation maps at reception counter



Design Elements	Universal Design considerations
Corridor Spaces	<ul style="list-style-type: none"> ▪ Width of the corridors to be a minimum of 1500 mm ▪ Provision of grab rails along the corridors ▪ Provision of Tactile Guiding Path (TGSIs) as per National accessibility guidelines ▪ Provision of Directional and locational signage as required
Toilets	<ul style="list-style-type: none"> ▪ Provision of atleast one unisex/gender neutral accessible washroom on all floors with child friendly sanitation fixtures ▪ Minimum size of cubicle to be 2.2 x 2 m ▪ Sufficient wheelchair manoeuvring space to be provided inside the cubicle ▪ Provision of L- shaped grab rails on adjacent wall to water closet and folding bar on transfer/open side of the water closet ▪ Provision of grab rails on either side of the wash basin ▪ Height of grab rail to be between 650 - 700 mm ▪ Accessible basin to be between 750 - 800 mm ▪ Flushing arrangements, dispensers, and toilet paper to be mounted between 300 mm x 800 mm ▪ Floor to be of skidproof material ▪ Provision of proper drainage ▪ Installation of double swing doors
Classrooms	<ul style="list-style-type: none"> ▪ Acoustically sound design ▪ Rooms to be well illuminated ▪ Provision of lare free and low sill windows ▪ Sockets and switches for IT-based education to be accessible ▪ Provision of flexible furniture layout ▪ Provision of detachable seats ▪ Accessible black board/ white board mounted close to the floor ▪ Wide doors to be of minimum 1000 mm and clear width to be 900 mm ▪ Provision of induction loop for hearing impaired ▪ Round/ chamfered edges for desks ▪ Provision of Tactile Guiding Path (TGSIs) as per National accessibility guidelines in the aisle space
Computer Labs	<ul style="list-style-type: none"> ▪ Provision of accessible entry ▪ Minimum aisle width to be 900 mm ▪ Visual contrast among different elements to be enhanced ▪ Provision of appropriate illumination ▪ Accessibility of evacuation path to be ensured ▪ Adjustable swivel chairs to be provided ▪ Use of contrasting colour for sockets and switched should be encouraged ▪ Provision of Tactile Guiding Path (TGSIs) as per National accessibility guidelines in the aisle space ▪ Induction loop to be provided for hearing impaired



Design Elements	Universal Design considerations
Library	<ul style="list-style-type: none"> ▪ Aisle width to be of minimum 900 mm ▪ Height of the shelves to be restricted to 1200 mm ▪ Enhanced reading room with provision of audio reading of “Audio Books” or “e-Books” in audio/ visual formats ▪ Provision of RFID tagging systems in books, digital cataloguing ▪ Provision of flexible furniture layout of reading spaces ▪ Provision of Ergonomically designed furniture
Canteen/ Cafeteria	<ul style="list-style-type: none"> ▪ Provision of accessible serving counter at height of 760-800 mm ▪ Cash and service counter to be below 800 mm ▪ Clear circulation path to be of 900 mm ▪ Provision of Tactile Guiding Path (TGSIs) as per National accessibility guidelines in the aisle space ▪ Provision of accessible drinking water fountain/ taps with warning tactile tiles at 300mm distance ▪ Provision of accessible vending machines with warning tactile tiles at 300mm distance ▪ Provision of tactile, multilingual (especially local vernacular), and braille signage for services
Lifts/ Elevators	<ul style="list-style-type: none"> ▪ Size of the lift to be minimum 1500 mm x 1500 mm ▪ Control panel to be placed between 800 - 1000 mm from the floor of the lift ▪ Mirror at the back of the lift ▪ Adequate Manoeuvring space in the lift lobby to be provided ▪ Provision for grab rail on both sides ▪ Provision of audio signals, multilingual braille control panel



Design Elements	Universal Design considerations
Signage and Wayfinding	<ul style="list-style-type: none"> ▪ Wayfinding and directions to be provided at appropriate places with appropriate: <ul style="list-style-type: none"> • Orientation • Route Decision • Route Monitoring • Destination Recognition ▪ Provision of tactile, multilingual (especially local vernacular), and braille signage ▪ Building directional signage and bulletin board signs to be at 1800 mm from finished floor level ▪ Colours of the signage should be distinguishable and fonts to be legible ▪ Wall mounted signs to be placed between 900 - 1800 mm ▪ Emergency exits should be clearly marked and emergency evacuation maps to be displayed at legible locations ▪ Provision for Tactile Map of the building ▪ Both orientational and destination recognition signages for evacuation and refuge areas, elevators, lifts, restrooms and designated spaces / rooms should be there ▪ Audio-tactile floor maps and floor- wise directories to be provided on every floor ▪ Provision of evacuation and navigational maps in multilingual and tactile formats to be provided at all major entrances and all floors.
Playground and Open Spaces	<ul style="list-style-type: none"> ▪ Provision of accessible and usable playground space (Accessible by wheelchair and crutch users) ▪ Facilitation of easy access and movement ▪ Space to be designed based on the varying need of age and ability ▪ Equipment to stimulate the sensory systems (auditory, tactile, visual, etc.) ▪ Social Space to interact and socialise ▪ Provision of inclusive play zones and multi-sensory parks



6. Checklist for Development of Large Gathering Spaces (Convention centers, auditorium, etc.)

Design Components	Universal Design considerations
Streets and Walkways	<ul style="list-style-type: none"> ▪ Provision of accessible car parking bays ▪ Provision of accessible entrance/ exit ▪ Provision of pedestrian infrastructure ▪ Accessible design of the streets with features such as gentle gradients and resting areas within the connecting streets easy navigation, integrating wayfinding, and signage plan with the infrastructure to be enabled to aid independent movement ▪ Provision of way-marking features that are prominent and legible from the point of arrival ▪ Safe and accessible traffic crossing and intersections to be provided ▪ Tactile Guiding Path to be included wherever applicable
Parking Bays	<ul style="list-style-type: none"> ▪ Provision of adequate number of accessible car parking spaces⁶ ▪ Bay Size to be 3600 mm (including 1200 mm for wheelchair assistive devices circulation, like rollators, etc.) x 5000 mm ▪ Designated parking space for adapted scooters/ tricycles of size 3000 x 2400 mm ▪ Bay to be located within 30 m of accessible/ main entrances ▪ Provision of footpath (1200 mm wide) behind car parking for wheelchair movement connected to the building entrance ▪ Provision of kerb ramps (1800 mm wide) in footpath behind the parking at appropriate places ▪ Provision of tactile warning tiles with stop tiles near obstacles and kerb ramps in access footpath ▪ Landscapes (like tree branches and other elements) in the walkway that might pose obstruction to persons with vision impairments to be avoided ▪ Provision of on-Slippery Surface Material (no loose material like sand/ gravel, etc.) ▪ Provision of international symbol of accessibility (wheelchair sign) at approaches and entrances <ul style="list-style-type: none"> • Vertical sign at a visible height range between 1500 - 2100 mm • Square signage with dimensions at least 1000 mm but not exceeding 1500 mm in length
Cab/ Car Boarding Point	<ul style="list-style-type: none"> ▪ Provision of ramp for boarding of car/cabs with warning tiles on both ends ▪ Grab rail to be provided on both sides ▪ Minimum width of boarding platform to be 900 mm ▪ Provision of signage ▪ Provision of dustbin, service lane ▪ Provision of Tactile Guiding Path (TGSIs) as per National accessibility guidelines

⁶Atleast 3 percent of the total or as per the URDPFI/ Harmonised Guidelines



Design Components	Universal Design considerations
Entrance	<ul style="list-style-type: none"> ▪ Wide entrance to permit a wheelchair user and a companion ▪ Provision of appropriate width of the landing for congregation of large crowds ▪ Provision of accessible entrance doors, preferably with double swings <ul style="list-style-type: none"> ▪ Entrance door with clear width of minimum 1000 mm ▪ Height of door handle between 800 - 1000mm ▪ Provision of Tactile Guiding Path (TGSIs) as per National accessibility guidelines at least through one of the doors ▪ Ramp to be installed at the entrance of the building at clear location <ul style="list-style-type: none"> ▪ Slope of the ramp to be no less than 1:12 ▪ Landing of at least 1500 x 1500 mm at 9 m interval ▪ Continuous handrails on both sides at the ramp at height between 760 - 900 mm ▪ Non-slippery material ▪ Provision of covering over entrance ramp and ramp for floors ▪ Ramps to be provided for single step at entrances ▪ Provision of contrasting colour schemes and nosing for steps. Multiple handrails at regular intervals should be provided for wider steps.
Signage and Wayfinding	<ul style="list-style-type: none"> ▪ Wayfinding and directions at appropriate places with appropriate: <ul style="list-style-type: none"> ▪ Orientation ▪ Route Decision ▪ Route Monitoring ▪ Destination Recognition ▪ Tactile, multilingual (especially local vernacular), and braille signage ▪ Building directional signage and bulletin board signs to be at 1800 mm from finished floor level <ul style="list-style-type: none"> ▪ Colours of the signage should be distinguishable and fonts to be legible ▪ Wall mounted signs to be placed between 900 - 1800 mm ▪ Emergency exits should be clearly marked and emergency evacuation maps to be displayed at legible locations ▪ Provision for Tactile Map of the building ▪ Both orientational and destination recognition signages for evacuation and refuge areas, elevators, lifts, restrooms and designated spaces/rooms should be there ▪ Audio-tactile floor maps and floor- wise directories to be provided on every floor ▪ Provision of evacuation and navigational maps in multilingual and tactile formats to be provided at all major entrances and all floors.
Reception/ Information Centers	<ul style="list-style-type: none"> ▪ At least a part of the counter height should be at 750 - 800 mm with adequate knee space for wheelchair users ▪ Appropriate illumination of the counter to be ensured ▪ Layout of lobby and waiting areas to be made flexible ▪ Provisions like access card reader or other security sensors to be mounted at 1200 mm height ▪ Provision of induction loop systems, tactile navigation maps at reception counter



Design Components	Universal Design considerations
Corridor Spaces	<ul style="list-style-type: none"> Width of the corridors to be a minimum 1500 mm Grab rails along the corridors Provision of Tactile Guiding Path (TGSIs) as per National accessibility guidelines Provision of Directional and locational signage as required
Lifts/Elevators & Staircases	<ul style="list-style-type: none"> Size of the lift to be minimum 1500 mm x 1500 mm Control panel to be placed between 800 - 1000 mm from the floor of the lift Provision of mirror at the back of the lift Adequate Manoeuvring space in the lift lobby to be provided Provision for grab rail on both sides Provision of audio signals, multilingual braille control panel
Toilets	<ul style="list-style-type: none"> Visibility of public toilets from a distance with signage to be ensured as per standards Provision of access ramps (1:12 or 1:14 slope gradient) with both side handrails (with non-slip surface) Provision of unit with multiple choices of toilets (including Indian squat and European WC type fixtures) and provision of grab rail on adjacent wall to WC between 450 - 500 mm Minimum size of cubicle to be 2.2 x 2 m with sufficient manoeuvring space inside the cubicle and minimum 900 mm clear door width Provision of grab rails at both sides of the cubicle (with 680 mm clear width) and height between 650 - 700 mm Provision of unisex/ gender neutral toilet (with diaper changing area and adequate accessories) / atleast one unisex/ gender neutral accessible washroom on all floors with child friendly sanitation fixtures. Provision of at least one step-free urinal and at least one urinal at low height with grab rails in male toilets Provision of washbasin at an accessible height between 750 - 800 mm and Grab rails on either side of the washbasin Provision of L- shaped grab rails on the adjacent wall to the water closet and folding bar on transfer/open side of the water closet Provision of skidproof floor material Flushing arrangements, dispensers, and toilet paper to be mounted between 300 mm x 800 mm Provision of an easy door closing mechanisms (simple lever type attachment) with double swing doors Provision of panic alarm buttons and an alarm signal outside with flash sign light for emergency situations Provision of inclusive signs for Public Toilet (signs for Female, Male, Transgender, Family, and Baby feeding areas) Provision of space for diaper changing, baby feeding, etc. Provision of proper drainage facilities
Food Court	<ul style="list-style-type: none"> Cash and service counter to be below 800 mm Clear circulation path to be of 900 mm Provision of Tactile Guiding Path (TGSIs) as per National accessibility guidelines in the aisle space Accessible drinking water fountain/ taps with warning tactile tiles to be at a distance of 300mm Accessible vending machines with warning tactile tiles to be at a distance of 300mm Provision of tactile, multilingual (especially local vernacular), and braille signage for services
Additional Services	<ul style="list-style-type: none"> Provision of accessible drinking fountain at multiple locations with warning tactile tiles at 300mm distance Provision of accessible vending machines with warning tactile tiles at 300mm distance



Design Components	Universal Design considerations
Auditorium	<ul style="list-style-type: none"> ▪ Accessible Seating <ul style="list-style-type: none"> ▪ Seats to be reserved for wheelchairs near the entrance ▪ Aisle to be of minimum 1200 mm wide for parking and manoeuvring of the wheelchairs ▪ Movement Aisle <ul style="list-style-type: none"> ▪ Corridor space to be of minimum 1200 mm ▪ Provision of contrasting floor colour in the auditorium ▪ Provision of tactile Guiding tiles (TGSIs) for persons with visual impairments ▪ Information Dissemination <ul style="list-style-type: none"> ▪ Provision of accessible Information in visual (signs, notice, digital display, etc.), tactile (embossed lettering, braille), audio (announcements, speakers etc.) formats ▪ Provision of live captioning/ sign language interpretation for persons with hearing impairments ▪ Provision of induction loop system to enhance acoustics of the hall
Auditorium	<ul style="list-style-type: none"> ▪ Stage and Green Rooms <ul style="list-style-type: none"> ▪ Access to stage and backstage by providing ramps/ platform lift ▪ Accessible entrance to the backstage space ▪ Manoeuvring space to be of 1500 mm for wheelchair movement
Exhibition Spaces	<ul style="list-style-type: none"> ▪ All exhibits to be put above 900 mm height and between 1800 mm height ▪ At least 1500 mm to left between each exhibit ▪ Observation space to be of minimum 1200 mm ▪ Provision of tactile displays and information with warning tiles at 300 mm ▪ Provision of Tactile Guiding Path (TGSIs) as per National accessibility guidelines in the circulation space
Recreational/ Open Spaces	<ul style="list-style-type: none"> ▪ Provision of accessible and usable space ▪ Facilitation of easy access and movement ▪ Space to be designed based on the varying need of age and ability ▪ Equipment to stimulate the sensory systems (auditory, tactile, visual, etc.) ▪ Social Space to interact and socialize ▪ Provision of universally designed furniture



Design Components	Universal Design considerations
Safety Guidelines	<ul style="list-style-type: none"> ▪ Incorporation of gender-sensitive infrastructure regardless of the number of women and girls with disabilities accessing such spaces. ▪ Provision of safe, affordable, and accessible transport to promote opportunities for participation in play and recreation. ▪ Design of all public infrastructure, e.g., streets, parks, playgrounds, transport hubs etc. to incorporate all safety provisions, especially for children, senior citizens, pregnant women etc. ▪ Sharp edges, pointed corners, level differences, slippery floors, overhead obstacles, steep slopes, unguarded platforms, open manholes and under stair areas and similar hazardous situations to be avoided in design. ▪ Creation of a citywide network of play places and promotion of play affordances of everyday environments and public spaces at the local and city level. ▪ Separation of pedestrian and vehicular paths to avoid traffic conflicts / hazards to children, senior citizens and other vulnerable populations. ▪ Creation of safe zones, such as cul-de-sacs, closed roads, buffered sidewalks and separate pedestrian and bicycle paths that designate children and the community and not traffic, as primary users of streets. ▪ Provision of access to landscaped green areas, large open spaces and nature for play and recreation that promote better health, and sense of well-being, and lower levels of stress. ▪ Tripping hazards, manholes, etc. should not be placed on pedestrian structures. ▪ Installation and advertisement of CCTV cameras in transit systems and public areas as appropriate. 24x7 video vigilance to be provided in areas identified for gender abuse / eve-teasing etc ▪ Removal of barriers that hinder visibility and create blind spots in public spaces. ▪ Illumination of pedestrian paths to enhance visibility, especially at night. ▪ Contact details for emergency help to be displayed in appropriate locations.



Section 3

City Audit Framework

Introduction

Accessibility Audits are an important aspect of the monitoring and evaluation mechanism to ensure inclusive urban development. This audit framework has been prepared to understand the city-level approaches and efforts across various pillars of urban planning, policy, and practices to transform the city into an accessible, safe, and inclusive city for all. This would assess the existing infrastructure/ services in compliance with the accessibility standards, and incorporation of universal design features/ barrier-free elements within the sector-specific infrastructure and services as well as propagate significance of participation.

Urban Local Bodies (ULBs) have a key role in implementing the commitments to SDGs including Goal 11. The audit framework will also support in coordinating across sectors and scales (aligning local, regional, national, and international efforts). The audit would support the local governments to engage with relevant stakeholders to mainstream, aggregate, or disaggregate data on accessibility, usability, target group participation, or even stakeholder impact assessments that are disability-inclusive. Such insights will be vital in aligning local action to global goals such as the inclusion targets of the SDGs, the principles, and articles of the CRPD, and specific components of the New Urban Agenda.

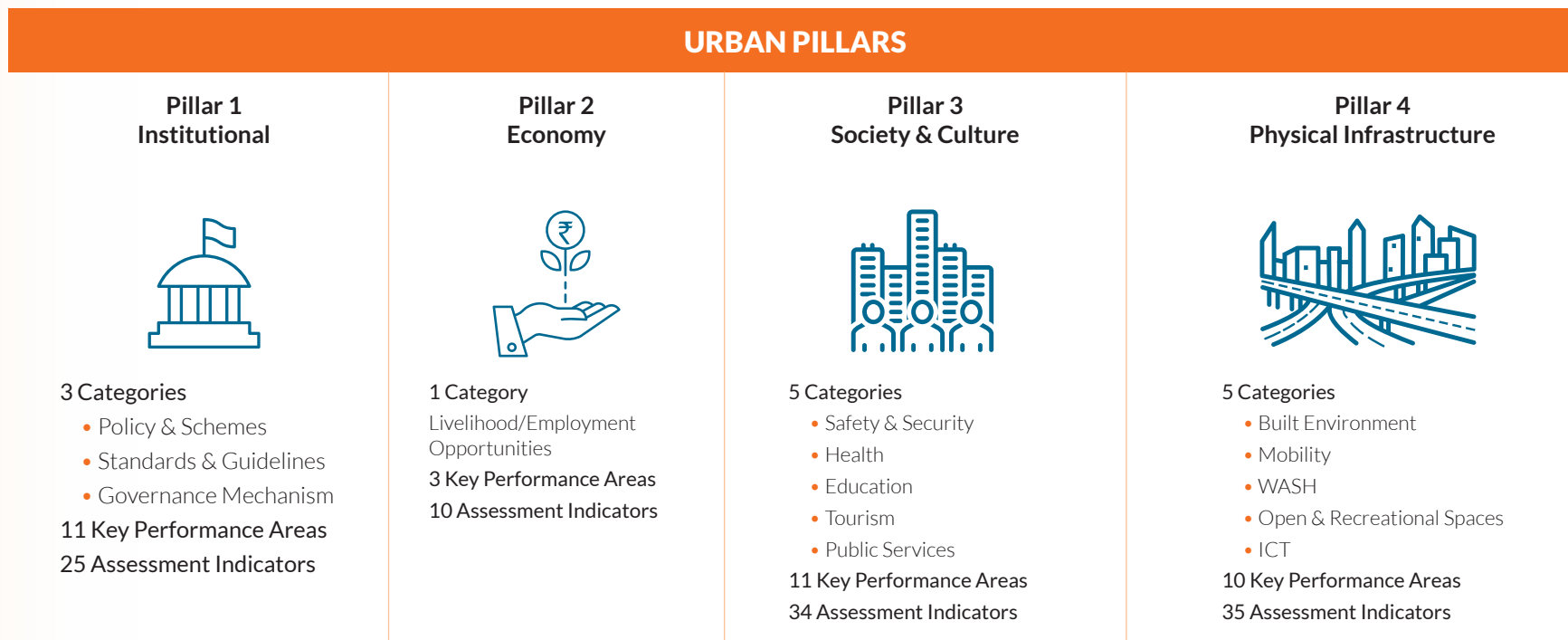
The findings from the audit process would assist in mapping the existing city infrastructure and services from the perspective of Gender Sensitive & Disability Inclusion. The audit also reflects on the social, economic, spatial and digital characteristics of the urban environment with respect to the global/ national benchmarks and attempts to identify the key barriers and challenges associated with Persons with Disabilities living in the city and suggest the remedial action required to rectify the barriers and challenges. The process will support the development of contextualised recommendations to improve the existing infrastructure and services from the perspective of accessibility, inclusivity, and safety.

Structure of the Audit Framework

An important component of the audit study is to measure the compliance of the urban services/ infrastructure with the standards, norms, and guidelines on universal accessibility and inclusion and assess the micro-macro aspects of an urban environment. An audit framework should be conceptualised and designed to assess the diverse urban characteristics of a city - physical, social, economic, administrative, and governance aspects. An extensive research and reviewing of similar frameworks and relevant urban assessment approaches (e.g., Liveability Index and Ease of Living Index developed by MoHUA) adopted at national and global level for promulgating inclusive and sustainable development should be done to develop the framework. The suggested framework, illustrated below, reflects the critical factors that support and improve the quality of life of Persons with Disabilities (including children, women, and elderly persons) in an urban environment.



The broader structure of the audit framework should include the following:



Structure of the City Audit Framework (Source: BASIIC programme, NIUA)



City Audit Framework

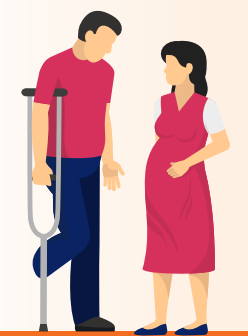
Pillar	Categories	Key Performance Areas	Assessment Indicators
Institutional	Policy & Schemes	<ul style="list-style-type: none"> Schemes/ Programmes for PwDs 	<ul style="list-style-type: none"> Number of inclusive schemes/programmes adopted at city level
		<ul style="list-style-type: none"> Adoption/ implementation of the necessary mandates/measures for barrier-free provisions 	<ul style="list-style-type: none"> Inclusion of barrier-free provisions within the schemes/policies Involvement of DPOs/PwDs in the policy/decision-making process Budget allocation for barrier-free infrastructure/services under urban development/employment, education and relevant sectors.
		<ul style="list-style-type: none"> Reservations for PwDs within the policies/schemes 	<ul style="list-style-type: none"> Adoption of Accessible voting procedures
		<ul style="list-style-type: none"> Issuance of UIDs Cards for PwDs 	<ul style="list-style-type: none"> Reservation for PwDs in Social Protection Initiatives
Institutional	Urban Planning Norms and Guidelines	<ul style="list-style-type: none"> Provision of universal design norms and standards in the city/ state bye-laws 	<ul style="list-style-type: none"> Incorporation of Universal design standards as per Harmonised Guidelines into the city/ state bye-laws and related development control norms for all types of building typologies. Integration of provision for Inclusive infrastructure in the city developmental plans/masterplans/zonal plans
		<ul style="list-style-type: none"> Adoption of Universal design norms and standards for urban infrastructure projects 	<ul style="list-style-type: none"> Participation of PwDs in scoping, planning and design stage of project Adhering to universal design standards/norms Incorporation of accessibility elements within the tendering process Measures for Compliance Assurance
		<ul style="list-style-type: none"> Convergence between urban mission/schemes 	<ul style="list-style-type: none"> Percentage of allocated budget under missions/schemes available for developing disabled-friendly infrastructure



Pillar	Categories	Key Performance Areas	Assessment Indicators
Institutional	Urban Planning Norms and Guidelines	<ul style="list-style-type: none"> Provision of inclusive infrastructure/special provision into the developmental plans 	<ul style="list-style-type: none"> Incorporation of special provisions in Master Plan/ LAP /Special Purpose Plan (CDP, CMP, CSP, DMP, SRP, TMP, HMP) No of retirement homes No. for Vocational training centres for PwDs No of Day-care Centres for the children Special Infrastructure Provisions for PwDs e.g. ; All-ability Parks/Sensory Parks, special need schools, rehabilitation centres, etc. Incorporation of inclusive guideline and standards as specified in the URDPFI Guidelines.
Institutional	Governance & Administrative set up	<ul style="list-style-type: none"> Provision of appointment for Disability Rights Officer in Government bodies 	<ul style="list-style-type: none"> Appointment of State Commissioner for persons with disabilities Appointment of District Disability officer at the Department of Social Welfare and empowerment at city level Involvement of DPOs, PwDs in decision making of urban policies and programmes
		<ul style="list-style-type: none"> Involvement of Technical Expert on Disability Inclusion 	<ul style="list-style-type: none"> Appointment of Nodal Officer in City Level Advisory Forum (CLAF) of Smart city SPV Involvement of Disability Experts for planning, designing of inclusive infrastructure projects appointment of persons trained in sign language
		<ul style="list-style-type: none"> Representation of PwDs Availability of disaggregated data on Disability and affected population 	<ul style="list-style-type: none"> Representation of PwDs and DPOs in the urban decision-making committees/councils and advisory groups. Availability of Database on PwDs demographic structure Listing of registered Local DPOs and NGOs working across various facets of disability
Economy	Livelihood & Employment Opportunities	<ul style="list-style-type: none"> Vocational training 	<ul style="list-style-type: none"> No. of Institutes running vocational/skill courses for PwDs Percentage of PwD population in relevant age group enrolled for vocational training courses Availability of financial assistance to pursue vocational/skill development courses for PwDs.
		<ul style="list-style-type: none"> Skill development 	
		<ul style="list-style-type: none"> Employment Opportunities 	<ul style="list-style-type: none"> Availability of inclusive employment opportunities in formal/informal sectors Implementation of employment rehabilitation programmes/disability employment development for PwDs Provision for accessible working environment in govt/private sector Provision to access employment related services and information Provision for trained staff to understand the diverse needs of PwDs in workplace Provision for reasonable accommodation provided at work place Data (age, group, type of disability) on employment of PwDs Population in primary/secondary/tertiary sector



Pillar	Categories	Key Performance Areas	Assessment Indicators
Society and Culture	Safety and Security	<ul style="list-style-type: none"> Coverage of CCTV cameras 	<ul style="list-style-type: none"> No. of CCTV cameras installed per unit of road length Provision of surveillance & monitoring aspects for major city locations, streets, public places, intersections/junctions
		<ul style="list-style-type: none"> Street Lighting 	<ul style="list-style-type: none"> Available/Coverage of street lights per 1km stretch of streets/roads Provision for conducting user perception survey on safety aspects
		<ul style="list-style-type: none"> Complaint Redressal System 	<ul style="list-style-type: none"> Provision for complaint redressal system in the city
		<ul style="list-style-type: none"> Accidents/cases reported 	<ul style="list-style-type: none"> Available data base on crime related issues in city
	Health	<ul style="list-style-type: none"> Availability of hospitals with disabled-friendly infrastructure 	<ul style="list-style-type: none"> No. of primary health care centres with all universal design features Number of hospitals with interactive communication systems for persons with all types of disabilities Available database on of PwDs using the city-based health infrastructure Availability of health care helplines for persons with disabilities Provision for training/sensitisation of health care staffs on special needs for PwDs Average response time in cases of health emergencies of PwDs



Pillar	Categories	Key Performance Areas	Assessment Indicators
Society and Culture	Education	<ul style="list-style-type: none"> ▪ Skill development and training centres 	<ul style="list-style-type: none"> ▪ Available Special Schools/ Rehabilitation centres/ Vocational training centres in the city ▪ Available school with barrier-free facilities for children with disabilities ▪ Available assistance services (e.g., pedagogies, personal assistance, educated teachers etc.) ▪ Available funding scheme to promote inclusive education system.
		<ul style="list-style-type: none"> ▪ Digitally inclusive and smart school infrastructure 	<ul style="list-style-type: none"> ▪ Available schools with access to digital education ▪ Provisions for disabled-friendly infrastructure - digital learning tools, e-learning and teaching techniques, Available adapted literature, inclusive playgrounds, accessible sports facilities, ergonomically designed classrooms, trained teachers, etc. ▪ Available database on students with disabilities enrolled in schools ▪ Percentage of students with disabilities completing primary and secondary education ▪ Provision of education aid related scheme/programmes for students with disabilities.
	Tourism	<ul style="list-style-type: none"> ▪ Accessible heritage sites/monuments/ heritage walks 	<ul style="list-style-type: none"> ▪ Access to all heritage sites/monuments (indoor and outdoor environment) . ▪ Accessible heritage walks with provision for universal design features within the sites ▪ Provision of universal design features - ramps, staircase, washrooms, information centres, parking, resting area, app based audio/video guidance, trained staffs, etc. ▪ Provision of innovative methods for promoting inclusive tourism ▪ Accessible cultural, artistic and heritage programmes/events (related services, information and facilities, Audio support and large captions for visually impaired, Sign language Interpreter, etc.)
		<ul style="list-style-type: none"> ▪ Provision for inclusive hospitality services 	<ul style="list-style-type: none"> ▪ Accessible accommodation facilities for PwDs
		<ul style="list-style-type: none"> ▪ ICT-enabled, app based audio/video guidance 	<ul style="list-style-type: none"> ▪ Accessible and interactive information and communication system
	Public Services	<ul style="list-style-type: none"> ▪ Accessible public services (Banking Postal, telephone, police, Electoral Booths) 	<ul style="list-style-type: none"> ▪ Provision of Accessible ATMs ▪ Provision of Banks integrated with disabled friendly infrastructure ▪ Accessible Post office, police stations, public service buildings ▪ Provision for accessible online public services portals, websites, apps, etc. ▪ Availability of user database on PwDs for accessing the online public services ▪ Accessible online grievance redressal mechanism



Pillar	Categories	Key Performance Areas	Assessment Indicators
Physical Infrastructure	Built Environment	<ul style="list-style-type: none"> Incorporation of Universal design features within outdoor and indoor built environment (all type of building typologies) 	<ul style="list-style-type: none"> Outdoor Environment <ul style="list-style-type: none"> Parking; Access Routes/Walkways ; Levels, Edges and Grooves; Steps and Grab Rails; External Signage/Wayfinding; Pick up and Drop off points; Entrance and Exit; Tactile Guiding Surface Indicators , Kerb Ramps, External Ramps, Entrance Spaces, Drinking Water, Public Sanitation Facilities, Street Furniture; Outdoor Seating, Subways and Foot over Bridges, Ticket Counters, Materials and Surface Finishes. Indoor Environment <ul style="list-style-type: none"> Entrance Doors; Reception Counters; Waiting Areas; Corridors/Walkways; Staircases, Internal Ramps/Elevators; Internal Doors & Fixtures; Drinking Water, Sanitary Facilities; Guest Rooms; Eating Spaces; Changing Rooms; Storage Shelves, ATMs, utilities, Evacuation & Emergency Controls. Availability of accessible and affordable dwelling units for PwDs
	Mobility or Public Transportation	<ul style="list-style-type: none"> Accessible Footpaths/Pedestrian walkways 	<ul style="list-style-type: none"> Presence and coverage of accessible footpath along major city streets/roads (Appropriate Height, Width, length, surface, level, slope of footpath ramps, obstruction-free pathways for wheelchair users, signage, tactile pavers, barrier-free furniture, utilities, street lights, appropriate lighting and shading, sensory elements, etc.)
		<ul style="list-style-type: none"> Accessible mode of Public Transport /Non-Motorised Transport 	<ul style="list-style-type: none"> Pedestrian crossings are sufficient in number and safe for people with different types of disability, with provision for non-slip markings, visual & audio cues, adequate crossing times, etc. Accessible means of public transportation (bus, train, tram, metro, taxi, city centre vehicles, special bicycles, adaptive cars, etc.) Provision for accessible and affordable bus transport system - bus stop , foot over bridge, subway, etc. Reserved accessible parking for PwDs in public parking areas Provision of accessible boarding/ deboarding platforms for semi-public transport Universally accessible metro stations, terminals and multi-modal hubs or interchanges. Accessible Information on available public transport: nearest bus stops, taxi stands, other means of public transport, etc Accessible communication and wayfinding systems Availability of ridership database on PwDs (age, ability, gender), etc.

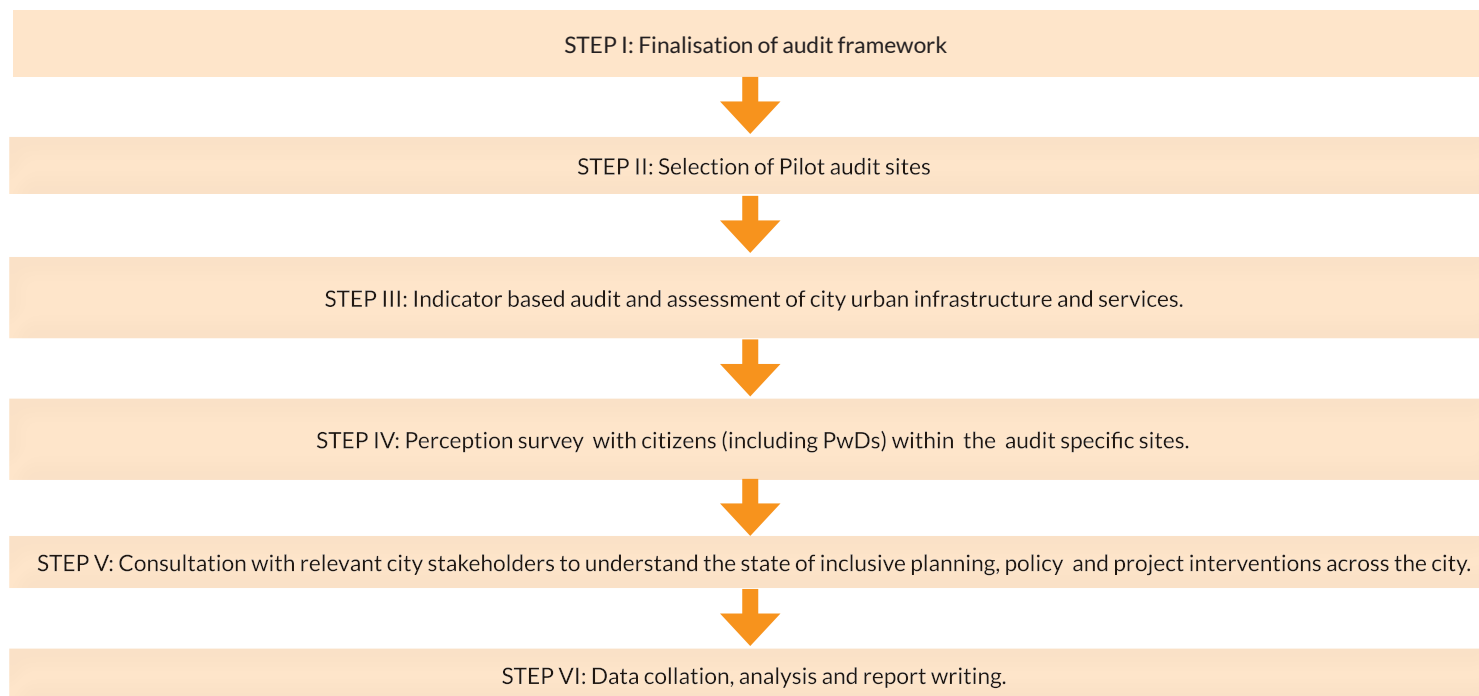


Pillar	Categories	Key Performance Areas	Assessment Indicators
Physical Infrastructure	WASH	<ul style="list-style-type: none"> Accessible sanitation facilities 	<ul style="list-style-type: none"> Availability of accessible sanitation facilities in public spaces, public buildings, institutions, etc. Provision for universal designed features in Public/community toilets Accessible Features could include -considering the optimum door width, seat height, grab rail, flooring, location of wash basin, clear knee spaces, visual alarm, etc. Availability of PwDs user database for such facilities.
		<ul style="list-style-type: none"> Access to drinking water facilities 	<ul style="list-style-type: none"> Universally designed drinking water coolers Provision for location and wayfinding for Public Water ATMs/sanitation facilities Access to drinking water facilities in formal/informal residential units
	Open & Recreational Spaces	<ul style="list-style-type: none"> Universally designed open/green spaces 	<ul style="list-style-type: none"> No. of accessible Parks in a neighbourhood/ward/zone Available Green areas allocation (ward/zone wise) per person in the city Provision for universal design features (entrance/exit, walkability factor, circulation, safety elements, sensory elements, different vehicular and pedestrian movement, seating arrangement, inclusive play areas, accessible toilets/utilities, etc.) Availability of PwDs user database for such facilities.
		<ul style="list-style-type: none"> Accessible Recreational facilities 	<ul style="list-style-type: none"> Accessible Museums/Art Exhibitions/Cinema Halls/Libraries/malls/public plaza Accessible art and cultural events/workshops/ trade fairs
		<ul style="list-style-type: none"> Accessible Sports facilities 	<ul style="list-style-type: none"> Provision for barrier free sports facilities/ stadium/playgrounds Adequate space to be allocated for persons using mobility devices, e.g. wheelchairs, crutches and walkers, as well as those walking with the assistance of other persons. Accessible parking bays, drop and pick up points At least one changing room and shower room to be provided for designated sports Spectators seating areas for wheelchair users Provision for funding sports facilities for PwDs
	ICT	<ul style="list-style-type: none"> Availability of ICT-enabled services to access basic city services (websites/ online portals/apps) 	<ul style="list-style-type: none"> No. of accessible city based websites/online portals/apps Provision of accessible ICT features - fonts, voice over facilities, colour contrast, etc. Percentage of services integrated through Command Centre Availability of user database of PwDs on accessing city based websites/online portals/apps

Methodology Adopted

The methodology for the city audit study would involve secondary research, on-ground data collection and analysis, active engagement with the citizenry (including persons with disabilities, elderly, women and children), and consultations with all stakeholders. The suggestive steps for conducting the audit study are as follows:





Site Selection

The sites for the audit can be selected considering the unique urban characteristics of the city and in consultation with the city stakeholders. The broad indicators considered to select the sites are as follows:

- Building typology
- Pattern of development
- Existing activities- places/buildings of everyday use
- Land use
- Urban characteristics
- Density
- Tourism and heritage importance
- Ongoing projects related to urban development within the sites
- Proposed interventions for disabled-friendly structure
- User footfall Conclusion



Conclusion

The city-wide audit and assessment study will help map the city's efforts towards disability inclusion by assessing the compliance and adoption of disabled-friendly policies/guidelines/development norms, inclusive design and planning principles to promote Disability-Inclusive and Accessible Urban Development (DIAUD) in the city. The key findings from the assessment exercise would assist the city stakeholders in understanding the accessibility gaps at the institutional, policy, program, design, implementation level and monitoring the initiatives for mainstreaming the future development goals to create an accessible, safe and inclusive urban environment for all. Further, the findings will also help in the identification of the scope of improvement/opportunities for implementation of inclusive policies or provisions at a city level and identify best practices for replication at the pilot-scale or pan-city level. Additionally, the findings will also assist in the framing of short and long-term recommendations for city stakeholders to meet the future goal and visions for DIAUD.

The outcomes of the assessment study would benefit the cities in improving the access to urban services and infrastructure for all. It will have the broad outcomes as elaborated below:

- Build a city database that reflects the diverse demographic dividends, real-time status of the inclusive policy, programme and project level interventions that is developed in a participatory way and includes persons with disabilities in the research process.
- Enhance technical knowledge and capacities of the city stakeholders to mainstream the adoption and implementation of the inclusive approach for urban planning and development.
- Improve urban governance and an institutional mechanism by ensuring accountability, predictability, transparency, and a participatory approach.
- Enhance city competitiveness, urban productivity, economic growth and functioning.
- Strengthen the city's monitoring mechanism to measure the outcomes of schemes/missions based on the findings of the audit framework.
- Improve overall quality and users' standard of living in an urban environment



Section 4

Inclusive Resilience Strategies

Fostering resilience requires a holistic and integrated approach to the SDGs, catalysing spatial, social, and economic inclusion that addresses challenges of changing demographics and realising human rights and protections to all. The Sendai Framework for Disaster Risk Reduction 2015-2030 establishes the importance of universal design, disability-inclusive disaster preparedness, and the availability of accessible technology and communications for persons with disabilities, elderly, women and children, and other marginalised and vulnerable population groups. The National Disaster Management Authority (NDMA) also addresses the inclusion of persons with disabilities in the 2019 National Disaster Management Plan (NDMP) and provides directions to departments, states and concerned stakeholders, to support the implementation mechanisms of disability-inclusive DRR through the National Disaster Management Guidelines on Disability Inclusive Disaster Risk Reduction (DiDRR) released in September 2019. Further, in the light of the COVID-19 pandemic, the Department of Empowerment of Persons with Disabilities (DEPwD) under Ministry of Social Justice and Empowerment has also issued “Comprehensive Disability Inclusive Guidelines” to states and union territories for protection and safety of persons with disabilities.

Policy makers should undertake a holistic and intersectional approach for the inclusion of persons with disabilities in all humanitarian efforts and consult with inclusive design experts to ensure appropriateness of proposed interventions. Efforts must be localised, and a twin track approach should be adopted to ensure that all policies and initiatives include specific needs of persons with disabilities for access to resources and relief materials. The degree of universal access and inclusiveness of provisions determines the robustness of the climate resilience. Resilience for all can be achieved by injecting a “rights-based” and “ground-up” strategy in all humanitarian efforts including accessibility, participation, and capacity building. Inclusive and universally accessible evacuation plans, emergency shelters, and other emergency response infrastructures support in the promotion of inclusive resilience strategies.

Universal Design and Accessibility			
Legislation and Policies	Disaster and Emergency Management	Mitigation / Risk Reduction, Preparedness and Planning <ul style="list-style-type: none"> ▪ Emergency Communication and Information Sharing ▪ Evacuation ▪ Accessible Shelters ▪ Accessible ICTs 	Recovery and Reconstruction
Participatory Approaches & Capacity Building Initiatives			



Further, the Inclusive Cities Centre at NIUA recommends the following seven-fold approach for an inclusive response to climate-induced disasters

Plan based on the evidence	Needs of persons with disabilities and other marginalised communities should be included in the vulnerability and capacity assessments of the city. Participation and engagement in the climate change policy formulation will ensure provisions emphasising their diverse needs and concerns.
Bridge the policy implementation gap	To comply with the provisions of the RPwD Act 2016, NDMA has already prepared the National Disaster Management Guidelines for Disability Induced Disaster Risk Reduction as well as has incorporated Disability Inclusion in the National Disaster Management Plan. Although there is still a need to identify the gaps in the implementation of these policies and address them at a local level. Social protection policies should be encouraged which specifically focuses on persons with disabilities and other vulnerable and marginalised groups.
Enhance participation and representation	Representation of persons with disabilities needs to be increased at institutions and among decision-makers regularly to develop and strengthen systems of response.
Recognise the significance of intersectionality	The intersectionality existing within the marginalised groups increases their vulnerability to climate change. City should collect disaggregated data based on age, gender, disability, etc. while estimating the impact of climate change in India. This data will ensure inclusive provisions in the climate change mitigation and adaptation plans.
Learn lessons from local and global good practices	The innovative practice to activate the local players and strengthen the capacity and sensitivity of the community. Innovative systems like sound-based alarms for persons with visual/ mobility impairment or intellectual disability; lamps or visual warnings, for persons with hearing impairment, etc. could be identified through reviewing local and global best practices.
Universal Access	Universal design and accessibility of infrastructure is the most critical aspect in building resilience within vulnerable groups of persons with disabilities. Universally accessible urban environments and information systems would empower persons with disabilities and have been propagated in all the guidelines, and approaches. The same needs to be integrated into the emergency warning systems, accessible rehabilitation and emergency structures, accessibility in reconstruction structures etc.
Augment the capacities of stakeholders	The capacities of institutions at various levels, national, state, and local must be increased by divulging necessary information, strengthening finance mechanisms, and financial risk management, as well as providing human resource training for emergency deployment. Societal, community, and individual capacity needs to be assessed to gauge the efforts required for developing coping mechanisms and widely disseminating the information. Governments must engage with private stakeholders to augment the capacity of their preparedness activities and relief work.





Established in 1976, National Institute of Urban Affairs (NIUA) was tasked to bridge the gap between research and practice on issues related to urbanization, and suggest ways and mechanisms to address these urban challenges of the country. For more than 40 years now, NIUA has been the vanguard for contributing to, and at times, building the urban narrative for a fast-evolving urban India. The Institution has been actively working towards bringing forth key areas of concern for urban India in order to build the urban discourse at various scales.

It has utilized its competencies in research, knowledge management, policy advocacy and capacity building to address the urban challenges, and continuously strive to develop sustainable, inclusive, and productive urban ecosystems in India. It has emerged as a thought leader and knowledge hub for urban development in India, and is sought out by both Indian and International organizations for collaborations and partnerships for India's urban transforming journey. NIUA is committed towards aligning its efforts towards achieving the Sustainable Development Goals (SDGs) through all its initiatives and programs.



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