

# Accessible WASH

## Public Spaces and Schools

### Practitioners Manual

Making Water, Sanitation and Hygiene

Accessible and Safe through improved Planning and Design



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



**samarthyam**

National Centre for Accessible Environments  
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The views expressed in this publication are those of the authors and do not necessarily reflect the views of the Department of Empowerment of Persons with Disabilities, Ministry of Social Justice & Empowerment, Government of India.

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SECRETARY



भारत सरकार

सामाजिक न्याय और अधिकारिता मंत्रालय

विकलांगजन सशक्तिकरण विभाग

Government of India

Ministry of Social Justice and Empowerment

Department of Empowerment

of

Persons with Disabilities

## Foreword

I am pleased to place on record my deep sense of appreciation and heartiest congratulations to the team of Samarthyam, National Centre for Accessible Environments, New Delhi for preparing "Practitioner's Manual on Accessible WASH: Public Spaces and Schools".

This Manual is a comprehensive document that captures the entire gamut of water, sanitation and hygiene (WASH) strategy for persons with disabilities, which includes planning, design standards, child friendly facilities and also cost effective adaptations with indigenous materials. The Manual is user-friendly and would serve as a handy tool for practitioners to incorporate access elements for persons with disabilities especially for girls and women.

I am sure that both the government and the private sector will make best use of this Manual in developing their strategy for promoting accessibility in the field of safe drinking water, sanitation and hygiene, which will go a long way in ensuring life with dignity and independence for persons with disabilities.

I once again take this opportunity to congratulate Ms. Anjee Agarwal, Executive Director, Samarthyam and the team of Samarthyam for coming out with this lucid, illustrative, comprehensive and meaningful Manual for the guidance of stakeholders. I hope and wish that every such step in standardization of design and practices in the field of accessibility will foster and consolidate our commitment towards "Accessible India".

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## Acknowledgements

Practitioner's Manual on 'Accessible WASH: Public Spaces and Schools' is prepared by Samarthyam under the aegis of Department of Empowerment of Persons with Disabilities, Ministry of Social Justice & Empowerment, Government of India. Samarthyam thank the Department for their support in publishing the Manual.

We are thankful to Louisa Gosling, WaterAid UK for her valuable advice in compiling the Manual. Our heartfelt thanks to Dr. Indumathi Rao, CBR Network for her insight on provision of accessible toilet facilities in rural household settings.

We thank persons with disabilities and their carers for their inputs for adaptations in WASH facilities for optimum and independent use. Experience from research, access audits, trainings and user group inputs is the foundation of the Manual. We acknowledge contribution of access auditors and research team of Samarthyam for images and illustrations.

*Anjlee Agarwal, Executive Director & Access Consultant, Samarthyam*  
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## About Samarthyam

Samarthyam is a civil society and research organization founded by persons with disabilities in 1995. Samarthyam is accredited by United Nations Economic and Social Council (ECOSOC). It evaluates, develops, and promotes universal accessibility in built & outdoor environments, transportation systems and products.

It's mission is to improve environments through research, access audits, design innovation and capacity building trainings.

Samarthyam's goal is to promote the understanding and implementation of accessibility of the sustainable built, social and virtual environments, using the guiding principles of Universal Design and articles of the UN Convention on the Rights of Persons with Disabilities. It is promoting UNESCAP Incheogn Strategy to "Make The Right Real". As Consultant with Government of India, Samarthyam has facilitated policy level changes to make Incredible India = Inclusive India.

## About The Manual

There is a critical need to increase understanding on the links between functionality and maintenance, violence and WASH and promotion of universal access, which benefits persons with disabilities and the entire community.

Based on four years of research and collaboration with water & sanitation and disability rights organisations, this manual is prepared by Samarthyam to fill a significant knowledge gap. Common barriers observed in day-to-day functioning of persons with disabilities, especially girls and women, and experience of carers/ family members while accessing WASH, forms the base of this Manual.

The main focus of the Manual is to develop inclusive rights based universal accessible sanitation designs and demonstrate the efficacy in Indian communities in diverse socio-economic-ecological and cultural environments. These designs are viable for all institutional settings, such as schools, public buildings and in emergency situations in both rural and urban areas. Many of the approaches and solutions can also be applied for family use in household toilets.

Pictures and graphic illustrations of examples in India and Africa are presented to gain a better understanding of the different technical solutions on offer in this Manual. It brings together a range of examples of promising good practice that have the potential to reduce barriers and vulnerabilities to accessibility associated with WASH programmes and services. Cost effective and practical solutions are provided for ease of implementing in diverse sites and terrains. The approaches and strategies provide knowhow to practitioners to incorporate access elements during planning, designing and implementation.

# Contents

- Foreword.....iii
- Acknowledgements.....iv
- About The Manual.....v
- List of Figures.....viii
- Glossary.....x
- 1. Introduction.....1**
  - 1.1 Global Prospect: Disability and WASH.....2
  - 1.2 Sustainable Development Goals (SDGs).....2
  - 1.3 Indian Context.....4
- 2. Laws and Legislation.....8**
  - 2.1 The Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995.....9
  - 2.2 United Nations Convention on Rights of Persons with Disabilities (UNCRPD), 2008.....9
- 3. Planning, Design and Implementation..... 10**
  - 3.1 Toilets and Water Supply in Schools, Community and Household.....11
  - 3.2 Cost of accessible construction.....12
  - 3.3 Standards for accessible construction.....13
  - 3.4 Implementation.....13
  - 3.5 Non Negotiable Elements.....14
- 4. Design Standards.....15**
  - 4.1 Approach: Pathway and Connecting Passages ..... 16
  - 4.2 Gratings.....16
  - 4.3 Circulation Area.....17
  - 4.4 Entrances & Exit.....17
  - 4.5 Entrance Doors.....18
  - 4.6 Signage Tactile and Braille (external).....19
  - 4.7 Steps & Stairs.....20
  - 4.8 Ramps.....20
  - 4.9 Handrails.....22
  - 4.10 Tactile Surface.....22
  - 4.11 Clearances.....23
  - 4.12 Toilet Signage (Internal).....24
  - 4.13 Accessible Toilets.....26



4.14 Accessible Toilet (Squatting Seat).....	28
4.15 Accessible Urinals.....	31
4.16 Water Points.....	32
4.17 Accessible Handpump.....	32
4.18 Bathing Cubicles.....	32
<b>5. Child Friendly Facilities (Schools &amp; Community Toilets).....</b>	<b>35</b>
5.1 Outside the Toilet (Door) .....	36
5.2 Inside the Toilet (Door).....	38
5.3 Incinerator.....	40
5.4 Washbasin.....	42
5.5 Types of Independent Wheelchair Transfers.....	44
5.6 Drinking water.....	49
<b>6. Cost-Effective Adaptations with Indigenous Materials.....</b>	<b>50</b>
6.1 Adaptations.....	52
6.2 Adaptations in Rural Areas/ Shelters/ Individual Household....	53
<b>7. Checklist.....</b>	<b>54</b>
<b>References.....</b>	<b>60</b>

## List of Figures

Figure 1 Gratings.....	16
Figure 2 Accessible entrance.....	17
Figure 3 Position of door hardware.....	18
Figure 4 Position of Braille signage.....	18
Figure 5 Braille signage.....	19
Figure 6 Placement of other signage.....	19
Figure 7 Step edges in contrast colour.....	20
Figure 8 Stairs with handrails.....	20
Figure 9 (1) Straight ramp (2) L-shape (3)Turning/Switchback.....	21
Figure 10 Knuckle clearance.....	22
Figure 11 Layout of tactile pavers.....	22
Figure 12 Wheelchair clearance.....	23
Figure 13 Wheelchair passing spaces.....	24
Figure 14 Toilet signage with embossed letters and Braille.....	25
Figure 15 Location of signage for general toilets.....	25
Figure 16 Internal layout of accessible toilet.....	27
Figure 17 Manoeuvring space in accessible toilet.....	27
Figure 18 Washbasin standards .....	28
Figure 19 Signage for Indian squatting toilet.....	29
Figure 20 Space clearance, Layout of accessories.....	30
Figure 21 Chest support Grab bar.....	31
Figure 22 Individual bathroom with roll in shower.....	33
Figure 23 Shower fittings.....	34
Figure 24 Toilet cum bathroom facility .....	34
Figure 25 Wheelchair accessible door hardware (outside toilet).....	36
Figure 26 General door hardware (outside toilet).....	37
Figure 27 Wheelchair accessible door hardware (inside toilet).....	38
Figure 28 General door hardware (inside toilet).....	39
Figure 29 Location of incinerator in accessible toilet.....	40
Figure 30 Location of incinerator in general toilet .....	41
Figure 31 Washbasin inside accessible toilet .....	42
Figure 32 Washbasin outside general toilet.....	42
Figure 33 Washbasin accessories (front view).....	43
Figure 34 Washbasin accessories- plan.....	43
Figure 35 Option I (Front transfer).....	44
Figure 36 Option II (Diagonal transfer).....	45

Figure 37 Option III (Front transfer)..... 46  
Figure 38 Option IV (Front transfer).....47  
Figure 39 Option V (Parallel transfer).....48  
Figure 40 Drinking water at multiple levels (Option I).....49  
Figure 41 Drinking water at multiple levels (Option I).....49  
Figure 42 Adaptation in squatting seat.....52

## Glossary

**Access Aisle-** An accessible space between elements, such as seating, rows and corridors, etc. that provides clearances appropriate for use of elements (Agarwal, Guidelines on Barrier Free Environment in Schools for Children with Disabilities, 2014).

**Accessible-** A site, building, facility, or portion thereof that complies with this Manual and that can be approached, entered, and used by persons with disabilities.

**Accessible Route-** A continuous unobstructed path connecting all accessible elements and spaces in a building that can be negotiated by a person with disability using a wheelchair and is safe for and usable by persons with other disabilities.

**Accessible Toilet-** A cubicle having basic requirements of a water closet compartment, washbasin and other essential toilet accessories.

**Administrative Authority-** A governmental agency that adopts or enforces regulations and guidelines for the design, construction, or alteration of buildings and facilities.

**Bevelled-** Smooth, slanted angle between two surfaces: for example, a slope or inclination between two uneven surfaces to allow easier passage of a wheelchair.

**Braille-** The Braille system is a method that is widely used by blind people to read and write. Each Braille character or cell is made up of six dot positions, arranged in a rectangle containing two columns of three dots each. Braille is adapted to several languages including Hindi.

**Circulation Path-** An exterior or interior way of passage from one place to another, including walkways, hallways, courtyards, stairways and stair landings.

**Clear Door Width-** Is the unobstructed passage available after reducing the  
1) thickness of the door;  
2) space between the door and the frame on the hinged side; and  
3) thickness of doorstop moulding on the doorframe. Therefore, the clear door width is always less than the full width of the door.

**Colour Contrast-** The basic guidelines for making effective colour choices are based on the hue value of the colours. The most commonly used methods of achieving colour contrast incorporate either 'harmonising' or 'contrasting' colour combinations.

**Disability-** Persons with disabilities include those who have long-term physical, mental, intellectual, or sensory impairments, which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others<sup>1</sup>.

**Entrance-** Any access point to a building or portion of a building or facility used for the purpose of entering.

**Fixed Turning Radius Wheel-** The tracking of the caster wheels and large wheels of a wheelchair when pivoting on a spot.

**Fixed Turning Radius, Front Structure to Rear Structure-** The turning radius of a wheelchair, left front-foot platform to right rear wheel, or right front-foot platform to left rear wheel, when pivoting on a spot.

**Gender-** Gender relates to the social and economic difference between men and women. Gender does not relate only to women, but to both women and men. The gender approach optimises the roles and responsibilities of both men and women.

**Grab Bars-** A bar used to give a steadying or stabilizing assistance to a person engaged in a particular function.

**Handrails-** A rail used in circulation areas such as corridors, passageways, ramps, and stairways to assist in continuous movement.

**International Symbol of Access-** Also known as the (International) Wheelchair Symbol. The International Symbol of Access consists square overlaid with a stylized image of a person using a wheelchair. The symbol is often seen where access has been improved, particularly for wheelchair users and other mobility impaired persons.

**Kerb Ramp-** A short ramp cutting through a kerb or built up to it.

**Operable Part-** A component of an element used to insert or withdraw objects, or to activate, deactivate, or adjust the element.

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<sup>1</sup>Article 1, UNCRPD

**Pictogram-** A pictorial symbol that represents activities, facilities, and/or concepts.

**Public Use-** Interior or exterior rooms, spaces, or elements that are made available to the public and are privately or publicly owned.

**Ramp-** An inclined way connecting one level with another. A walking surface that has a running slope.

**Tactile-** That can be perceived using the sense of touch.

**Tactile Warning Blocks-** In order to warn persons with visual impairments of the approaching danger, it is recommended to incorporate Tactile Ground Surface Indicators (TGSIs) along the approach path to unavoidable obstacles and hazards. TGSIs, also commonly known as 'Tactile Warning Blocks', are 300 mm x 300 mm tiles that incorporate high flat-topped blister like domes. These tactile warning blocks are recognised internationally as a sign of approaching hazards, and are readily available in the domestic Indian market.

**Tactile Guiding Blocks-** These are 300 x 300 mm blocks that incorporate flat topped bars that are easily detectable underfoot by people with visual impairments. They are used externally to guide them along the circulation path.

**Universal Design-** Refers to the design of products, environments, programs, and services to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.

# 1. Introduction



## 1. Introduction

Water, Sanitation and Hygiene (WASH) programmes can support persons with disabilities (PwDs) to claim their rights, by helping to increase their visibility, dignity, self-confidence and active participation in policy and decision-making, often by working closely with disabled peoples' organisations (DPOs).

### 1.1 Global Prospect: Disability and WASH

Around 15% of the world's population, or estimated 1 billion people, live with disabilities (World Disability Report, 2011). One of the key challenges faced by PwDs is social discrimination and attitudinal bias that impede their access to rights and entitlements.

WASH is important for PwDs; however, they have limited access to WASH services in general as well as in emergencies.

- Lack of inclusive WASH impacts health, education, overall well being and development.
- Without accessibility, PwDs do not enjoy development benefits of WASH.
- It affects household members who support PwDs to use WASH.
- Gender impact girls who are disabled and their carers.
- Disability-inclusive development with a focus on inclusive WASH is essential to fully achieve the Sustainable Development Goals (SDGs).

### 1.2 Sustainable Development Goals (SDGs)

The global goal for water is supported by a coherent, cohesive, and mutually reinforcing set of targets. Used together these would enable the global goal to be met. One of the SDGs targets is "achieve universal access to safe drinking water, sanitation, and hygiene". This target is detailed in box-1 (UN Water, 27 January 2014). However, this target does not explicitly cover diverse accessibility needs of communities with respect to -age, -gender and -disability, which is obvious from the elements highlighted and related indicators provided under the goals. The SDGs must mandate universal accessibility to reduce inequalities and enhance access, reach, and use of the WASH facilities and services.



## Box-1

### Target A: Achieve universal access to safe drinking water, sanitation and hygiene

<b>Element 1:</b> <u>No Open Defecation:</u> "to eliminate open defecation"	<b>Element 2:</b> <u>Basic Access:</u> "to achieve universal access to basic drinking water, sanitation and hygiene for households, schools and health facilities"	<b>Element 3:</b> <u>Safely Managed Services:</u> "to halve the proportion of population without access at home to safely managed drinking water and sanitation services"	<b>Element 4:</b> <u>Equality:</u> "to progressively eliminate inequalities in access"
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### Desired outcomes/country actions

- Water allocations decisions and water withdrawals that take into account both human and governments integrate open defecation within strategies for improving child survival and nutrition, and reducing extreme poverty.
- Governments adopt ambitious targets for improving WASH service levels in order to reduce global burden of WASH related diseases, to improve productivity and economic growth, and to reduce inequalities between population groups.
- Governments adopt ambitious targets in order to reduce global burden of disease from diarrhoea and other WASH related diseases, improve child and maternal health, improve nutrition, improve (girls) education outcomes, and reduce (gender) inequalities.

#### WASH Targets- By 2030

- Eliminate open defecation;
- Achieve universal access to basic drinking water, sanitation and hygiene for households, schools and health facilities;
- Halve the proportion of the population without access at home to safely managed drinking water and sanitation services; and
- Progressively eliminate inequalities in access.

### 1.3 The Equity Imperative

**“Addressing inequalities is not a choice - it's a necessity and this is an emergency.**

The section on UN Declaration on human rights to water and sanitation, which is signed by India explicitly mentions that, “a central principle for the realization of rights to water and sanitation is non-discrimination. The rights to water and sanitation demand that discriminatory practices related to law or policies that distinguish between groups be eliminated immediately. The discriminatory practices still require urgent attention, including specific consideration of the situation of disadvantaged and marginalized individuals and groups within a society”.

Access to improved sanitation is fundamental to ensuring the dignity, safety and equality of this group of people and to enhance their social inclusion. Additionally, sanitation can also play an important role in reducing the risks of associated infections. It can greatly improve quality of life, and make home-based care for people living with severe disabilities and chronic illnesses, easier and more dignified.

Commitments made by South Asian governments at the fifth South Asian Conference on Sanitation (SACOSAN-V) held in 2013 include the Kathmandu Declaration<sup>2</sup> signed by the Government of India. The Declaration states *'develop standards and monitor them and to develop and implement guidelines and standards suitable for child, adolescent, gender and disabled friendly WASH facilities, with compliance indicators on hand washing and menstrual hygiene education and practice'*.

#### **Universal access to basic drinking water, sanitation and hygiene for households, schools and health facilities**

- Universal access means access for all. This requires overcoming the barriers to WASH for persons with disabilities,
- Ending open defecation also requires accessible options for those who need it, and
- Progressively eliminate inequalities in access.

*Gosling. L, WaterAid UK*

<sup>2</sup> Kathmandu Declaration, SACOSAN V, 2014

### 1.3.1 School Children<sup>3</sup>

A direct result of poor sanitation in schools leads to drop out rates and illness amongst school going children. With the largest numbers of school-going children, especially in rural areas, India has over 766,000 primary & upper primary schools. However, despite the encouraging increase in toilet coverage in schools to 84%, most of these remain inaccessible for children with disabilities (CwDs).

- Less than 1% CwDs gets admissions in schools. There is no data available on the retention rate / drop outs of CwDs.
- Only 15% of schools have toilets, wherein toilets for girls are missing.
- 23% of India's girls drop out of school after reaching puberty.
- Although, emphasis is laid on separate toilets for girls in the schools, there is no mention of access needs of girls with disabilities.
- Operation and maintenance of the facilities persist, leading to widespread open defecation among school children in rural areas.

### 1.3.2 Girls and Women with Disabilities<sup>4</sup>

Women and girls with disabilities fare less well in the Indian educational arena and low access to work than either their male counter parts or other women without disabilities. This is due to lack of accessible amenities such as toilets. There are fewer toilets for women than men in public places, educational institutions and work places, which pose health and safety threats for girls and women in general and more so for those with disabilities.

- Women suffer from urinary tract infections (UTIs) caused by poor hygiene (Facts for Life). Additionally, it leads to urinary/kidney disorders for most.
- Women are more severely affected by lack of toilets, as due to cultural taboos, they cannot openly defecate during daylight. In order to get away from the eyes of men, women often use more isolated places for open defecation, making them vulnerable to getting molested or raped.
- Between dawn and dusk, millions of women living without toilets are simply forced to hold it.

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<sup>3</sup> Poo 2 Loo, Campaign, UNICEF, 2013

<sup>4</sup> Policy Brief on Status of Women with Disabilities in India, Samarthyam, 2014

- Many times, they have to walk long distances to collect water thereby, increase their vulnerability to harassment and violence, including sexual abuse.
- Moreover, girls and women with disabilities in rural and semi urban areas are bodily lifted by their family members/ carers; transferred with soiled clothes, which aggravates health hazards and they become more prone to abuse and violence. Situation gets worse during menstruation cycle and there are no safe and dignified means for menstruation hygiene management for them.
- Only 12% of young girls and women have access to, and use sanitary napkins. However, even for those who use sanitary napkins, there is no facility for safe disposal in schools, colleges, community toilets, etc.
- 200 million have a poor understanding of menstrual hygiene and linked

## Box-2

### WASH and Abuse

Geetha lives in a remote village in Odissa, India. Geetha is paralyzed below the waist and lives with her old mother. The villagers defecate in open every day. When an NGO asked her how she manages everyday, she informed that young men carry her to the field. When asked about any abuse she said "no". Only after a lot of assurance, she acknowledged abuse, "How can I refuse? They help me every day"...

*Source: Low cost accessible toilets for persons with disabilities, CBR Network*

### 1.3.3 Persons with Disabilities and Elderly

- Persons with disabilities are the world's largest minority (WHO)<sup>5</sup>.
- 20-30% of people in India make up the environmentally challenged. This includes the temporarily impaired and the elderly.
- In 2020, the total population of the elderly is projected to be 177 million, and majority of them will have multiple disability conditions<sup>6</sup>.

<sup>5</sup> World Disability Report, 2011

<sup>6</sup> Sanitation Rights and Needs of Persons with Disabilities, Samarthyam, 2013

- Persons with disabilities due to their physical barriers find it difficult to use general infrastructure or go outside for defecation.
- Accessible toilet standards are not comprehensively specified in any of the state/ national/ international policies and programs viz. Swachh Bharat Abhiyan, Total Sanitation Campaign, Global Sanitation Fund, etc.
- All those responsible for the built environment, including the ones working towards providing WASH services have a key role in reducing attitudinal, institutional, physical and environmental barriers.
- Making WASH programmes more accessible, inclusive and user-friendly benefits everyone in the community, including older people, children, pregnant women and those who have medical conditions and ailments.

### Box-3

#### Demand and Design

Accessible toilets need larger floor space than other cubicles to allow space for a wheelchair to maneuver. This space is also useful for people who are not necessarily wheelchair users, but still need physical support from someone else. A wheelchair-height changing table is also recommended, but remains rarely available. Accessible changing tables are low and accessible to a wheelchair user, and long enough for a caretaker to change an older child or adult with a disability.

*Source: Low cost accessible toilets for persons with disabilities, CBR Network*

Access to water is a human right, as it underlined in the Article 25 of the UN Declaration of Human Rights and in the Article 27 of UN Convention on the Rights of the Child.

UN Convention on the Rights of People with Disabilities state: access to clean water services is marked as a right in the Article 28 (adequate standard of living and social protection).

## 2. Laws and Legislations



## 2. Laws and Legislation

Towards the creation of tangible options for all segments of the disabled population to access a safe and secure environment, Convention that needs special mention is United Nation Convention on Rights of Persons with Disabilities (UNCRPD). The WASH rights of Persons with Disabilities (PwDs) have been recognized under the Persons with Disabilities Act 1995; Government of India circular on sanitation access for PwDs, the Right to Education (RTE) Act and Sarv Sikhsha Abhiyan for making barrier free schools. Swachh Bharat Abhiyan, National Campaign of the Government of India, also promote accessible toilets for children with disabilities in the schools.

### 2.1 The Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act<sup>7</sup>, 1995

The Persons with Disabilities Act provides equal opportunities, protection of rights and full participation to the persons with disability; especially non-discrimination in transport and access to the built environment<sup>8</sup>.

### 2.2 United Nations Convention on Rights of Persons with Disabilities<sup>9</sup> (UNCRPD), 2008

The Government of India (GOI) signed and ratified the Convention in May 2008 to bring about 'change' in the lives of PwDs. The convention includes people with different types of disabilities, for example people with long-term physical, mental, intellectual or sensory disabilities that can hinder their participation in society on an equal basis with others. Article 9- Accessibility and Article 20- Personal Mobility of UNCRPD is based on the concept of 'universal design' and focuses more on the individual and the specific requirements of the person to be able to become independent, move from one place to another and use all public services and facilities with ease and safety.

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<sup>7</sup> <http://ccdisabilities.nic.in/Act%201.htm>

<sup>8</sup> <http://ccdisabilities.nic.in/chapter8.htm>

<sup>9</sup> <http://www.icrpd.net/implementation/en/index.htm>

# 3. Planning, Design and Implementation





## 3. Planning, Design and Implementation

### 3.1 Toilets and Water Supply in Schools, Community and Household

Adaptations to WASH facilities should be made for the three main categories of PwDs:

**Children and adults with visual impairment (low vision and blind):** special grips and guiding systems as well as adequate lighting.

**Children and adults using mobility aids such as wheelchairs or crutches:** provision of ramps, wider doors, and special grips or foldable seats.

**Children and adults with missing or paralysed arm(s):** lids, taps, and knobs that can be opened with one hand or operated with the feet and are not too heavy.

The following criteria should be considered for toilets and water supply:

**Universal Design:** The toilet design should follow the universal design principles i.e. “design for all”, where the design can be used by any person regardless of gender, age or health conditions. In rural areas, a combination of European water closet (WC) and squatting toilet seat should be provided in both Ladies and Gents toilet blocks with accessible toilet signage.

**Approach:** Accessible toilet and water facilities should preferably be inside the building or located within 30 meters of the building.

**Operations and Maintenance:** Functional and clean toilet facility with water availability.

**Safety:** Children, women and PwDs have to feel secure when visiting WASH facilities without risking and fearing harassment by people or attacks by animals such as snakes, scorpions or spiders. Access routes have to be open and clear and the facilities must be in hearing/visual distance of the community so that assistance can be called for if necessary.

**Privacy:** Particularly for people above the age of eight, toilet facilities and urinals should guarantee privacy. Locating girls and boys toilets in separate locations will mean that boys have no reason to be near girls facilities and allow for girls privacy.

**Menstruation Hygiene Management (MHM):** All girls should have access to sanitary material for use during menstruation. Safe and hygienic disposal of same should be provided in girls general and accessible toilets. Running water is required in Girls and Ladies toilets.

**Weather Proof:** It must be possible to reach facilities during all weather conditions, also after heavy rains or flooding.

**Independent usage:** Accessible toilet facilities should be so designed that PwDs who can transfer independently (those who can manage on their own), can access and use the facility without assistance.

**Proper use:** Facilities only contribute to health and hygiene improvements if properly used. Especially for younger children, supervision of behaviour and skills by adults is essential. Some locations will facilitate supervision of proper use, e.g. for younger children a hand washing facility near the classroom allows for better monitoring than when it is near the exit of the toilet.

**Supervision:** The location of the facilities should allow for proper supervision and reduce the risk of vandalism, particularly when communal WASH facilities are being installed. Somebody, or a group of supervisors, has to be responsible for this task.

**Location:** There is a tendency to locate toilets and urinals close to other odour and fly producer amenities, such as garbage dumps and cattle or animal pens, where animals defecate. This will not motivate people to use them. It is better to locate facilities elsewhere and/or design solutions that minimize the nuisance and environmental degradation. Ladies and Gents toilets should not be constructed facing each other; these should be parallel to each other. This will help in preventing abuse and harassment of women and girls with disabilities.

### Persons with Disabilities are WASH disadvantaged:

- Facilities are not inclusive;
- There is a serious lack of accessible information available on low-cost and low-tech adaptations for WASH facilities;
- Negative attitudes lead to exclusion and
- Women and men with disabilities are rarely meaningfully consulted or involved in decisions about WASH policy and programmes.

*Gosling. L, WaterAid UK*

## 3.2 Cost of Accessible Construction

Often only minor changes are needed to ensure that PwDs can be included in WASH service provision. **The cost of making inclusive facilities is minimal compared to the costs of exclusion.**

Making public infrastructure accessible can cost less than 1% of total construction costs, if accessibility is planned from the outset<sup>10</sup>. However, this evidence is not specifically related to water and sanitation. Limited data from WaterAid estimates that it costs 8% extra to make a school latrine accessible<sup>11</sup>. The cost of altering toilet and water point designs to make these universally accessible is significantly higher than incorporating accessibility at the planning, design and construction stage.

In some cases (e.g. WASH constructions), compliance with standards of accessibility may require going beyond the basic standard design. In situations, when all units cannot be made accessible, a minimum number of units should comply with accessibility standards given the nature of the facility and the population it is catering to. For example, ensure at least one accessible unisex latrine in every school or provide one accessible cubicle each for boys and girls toilet, where conventional society norms do not promote unisex latrines. Under a universal design approach, this should also incorporate feature for girls menstruation hygiene, which serve as toilet facilities for teachers as well.

### 3.3 Standards for Accessible Construction

While engaging in construction activities, we must consider existing accessibility national legislation and standards as laid down in the Guidelines and Space Standards for Barrier Free Built Environment for Disabled and Elderly Persons, 2014, Ministry of Urban Development; Indian Roads Congress IRC 103: Guidelines for Pedestrian Facilities, 2012 and model building by-laws.

### 3.4 Implementation

Access standards shall be used for WASH facilities in individual/household, schools, community toilets, public buildings, garden, parks and tourist spaces.

<sup>10</sup> Steinfeld, E. (2005) *Education for All: The Cost of Accessibility*. Education Notes 38864. The World Bank: Washington.

<sup>11</sup> WaterAid (2010) *Accessibilité des infrastructures communautaires d'adduction d'eau potable, d'assainissement et d'hygiène*. Technical Briefing Paper. WaterAid Madagascar.

- The fact that most individual toilets are modified/ adapted as per the specific need of the user with disability in the home; the recommendations and standards given in this manual aims at provision of accessible elements in school, household and community toilets to be used by persons with reduced mobility and disabilities.
- All community and school toilets should have a combination of Indian squatting toilet seat and western commode as per the requirement of diverse users.
- Many people grow up defecating outdoors or using squatting toilets that require sitting down, getting up and maintaining a squat posture during defecation. This manual provides design solutions and access standards for Indian squatting seat as most mobility impaired persons viz. those with polio prefer to use Indian squatting toilets, especially in rural areas. They do not use wheelchair as they live in homes having narrow doorways, unpaved external environment and many of them cannot afford wheelchairs. Consequently, they crawl around and inside the home / public spaces and use tricycle outside.

### **3.5 Non Negotiable Elements**

Some non-negotiable and essential elements to be considered while refurbishing existing WASH facilities or providing new toilets:

- 1) approach- straight, wide and clean paths,
- 2) door size - ease of entering/exiting,
- 3) cubicle size - space adequacy for user as well as attendant and maneuvering clearances,
- 4) need for support (grab bars) when sitting down and getting up (squatting seat) and wheelchair maneuvering space & transferring (European commode seat), and
- 5) access to the water source.

# 4. Design Standards



## 4. Design Standards

Applicable design standards for rural, semi-urban and urban areas (dimensions are in millimeters-mm)

### 4.1 Approach: Pathway and Connecting Passages

- Minimum width of a pathway should be 1800mm;
- Minimum width of a connecting passage/corridor should be 1200mm;
- Must be easy to follow and obstruction-free for the convenience of all users;
- Surface should be smooth and level, continuous, firm, non-slip and even;
- Pathways should be well lit having min. illumination of 80-100 lux level;
- Open drainages to have a concrete/stone slab to bridge the gap; and
- Brick paving is proposed for approach to toilets, bathing areas, water points, etc. to prevent mud/sand sinking especially during rains. It also helps in maintaining ramp edges flushed with the pathways.



Photo 1. Connecting passage

### 4.2 Gratings

- Gratings should not be wider than 10mm and where un-avoidable, strip of net/mesh to be securely fixed on to the existing gratings; and
- Same can be removed while cleaning/maintaining the drainage.

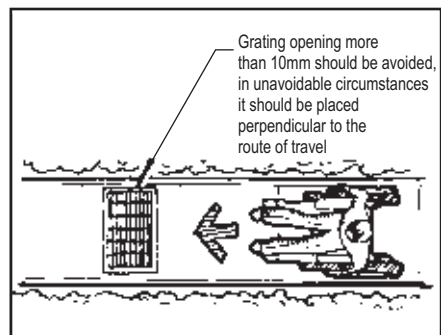


Figure 1. Gratings

### 4.3 Circulation Area

- **Circulation areas** should be well lit;
- **Thresholds** (door sill provided to prevent rain water) should not be more than 10mm;
- **Level differences and thresholds** higher than 10mm should be bevelled with small slopes on both the sides to facilitate unhindered mobility;
- **Resting places** should be provided in waiting areas. A combination of lowered seats at 350 mm height and others at 460-480 mm height should be provided. It is desirable to have arm rest and back support on these resting benches/chairs; and
- **Protruding elements** should be avoided.

### 4.4 Entrances & Exit

Overhead shed is strongly recommended for the general and accessible toilets. These toilets should be easily approachable and should be provided inside/in close proximity of main building.

Toilets in schools can have an easy identification mark for children with intellectual disabilities for girls and boys cubicles, for example, hang a braid on handle of Girls toilet and belt for Boys toilet.

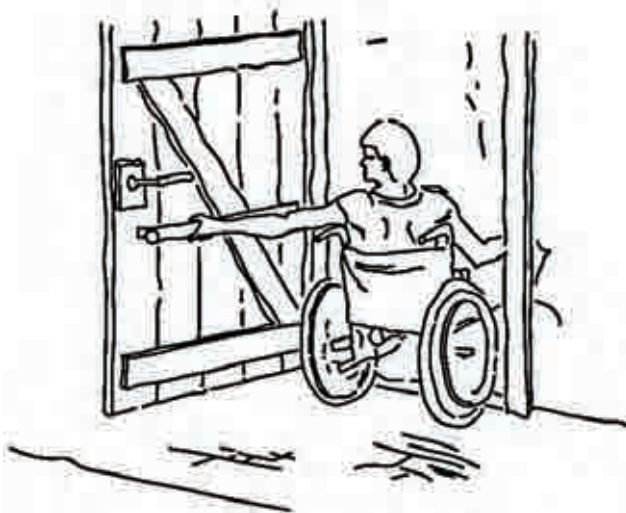


Figure 2. Accessible entrance

## 4.5 Entrance Doors

- Doors should be colour contrasted with the surrounding wall;
- The recommended minimum clear opening width of an internal door is 900mm minimum. Where doors comprise two leaves (i.e. double doors), each leaf should be 900 mm min. wide, so that persons carrying large items and wheelchair users do not have to open both leaves;
- Lever handles and push type mechanisms are recommended;
- Doors should be fitted with a lever action lock and D-handles of circular section, between 800 mm and 1000 mm from floor level;
- A distance of 450 mm-600 mm should be provided beyond the leading edge of door to enable a wheelchair user to manoeuvre and to reach the handle;
- Thresholds should be avoided. If provided, thresholds of doorways should not exceed 10 mm. Raised threshold and floor level changes at doorways should be levelled off (bevelled) with a slope on each side of a threshold; and
- Door hardware should be positioned between 800-1000 mm above floor.

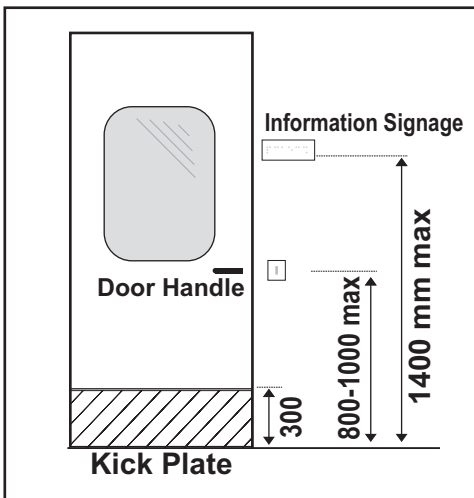


Figure 3. Position of door hardware

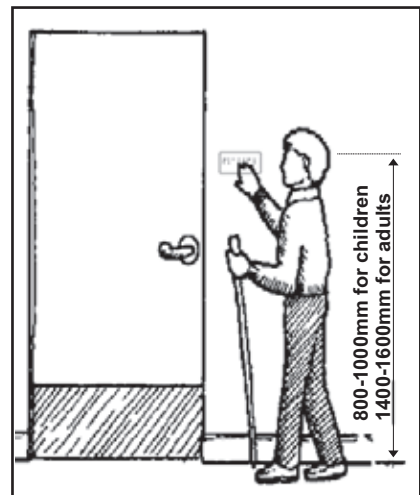


Figure 4. Position of Braille signage

Source: (Agarwal, *Guidelines on Barrier Free Environment in Schools for Children with Disabilities*, 2014)



## 4.6 Signage Tactile and Braille (External)

- Signage and toilet block numbers (in big buildings) to be in Braille & raised alphabets, bold & color contrasted with their background;
- The individual characters to be between 15 mm-50 mm tall and raised by 1-1.5 mm;
- Signage having pictograms (symbols) and Braille markings should be mounted on the wall (preferably on latch/door handle side), between:
  - 1400 mm and 1600 mm (adult height)
  - 800 mm and 1000 mm (child height)from floor level .

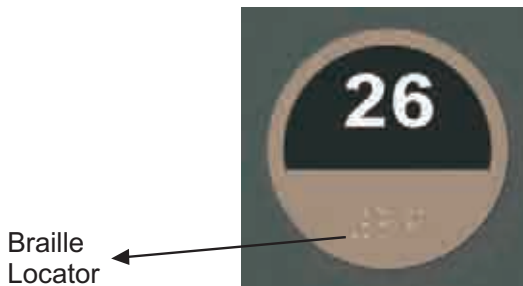


Figure 5. Braille signage

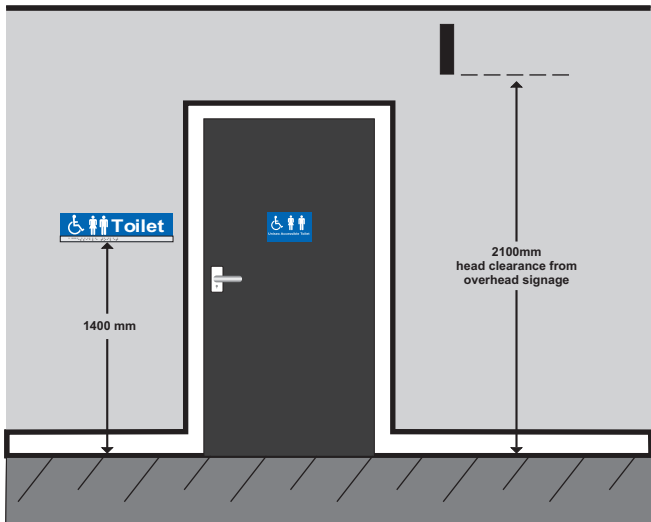


Figure 6. Placement of other signage

## 4.7 Steps & Stairs

- Steps should be uniform with the tread not less than 300mm and the risers 150 mm maximum (preferable 125 mm);
- The steps should have an unobstructed width of at least 1200 mm;
- All steps should be fitted with a permanent colour and tone contrasting at the step edge, extending the full width of the step, reaching a minimum depth of 50 mm on both tread and riser (Figure 7);
- Have continuous handrails on both sides including the wall (if any) at two levels: upper at 900 mm and lower at 760 mm and extend not less than 300mm beyond the top and bottom step (Figure 8);
- The rise of a flight between landings must be no more than 1200 mm;
- There should be no more than 12 risers in one flight run;
- Landing should be 1200 mm deep, clear of any door swing/ window; and
- The stair covering and nosing should be slip-resistant, non-reflective, firmly-fixed and easy to maintain.

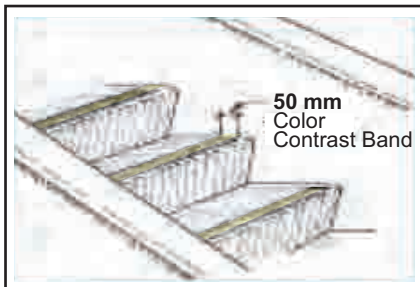


Figure 7. Step edges in contrast colour

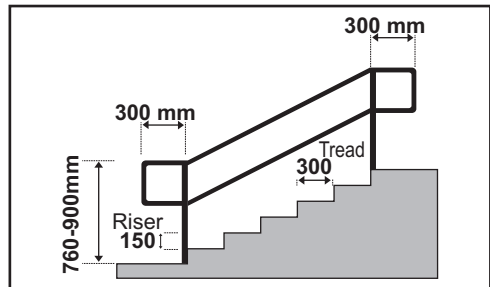
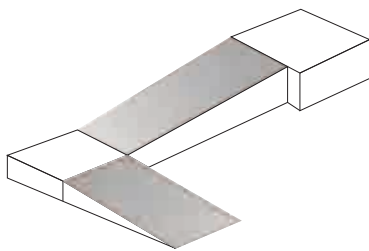
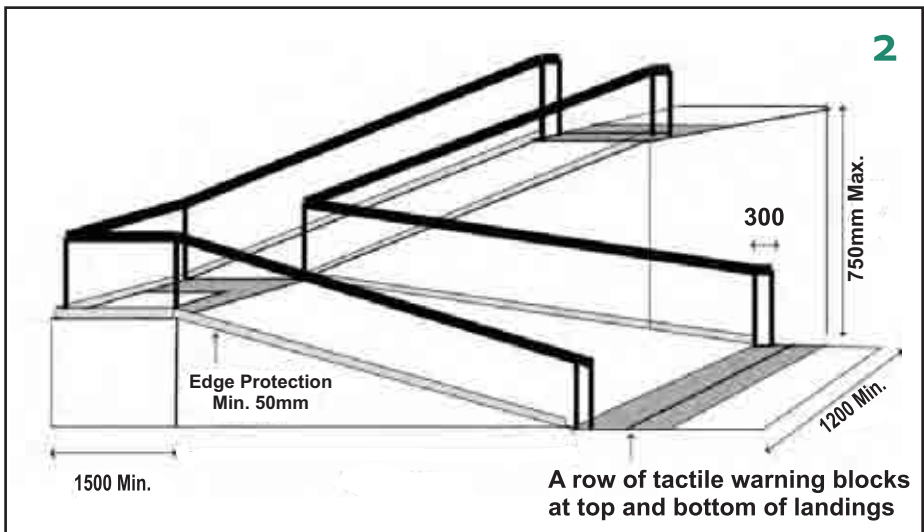
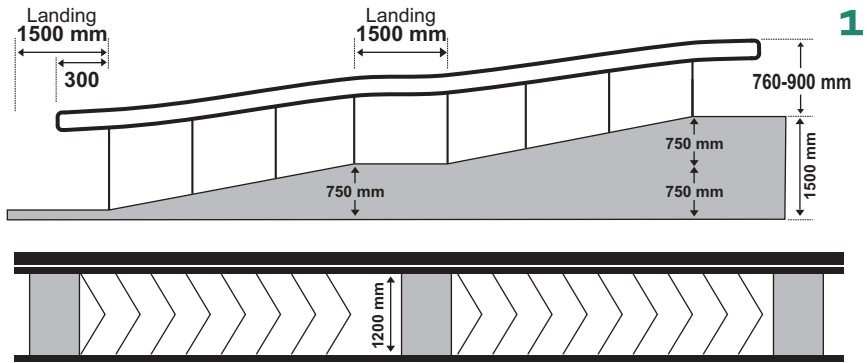


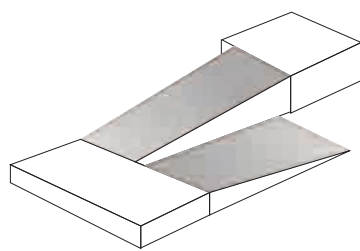
Figure 8. Stairs with handrails

## 4.8 Ramps

- Gentle slope- 1:15 max. Preferred 1:20 for longer ramps;
- Landings- every 750 mm of vertical rise;
- Clear width- 1200 mm minimum;
- Handrails to be on both sides and at two heights- 760 mm and 900 mm; and
- Both ends to be rounded/ grouted and extend 300 mm beyond top and bottom of ramp.



Turning Platform



Switchback Ramp

Figure 9. (1) Straight ramp (2) L-shape ramp (3) Turning and Switchback ramp

## 4.9 Handrails

- To extend by at least 300 mm, beyond the head and foot of the flight and ramp, in the line of travel;
- Ends should not be left open, instead these should be rounded off / grouted in the ground; and
- Should be in colour contrast to their surroundings- preferably in bright yellow/red colour, which are easily picked up by persons with low vision.

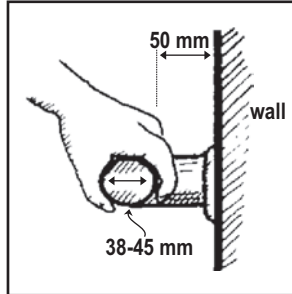


Figure 10. Knuckle clearance

## 4.10 Tactile Surface

- **Line-type** tiles/blocks indicate the correct path/route to follow;
- **Dot-type** tiles/ blocks provides warning signal, to screen off obstacles, level difference or other hazards, to discourage movement in an incorrect direction and to warn of a corner or junction, and should be placed 300 mm at the beginning and end of the ramps, stairs, lifts, and entrance to any door.

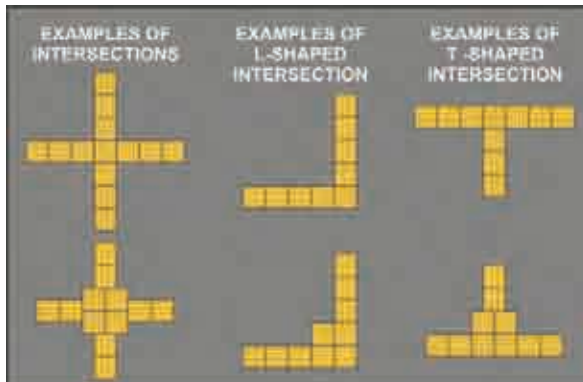


Figure 11. Layout of tactile pavers

## 4.11 Clearances

- **Clear Width-** The clear width of pathways shall be 1800 mm minimum to allow two wheelchairs to pass;  
*Exception:* The clear width shall be permitted to be reduced to 900 mm minimum for a length of 600 mm maximum provided that reduced width segments are separated by segments that are 1200 mm long minimum and 1000 mm wide minimum; and
- **Clear Width at Turn-** Where the accessible route makes a 180 degree turn around an element which is less than 1200 mm wide, clear width shall be 1000 mm minimum approaching the turn and 1200 mm minimum at the turn.

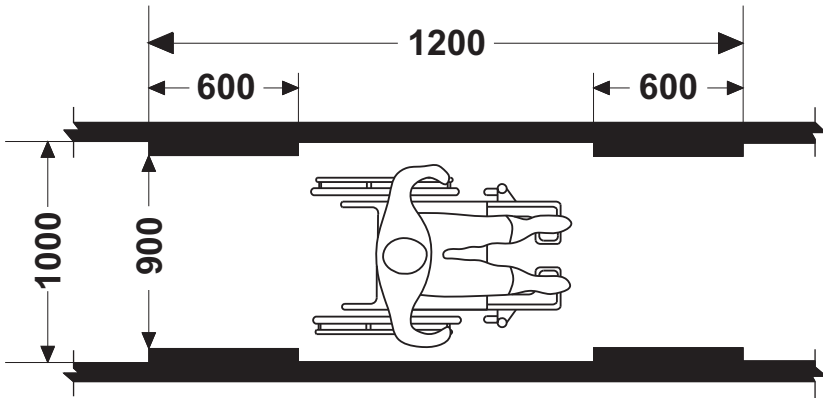


Figure 12. Wheelchair clearance

Source: ADA standards for Accessible Designs.  
USA: Department of Justice, 2010

- **Passing Spaces-** An accessible route with a clear width less than 1500 mm shall provide passing spaces. Passing spaces shall be either a space 1500 mm x 1500 mm minimum or an intersection of two walking surfaces providing a T-shaped space, where the base and arms of the T-shaped space extend 1200 mm minimum beyond the intersection.

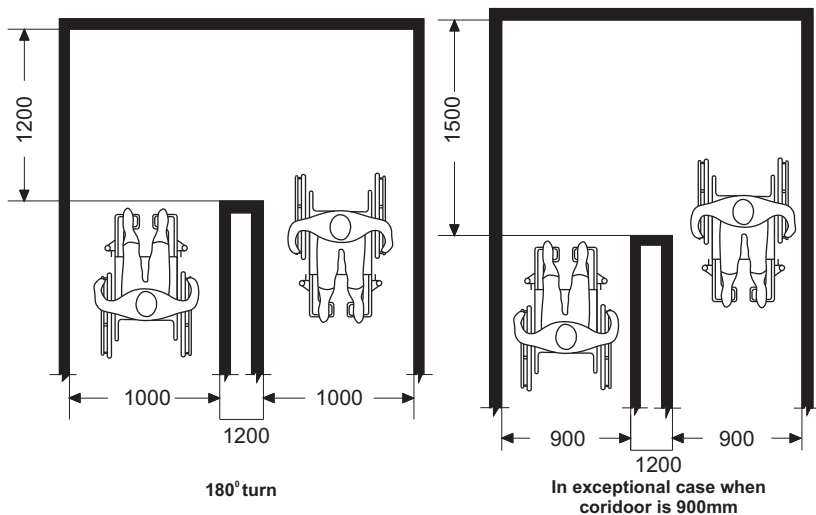


Figure 13. Wheelchair passing spaces

#### • Other Essential Elements

Floor should be slip-resistant. Corridors should be left unobstructed and features such as fire extinguishers, water coolers/ AC, etc. should be recessed. If necessary, change of direction should be at 90 degrees, avoiding curved corridors or oblique angles where possible. Directional signage should be repeated in long corridors to prevent disorientation.

#### 4.12 Toilet Signage (Internal)

- Signage should be visible, clear and properly lit at night;
- All signage to be in bold and contrasting colour, which helps persons with low vision;
- Signage, both written and pictograms, should be provided which benefits all, including persons with hearing impairment;
- For persons with low vision and visual impairments, pictogram in 3D (male pictogram in triangle and female pictogram in circle), marked on plates along with Braille & raised alphabets, to be mounted on the door and wall next to door on the latch side;
- Warning strip/ thin rubber door mat to be provided 300mm before the toilet entrances; and
- Accessible places and facilities should be clearly identified by the International Symbol of Accessibility.



Figure 14. Toilet signage with embossed letters and Braille

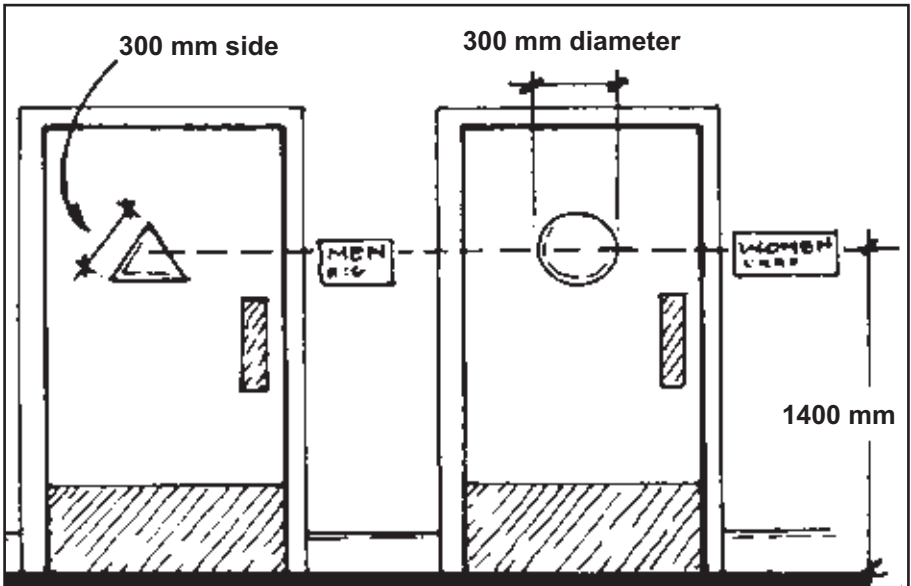


Figure 15. Location of signage for general toilets

### 4.13 Accessible Toilets

- A minimum of one toilet compartment should have enough floor space for wheelchair users to enter and exit; clear floor space should be 2000 mm x 2200 mm minimum;
- It is advisable to place WC in a corner (to facilitate parallel, front and diagonal wheelchair transfers) and located diagonally opposite the door (to maintain privacy of the user);
- A clear dimension of 900 mm from the edge of the WC to the washbasin/wall should be provided to facilitate side transfer by wheelchair users;
- WC should have clear space of 1200 mm minimum in the front;
- Centreline of the WC should be placed between 460-480 mm from the adjacent wall;
- The top of the WC to be 450-480 mm from the floor;
- Grab bars at the transfer side and the adjacent wall should be installed, which provides support in transfers/standing/wearing clothes;
- On the transfer side- swing away/up type and on the wall side L-shape grab bars should be provided;
- A switch near the WC (one at 300 mm and the other at 900 mm from the floor level), which activates an emergency audio alarm, should be provided;
- Anti-skid/matt finish tiles for flooring and gentle slope toward drainage should be provided to ensure no stagnated water and dampness; and
- Running water is essential for menstruation hygiene management. Water inlet pipe and availability of sanitary material and disposal mechanism should be provided.



Photo 2. Accessible toilet in a public building



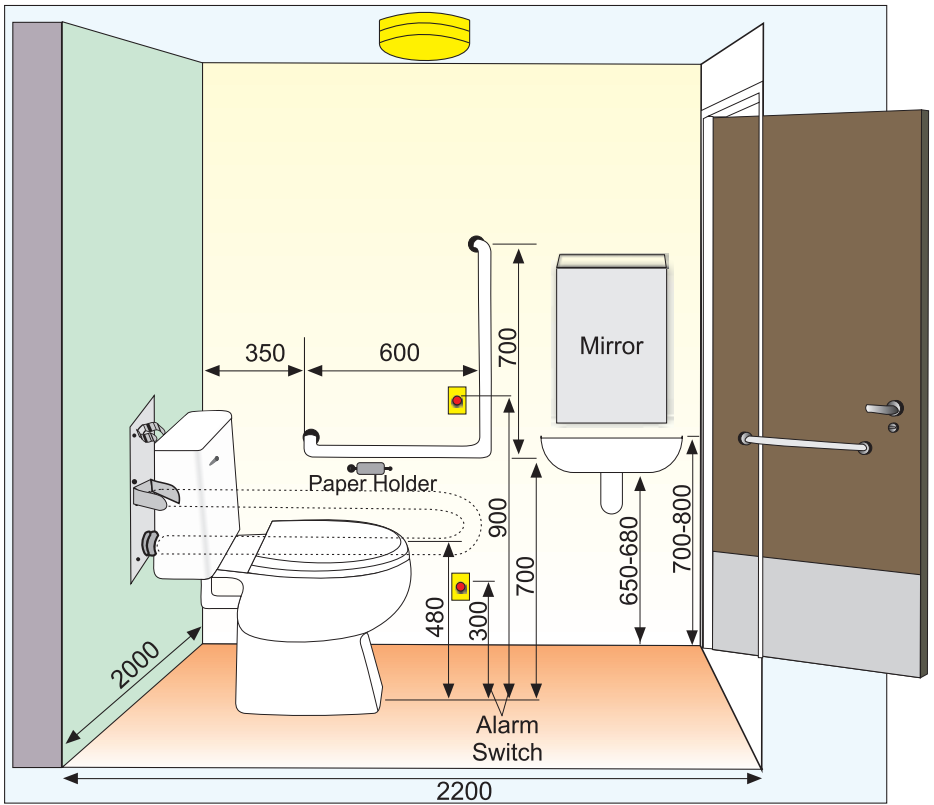


Figure 16. Internal layout of accessible toilet

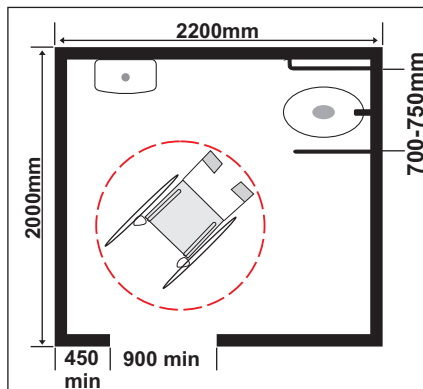


Figure 17. Manoeuvring space in accessible toilet

### 4.13.1 Washbasin

- Be of dimensions 520 mm and 410 mm, so mounted that the top edge is between 700 mm-800 mm from the floor; have a knee space of at least 760 mm wide by 200 mm deep by 650 mm-680 mm high;
- Lever type handles for taps are recommended; and
- Mirror's bottom edge to be 1000 mm from the floor and the mirror may be inclined at an angle.

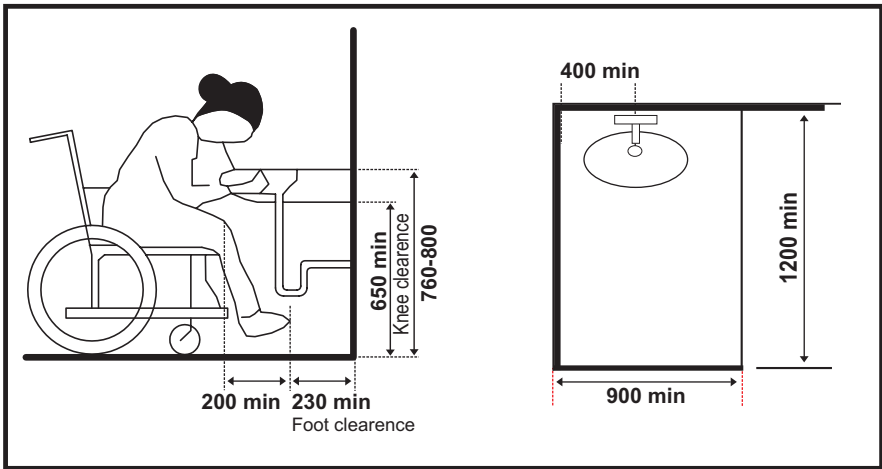


Figure 18. Washbasin standards

### 4.14 Accessible Toilet (Squatting Seat)

- Clear floor space 1200 mm x 1500 mm;
- Vertical grab bar should be provided, which helps in assisting a person with reduced mobility to lower into squatting position and then rise into standing again;
- Horizontal grab bar should be provided, which helps in balancing and stabilizing, when reaching for water/cleaning self;
- Health faucet/ hand held spray should be provided at height between 300-400 mm;

- Signage for Ladies and Gents toilet in Braille and pictogram should be provided;
- Door handle, lock and storage for crawlers, children and standing users at two levels/heights 300 mm and 800 mm; and
- Clothes hanging hook for seated and standing users at 800 mm and 1000 mm.

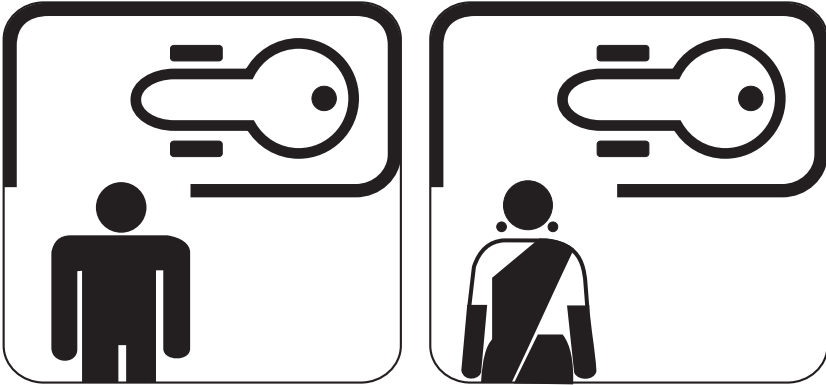
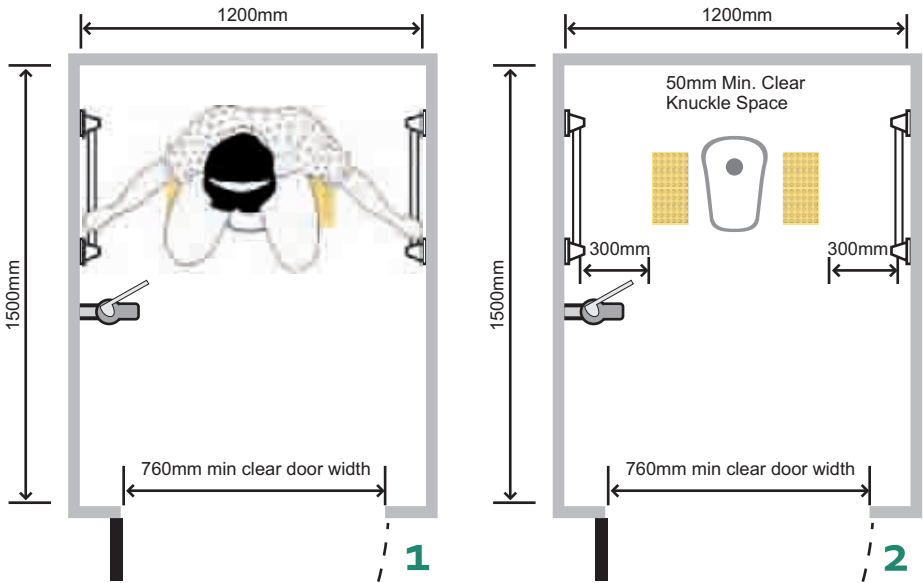


Figure 19. Signage for squatting toilet



Photo 3. Ladies toilet in community set up

Source: Romi Roy



### Squatting Toilet Plan

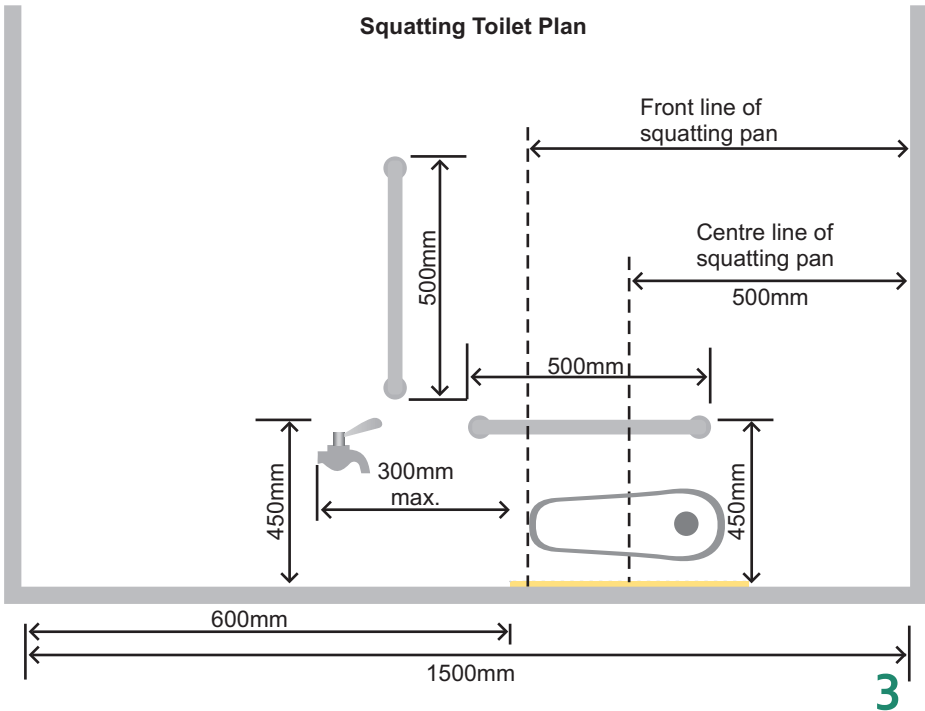


Figure 20. Space clearance (1), Layout of accessories (2 and 3)

## 4.15 Accessible Urinals

- At least one of the urinals should have grab bars, installed on each side and in the front of the urinal to support ambulant persons with disabilities (for example, crutch users);
- The front bar is to provide chest support; the sidebars are for the user to hold on to while standing;
- Urinals shall be stall-type or wall-hung, with an elongated rim at a maximum of 430 mm above the finish floor;
- A clear floor space 900 mm x 1200 mm should be provided in front of urinals to allow forward approach; and
- Urinal shields (that do not extend beyond the front edge of the urinal rim) should be provided with 735 mm clearance between them.

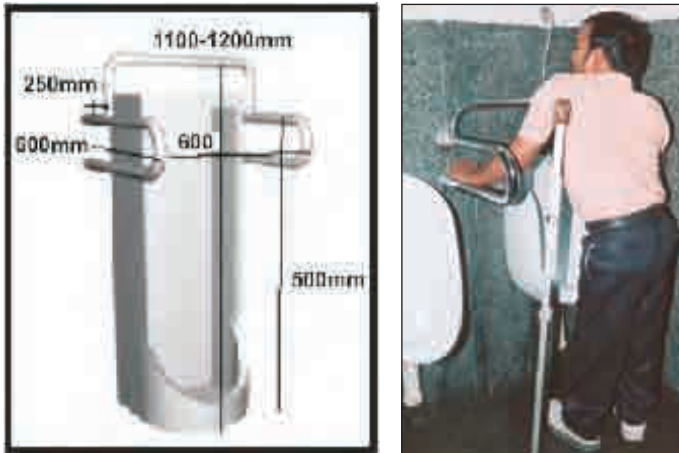


Figure 21. Chest Support Grab bar Photo 4. Accessible Urinal



Photo 5. Urinals at two levels

## 4.16 Water Points

- Taps to be at two levels- one at 300-400mm from the floor level and another at 800 mm height; and
- Leg and knee space to be provided with basin/shelf with drain, to avoid spilling of water.

## 4.17 Accessible Handpump

- The handpump apron should be connected with the approach road/ pathways;
- The top surface should have a rough texture;
- The platform should be minimum 1500mm x 1500mm;
- Water collection point of 300mm x 300mm directly underneath the mouth of the handpump;
- Ensure good drainage away from collection point under pump to ensure platform does not become slippery; and
- Sitting arrangement is required and is useful for those who have difficulty in standing while operating handpump, bathing or washing.



Photo 6. Accessibility adaptations for hand pump and washing area

## 4.18 Bathing Cubicles

- It is preferred to have single cubicle for toilet and bathing area. It is easier and convenient for wheelchair users to undertake all activities without commuting from one cubicle to another and use water points;
- For a level area incorporating WC and hand washbasin, the minimum internal dimensions are 2300mm x 2400mm, preferred- 2500mm x 2500mm;

- Where only a shower is provided, the minimum internal dimensions are 1800 mm x 2350 mm;
- There should not be any level difference at the entrance. Flooring should have gentle slope towards drain point to allow water flow towards it;
- There should be segregation between the wet area (shower) and the dry area (WC) in this cubicle;
- Shower doors should preferably be of a sliding or outward opening type;
- Should have seats at height of 450 mm-480 mm from the floor level with 900mm clear space on the side and 1200mm space in the front for wheel chair transfers;
- Should have grab rails at a height 700 mm-800 mm that allow for easy gripping;
- Bathing cubicle doors locks, or catches should be of type that can be opened from the outside in an emergency; and
- A telephone/hand shower system is preferred to fixed wall shower.

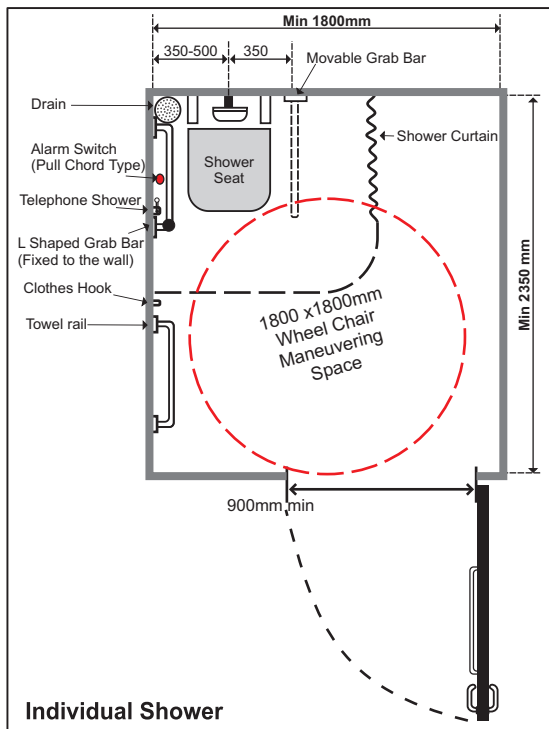


Figure 22. Individual bathroom with roll in shower

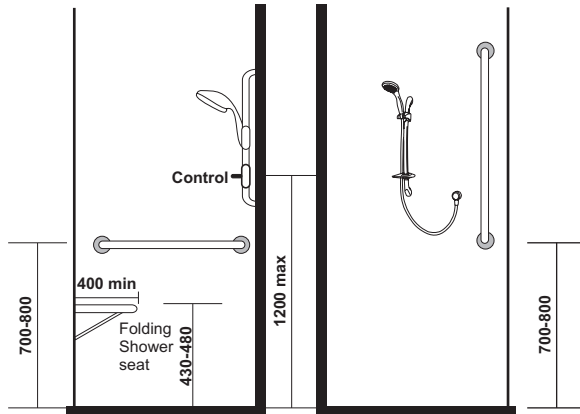


Figure 23 Shower fittings

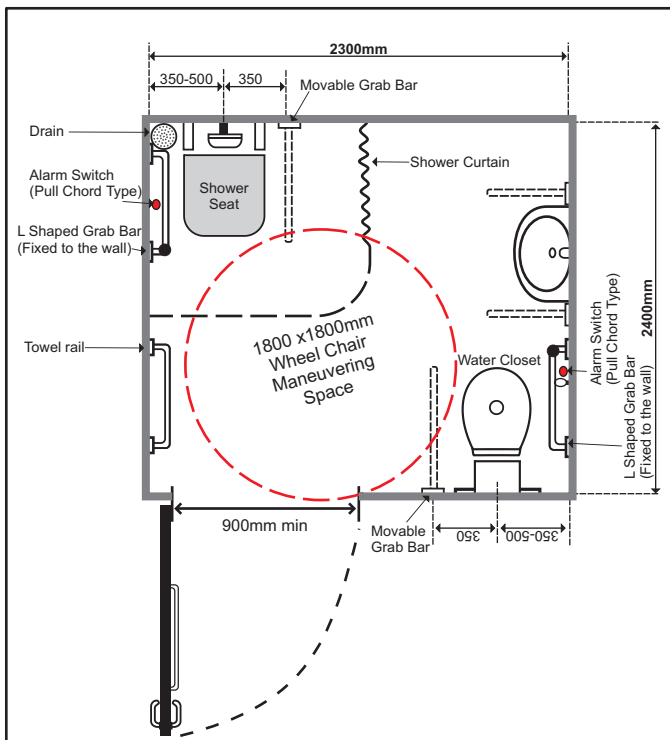


Figure 24. Toilet cum bathroom facility



## 5. Child Friendly Facilities (Schools and Community Toilets)



## 5. Child Friendly Facilities (Schools & Community Toilets)

Lack of accessible school toilets deters children with disabilities (also called children with special needs-CWSN) from admission, retention and continuing education in schools. An accessible toilet support change in attitudes and encourage children with disabilities to get education at par with others. Similarly, provision of accessible facilities is must in community toilets for children with disabilities.

Accessible toilets essentially should have access elements and standards mentioned in Chapter -4: section 4.12. Additionally, details of door hardware and other amenities are given comprehensively in this section. Some figures (figure 27-36) are adapted from 'An Inclusive Approach for School, Sanitation and Hygiene Education, 2012' to suit the diverse access needs of children with disabilities.

### 5.1 Outside the Toilet (Door)

#### 5.1.1 Outside the Accessible Toilet

Outside the toilet provide signage, door handles at two levels, door with gap of 75 mm from the floor level, jalli on door shutter for visibility and to avoid accident while opening the door. Door should comply with section 4.5 and 4.6.

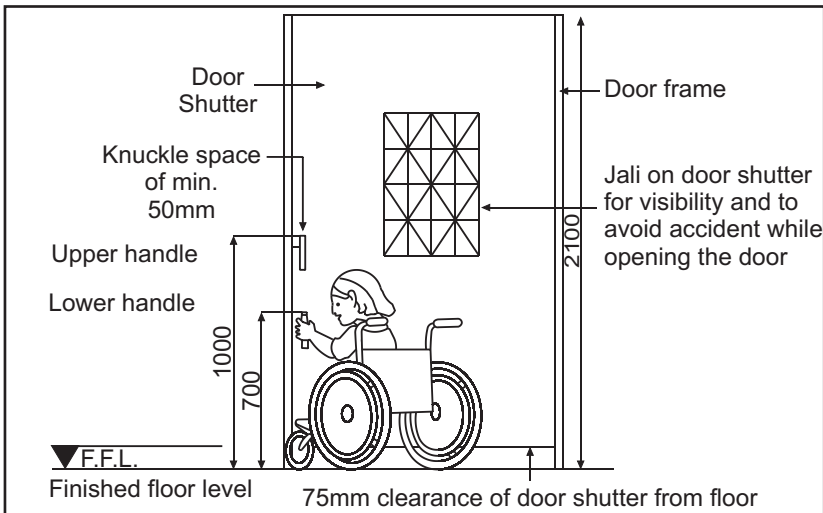


Figure 25 Wheelchair accessible door hardware (outside toilet)

### 5.1.2 Outside the General Toilet

In case of general toilets, the door width may be lesser (760mm preferred), while the door hardware and other elements can remain similar as provided in the accessible toilets. The average height of door handle, latch, etc. should be between 700 to 1000 mm. It is preferred to have handles at two levels. However, a single longer handle or a vertical grab bar can also be provided.

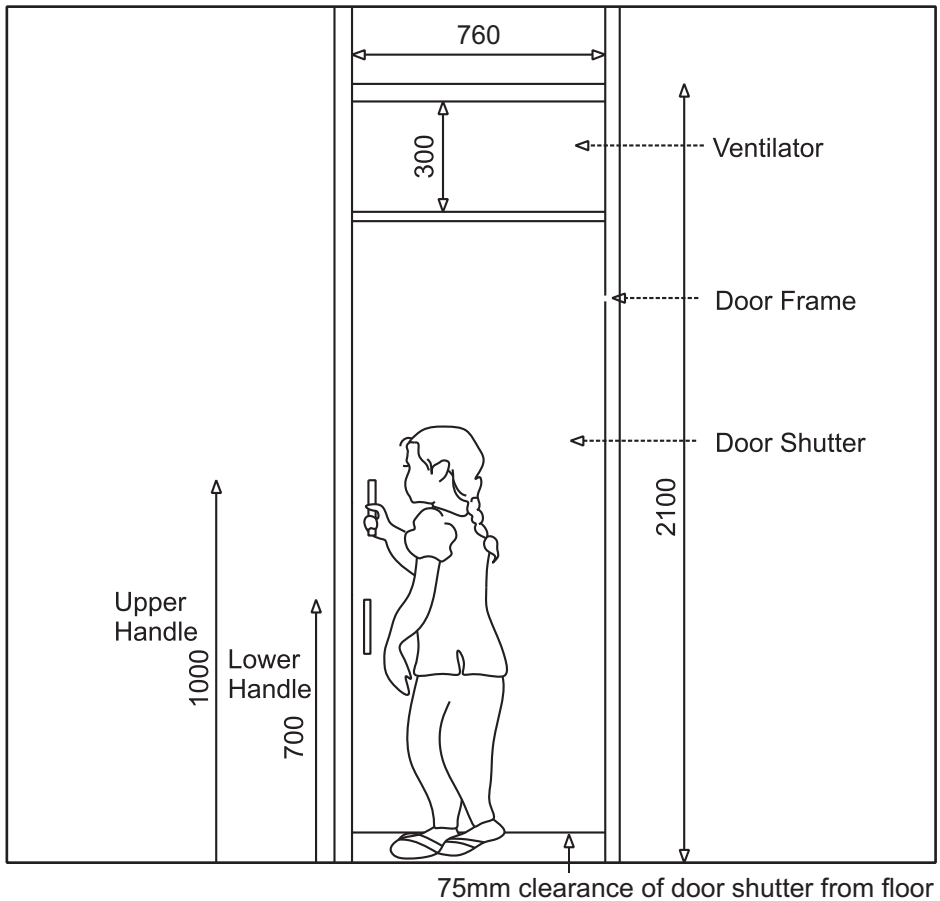


Figure 26. General door hardware (outside toilet)

## 5.2 Inside the Toilet (Door)

### 5.2.1 Accessible Toilet

Door handles at two levels between 700-1000 mm, latch at 400 and 800 mm and hooks at multiple heights (500, 700, 1000 mm from the floor), benefits both children and adults with disabilities. The door may have clearance of 75 mm minimum from floor, which protects doors from dampness, rust and dust.

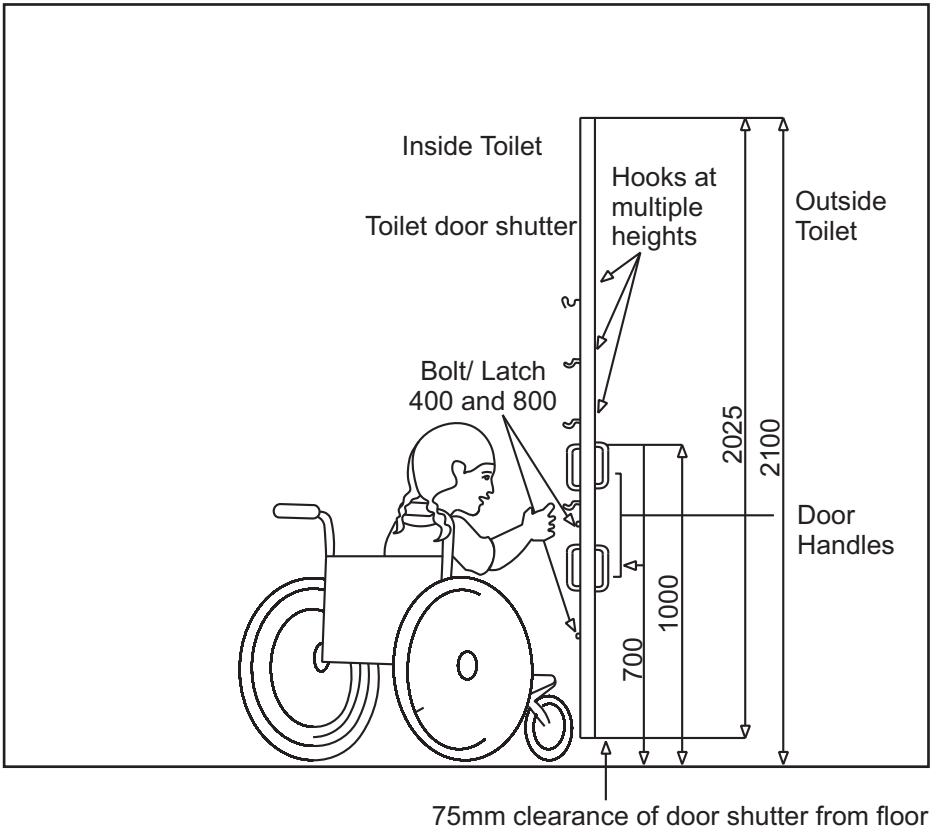


Figure 27. Wheelchair accessible door hardware (inside toilet)

### 5.2.2 General Toilet

The doors for boys and girls toilet should have hooks at different heights to hang bag, clothes, etc. (at heights 1100, 1300, 1500 mm from the floor). The handles and securing bolts should be between 760 to 1000 mm. Handles at two levels benefit children and adults. However, a single longer handle or a vertical grab bar can also be provided.

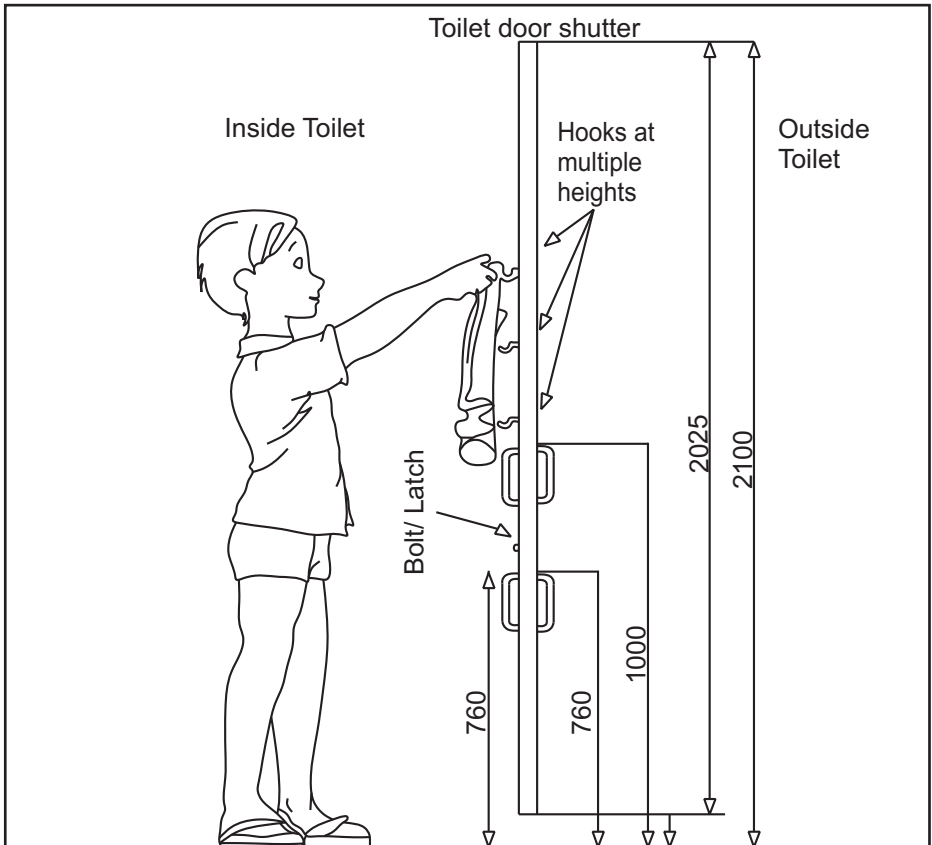


Figure 28. General door hardware (inside toilet)

*Adapted and modified from:  
School Sanitation and Hygiene Education, 2012*

## 5.3 Incinerator

Toilets designs for girls needs special attention and detailing of elements in both accessible and general toilets. There must be a cubby hole/shelf in the toilets to keep new sanitary napkins. Alternatively, sanitary dispenser machine can also be provided. The location of incinerator can be adapted to suit different site situations.

### 5.3.1 Incinerator in Accessible Toilet

In an accessible toilet, provision of incinerator should be near the WC at a height of 700 mm, which allows girls with disabilities make use of it while sitting on the WC. This should align with the L-shape grab bar, however, should not obstruct free hand movement of the user. Alternatively, it can also be provided near the washbasin (Figure 31).

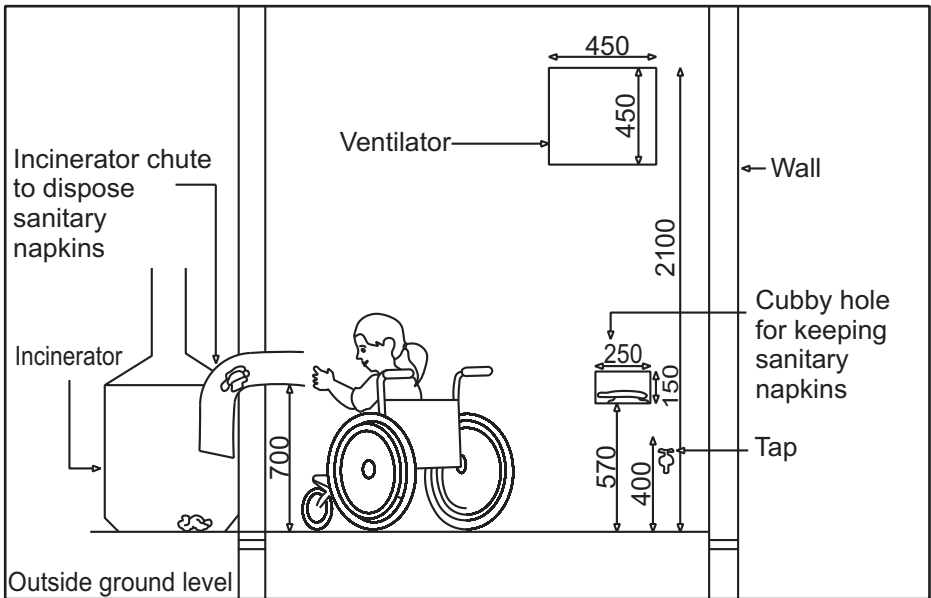


Figure 29. Location of incinerator in accessible toilet

### 5.3.2 Incinerator in General Girls Toilet

There must be a connection to an external incinerator for sanitary napkins, chute provided at height of 700 mm from finished floor level in general girl's toilet.

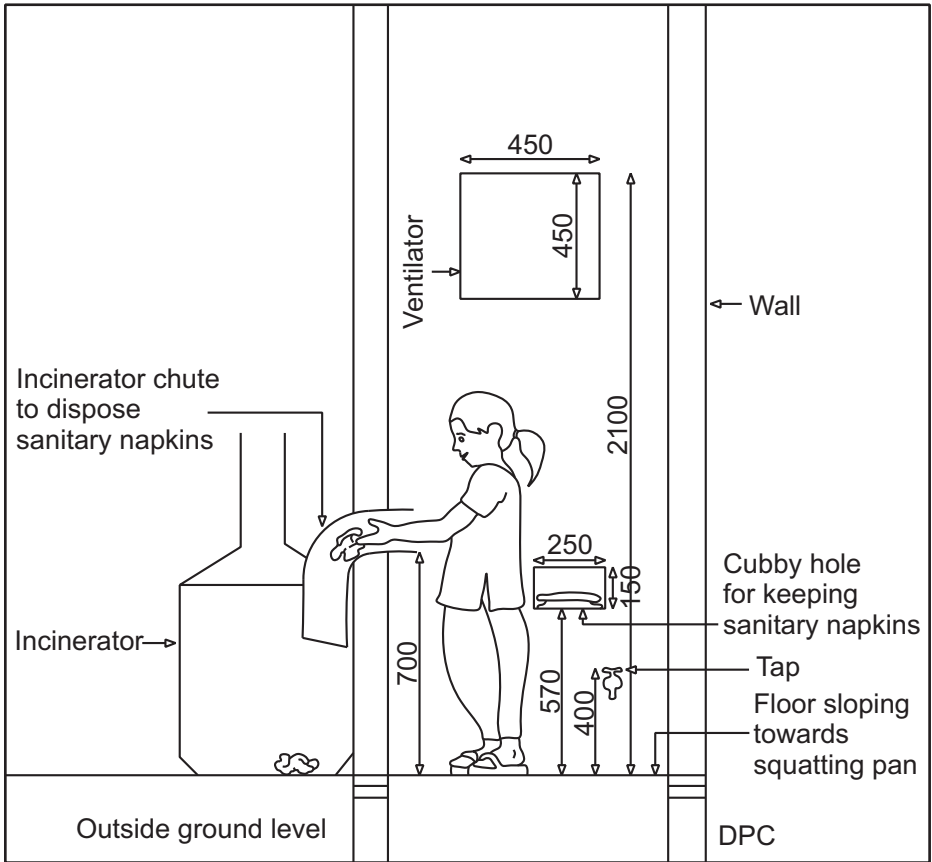


Figure 30. Location of incinerator in general toilet

## 5.4 Washbasin

Washbasin in accessible toilet should provide for knee and toe clearance for wheelchair users. Refer Section 4.13.1

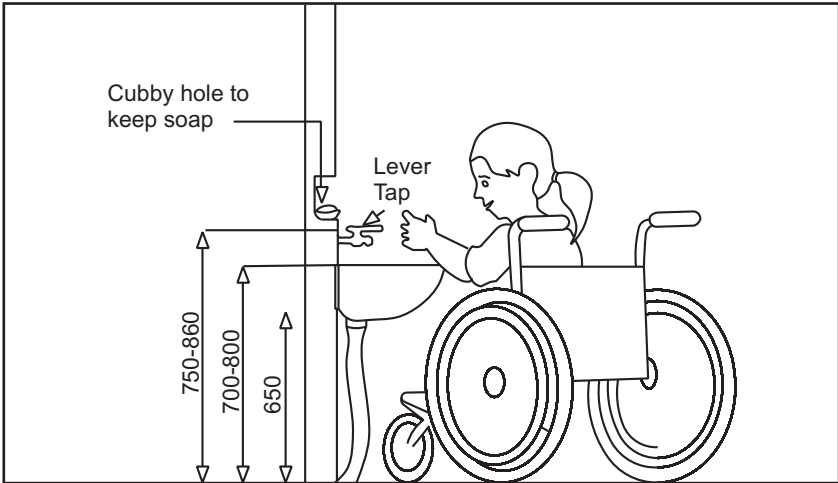


Figure 31. Washbasin inside accessible toilet

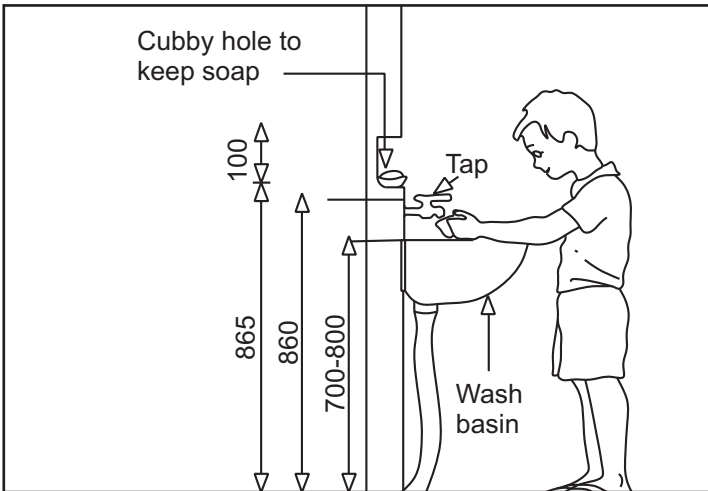


Figure 32. Washbasin outside general toilet



A cubby hole to keep the soap should be provided at height of 865 mm. Ideally, washbasins at two levels in general toilets are proposed, which helps children of different age groups.

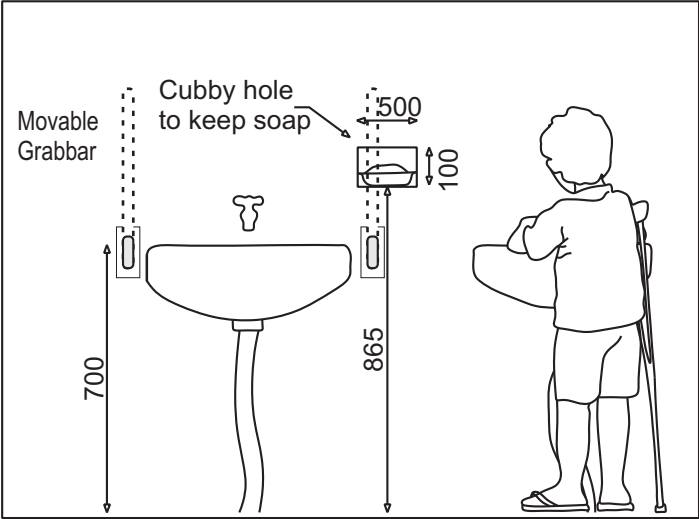


Figure 33. Washbasin accessories (front view)

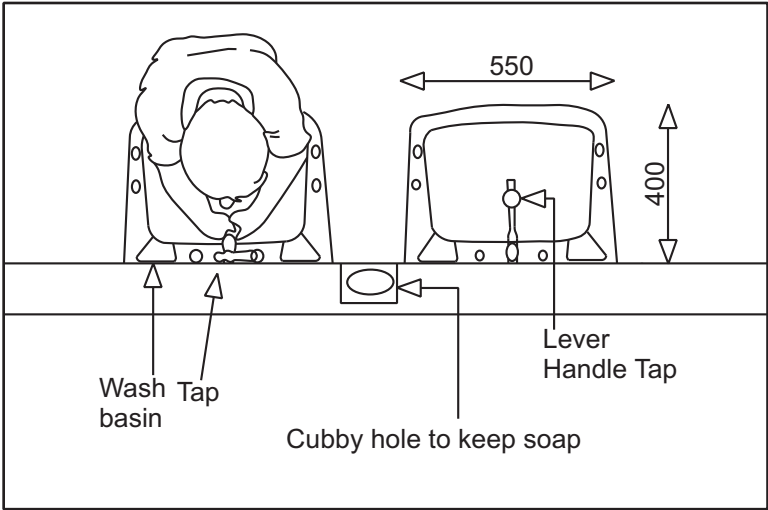


Figure 34. Washbasin accessories -Plan

## 5.5 Types of Independent Wheelchair Transfers

There are typically three types of independent wheelchair transfers practiced by wheelchair users, viz. front, parallel and diagonal. The plans in options I-V provide placement of toilet accessories for use in different transfers and alternative location of both door and toilet seats. The door location in an accessible toilet cubicle should preferably be diagonally opposite to the commode.

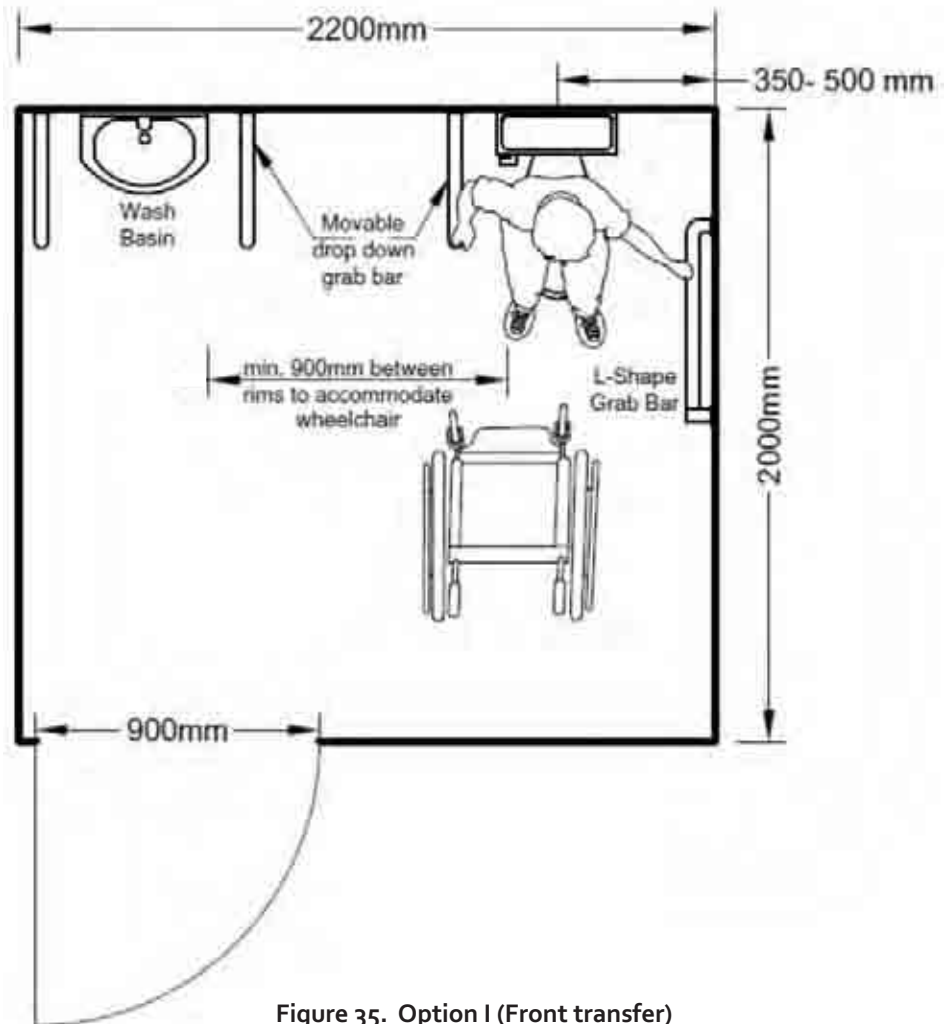


Figure 35. Option I (Front transfer)

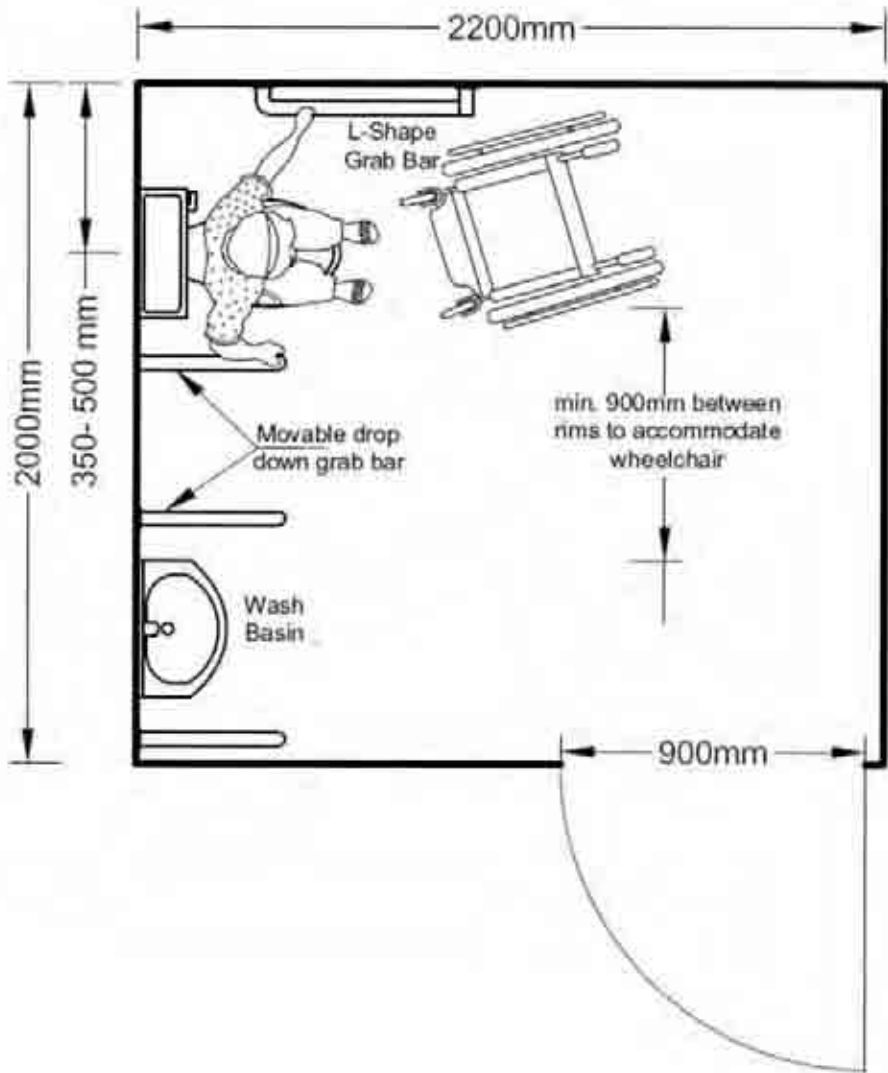


Figure 36. Option II (Diagonal transfer)

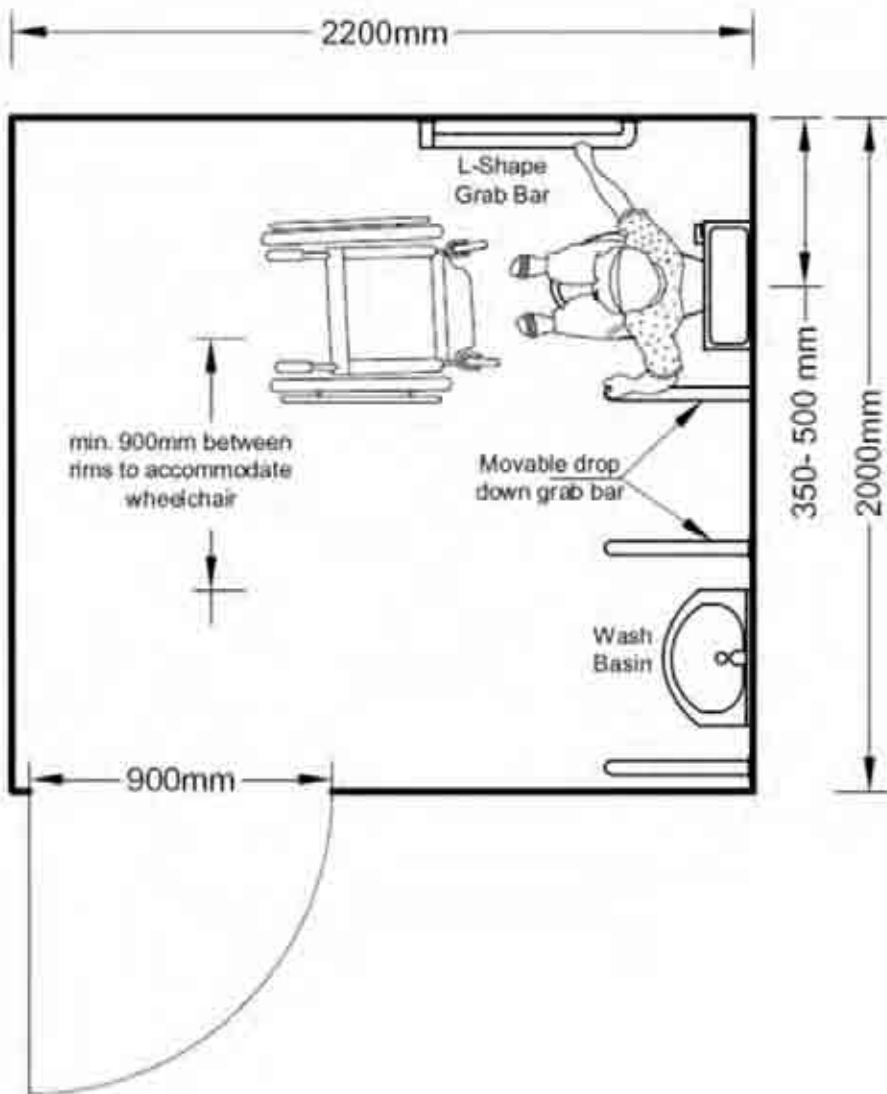


Figure 37. Option III (Front transfer)

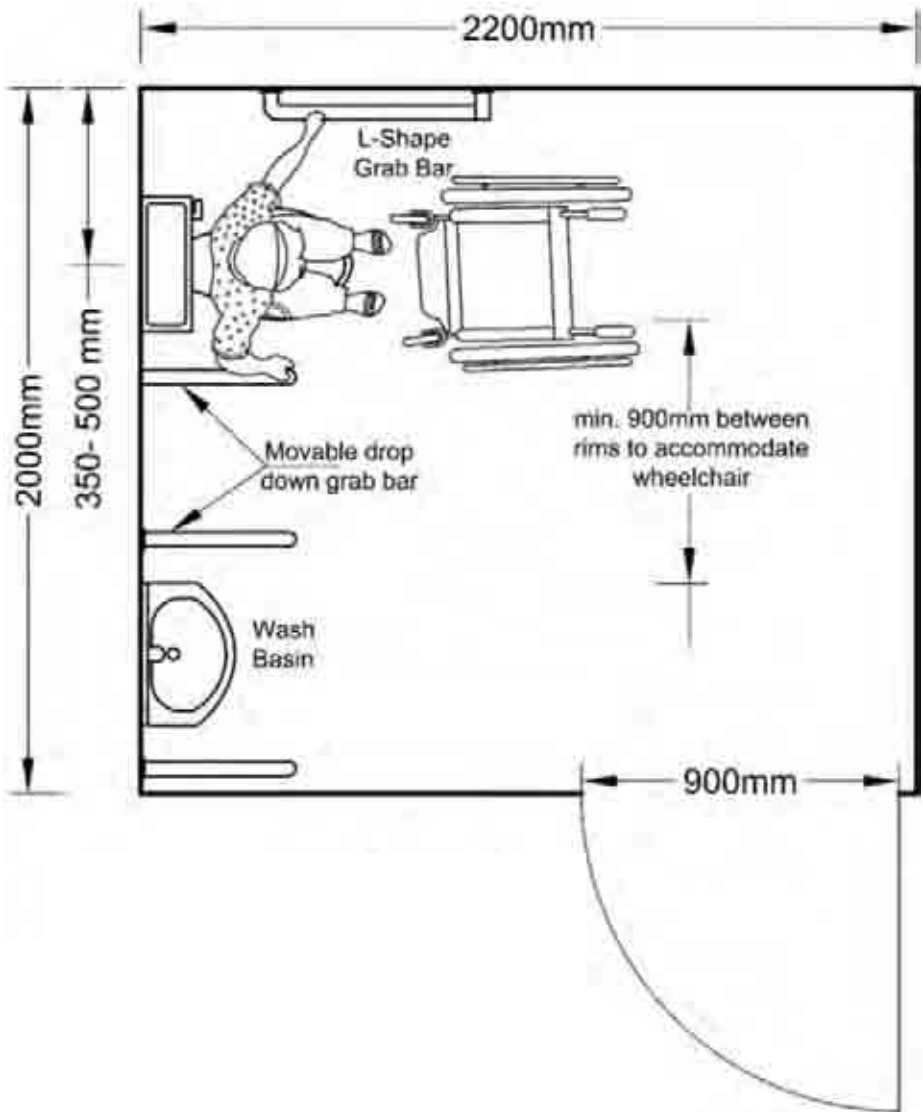


Figure 38. Option IV (Front transfer)

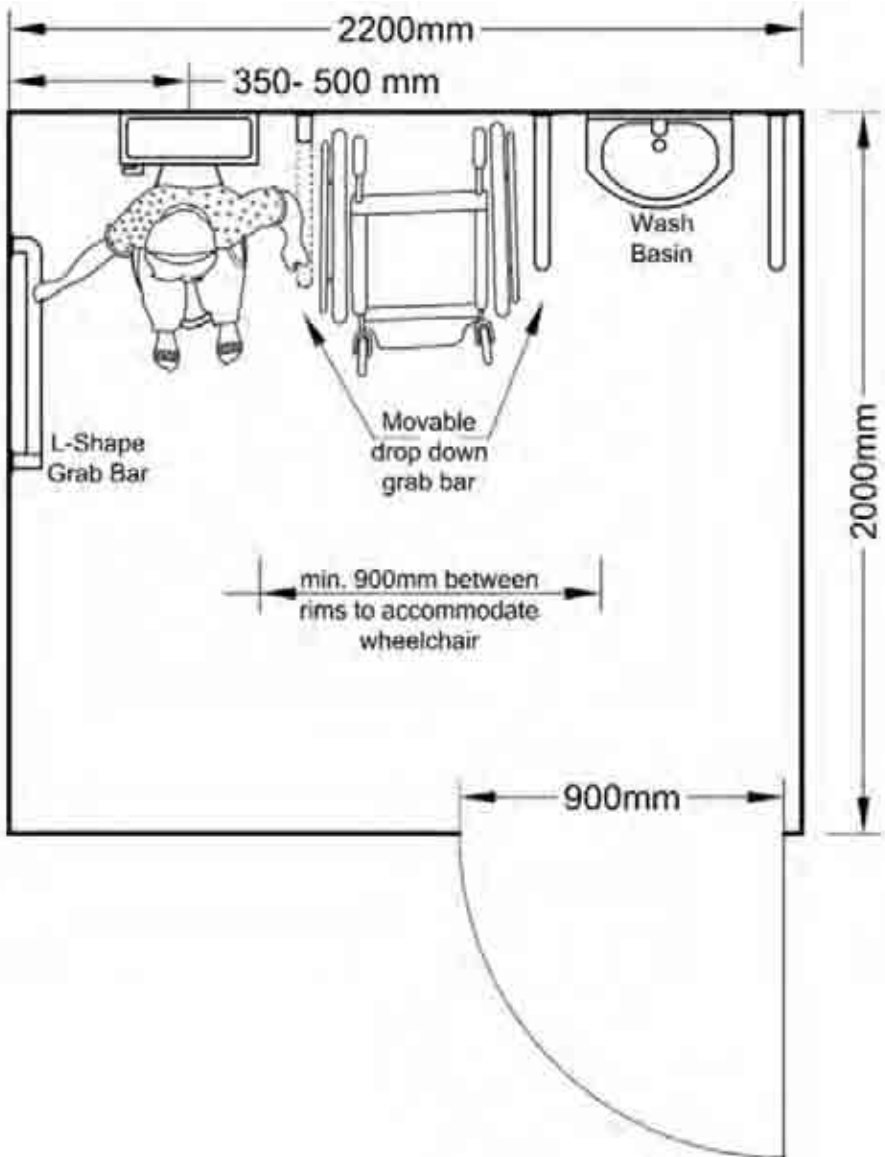


Figure 39. Option V (Parallel transfer)

## 5.6 Drinking Water

Taps and sinks integrated with wall at multiple heights are convenient to different age group children.

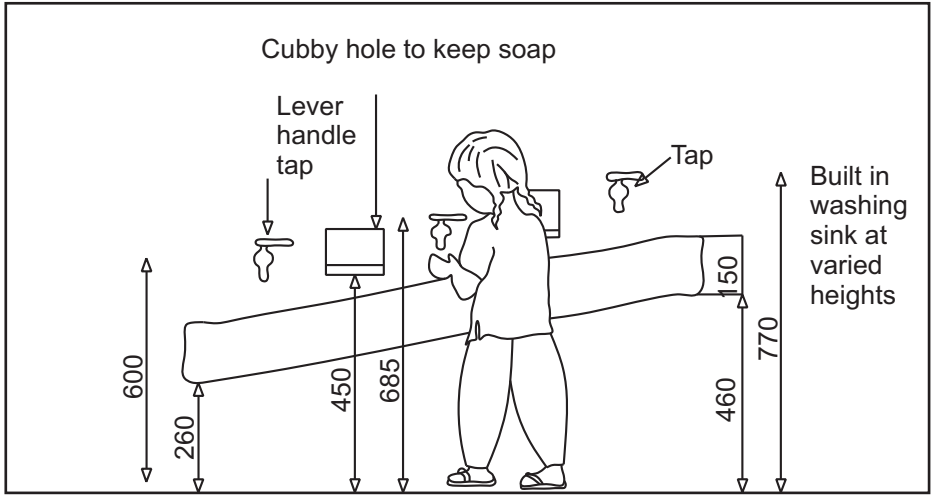


Figure 40 Drinking water at multiple levels (Option I)

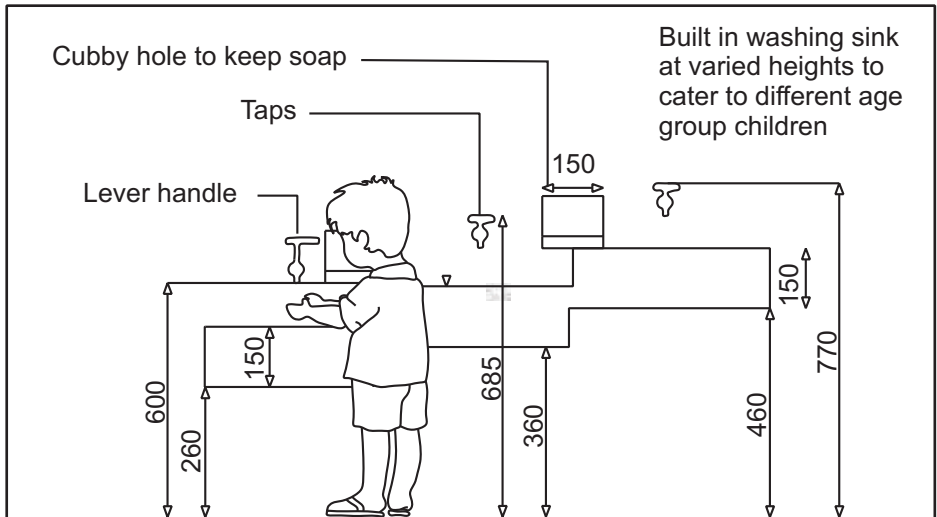


Figure 41. Drinking water at multiple levels (Option II)

# 6. Cost- Effective Adaptations with Indigenous Materials





## 6. Cost-Effective Adaptations with Indigenous Materials

Planning for a barrier free WASH facilities and use of cost-effective indigenous material is essential (Agarwal & Sachdeva, Training Manual to Promote Barrier Free Environment, 2008). Though the norms and the standards for the rural and urban areas remain broadly the same, however, considerations have to be made in terms of life style, cultural norms and local material, etc.

While several basic amenities such as piped water supply, sanitation, toilets and sewage lines are available in urban built environment; however, the rural built environment includes standpipes, pits and wells.

Some design adaptations are given in this section, which are being used by persons with diverse disabilities in schools, community toilets, households and temporary/permanent shelter homes.



Photo 7. Adaptation of grab bars in accessible toilet

## 6.1 Adaptations

- **Grab bars**- wood, bamboo, GI pipe of 38-45 mm outer diameter can be used.
- **High toilet seat**- readymade European commode seats are the best for accessible toilets. Low cost adaptations such as cut out in wooden/ plastic chair having backrest and armrests can be used in individual household. Also, adaptations as shown below are common in individual toilet cum bathroom, which can be used by other family members also (Figure 44).

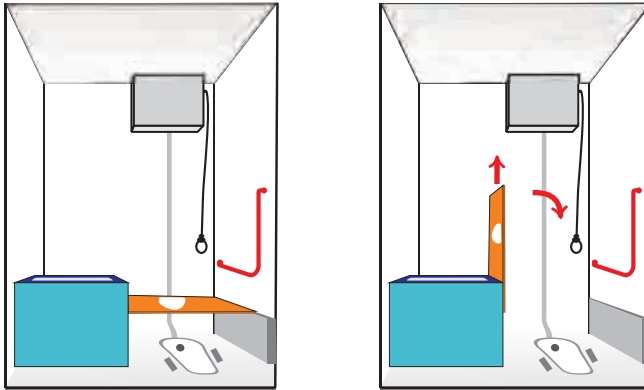


Figure 42. Adaptation in squatting seat

Source: Handicap International

In shelters/ home (pre and post disaster), where there is limited availability of water, a storage drum with inlet pipe is advisable next to the shower/toilet seat.

- 1.Privacy screen;
- 2.Low height chair;
- 3.Water basin within reach of seated user; and
- 4.Water/ hose pipe collecting water from bigger container for ease of availability.



Photo 8. Adaptations for shower area in emergencies

Source: WATSAN, Sri Lanka

## 6.2 Adaptations in Rural Areas/ Shelters/ Individual Household



Adaptations in toilets during emergencies and permanent shelters



Adaptations in household toilets and handpump

Source: WATSAN, Sri Lanka and Bangladesh;  
Gram Jyoti, WaterAid India;  
Compendium of accessible WASH technologies

# 7. Checklist



## 7. Checklist

1. MAIN ENTRANCE	YES	NO	REMARKS
* Is the main entrance of the building accessible?			
* Are there any steps at the entrance?			
* Do the steps have handrails?			
* Are there handrails on both the sides?			
* Is there a ramp?			
* Does the ramp have handrails?			
* Are there handrails on both the sides?			
* Is the clear door width at least 900mm?			
* Can the entrance door be operated independently?			
* Is the height of the door handle between 800mm and 1000mm?			
* Is the accessible entrance clearly identifiable?			
* Is the landing surface non-slippery?			
2. DOORS	YES	NO	REMARKS
* For double leaf doors, is the width of one of the leaves at least 900mm?			
* Do doors fitted with spring closers have an extra pull handle?			
* Is manual door accessories/hardware (handles, locks, pull etc.) located no higher than 800mm-1000mm?			
* Are doormats flush with the floor surface and secured to the floor at all edges?			
* Is the threshold, no more than 10mm high and beveled?			

3. CORRIDORS	YES	NO	REMARKS
* Is the minimum unobstructed width of corridors at least 1200mm?			
* Does the corridor width allow maneuvering through doors located along its length?			
* Are differences in level, bridged by ramps?			
* Can a person with visual impairment detect all protruding objects with in the corridor?			
* Are all over hanging obstructions mounted above a minimum height of 2100mm?			
* Can a person with low vision, identify all obstacles in the corridor?			
4. STEPS/STAIRS	YES	NO	REMARKS
* State the location of the steps?			
* Is the minimum width of the stairs 1200mm?			
* Are there continuous handrails, on both sides, at a height between 760mm-900mm?			
* Is the handrail installed in the centre of the stair width more than 3 meters?			
* Is the landing length not less than 1200mm?			
* Do the stairs have a nosing?			
* Are the step edges of a different colour or texture easily identifiable by persons with low-vision?			
* Are there warning blocks installed at the beginning and end of all flights?			
* Is the location of emergency (fire escape) stairs clearly identifiable?			
* Is the height of the riser 150mm maximum & tread 300mm minimum?			

* Do treads have a non-slip surface?			
* Are the risers without gaps in the steps?			
<b>5. RAMPS</b>	<b>YES</b>	<b>NO</b>	<b>REMARKS</b>
* Is there a ramp next to the stairs?			
* Is the location of the ramp clearly identifiable?			
* Is there a overhead shed on long ramps?			
* Is the ramp gradient no steeper than 1:12?			
* Is there a landing (1500mm x 1500mm) at every change in direction?			
* Is there a landing at the top and bottom of every ramp?			
* Is the minimum width of the ramp 1200mm?			
* Are there continuous handrails, on both sides, at a height between 760mm-900mm?			
* Is the surface of the ramp non-slip?			
* Is there an edge protection on both sides of the ramp?			
<b>6. HANDRAILS</b>	<b>YES</b>	<b>NO</b>	<b>REMARKS</b>
* Are handrails mounted at two levels- at a height between 760mm and 900mm?			
* Are handrails easy to grip- outer diameter not more than 38-40mm?			
* Are handrails securely attached?			
* Do handrails extend horizontally - 300mm at the top and bottom of every staircase or ramp?			
* Are the end of the handrails grouted in the ground or turn downward?			
* Is the space between the handrails and the wall not less than 50mm?			

* Are the handrails painted in contrast colours for easy identification?			
* Are there tactile strip (Braille plate) identifications on the handrails for emergency stairs and floor levels?			
<b>7. TOILETS &amp; BATHROOMS</b>	<b>YES</b>	<b>NO</b>	<b>REMARKS</b>
* Are there accessible toilets with wide doors (900mm min.)?			
* Are the toilets easily identifiable?			
* Is there sufficient space inside the toilets to maneuver a wheelchair?			
* Do individual washrooms have clear dimensions between opposite walls of not less than 2200mm x 2000mm?			
* Are Water Closets (WC) mounted at a height between 450mm-480mm?			
* Is the washbasin mounted at a height of 700-800mm?			
* Is there a lowered urinal with chest support grab bar?			
* Is the lower edge of the mirror positioned at a height not exceeding 1000mm?			
* Are the accessible showers provided with a folding seat/ stool/bench?			
* Are all the grab bars installed near WC and showers?			
* Does grab bars have a diameter of 38-40mm?			
* Does grab bars have knuckle space 50mm?			
* Are grab bars non slippery?			
* Can the grab bars withstand the load?			
* Are faucets easy to grip and operate with one hand?			



* Are shower fixtures with at least 1500mm long hoses?			
* Are hot water pipes insulated or covered?			
* Is the toilet equipped with an emergency alarm system at 300mm and 900mm from the floor level?			
* Can doors be locked from inside and releasable from outside under emergency situations?			
* Are flushing arrangements, dispensers and toilet paper mounted between 500mm and 1000mm?			
* Are flushing equipments easy to operate?			
* Is the floor material skid proof, well drained and waterproof?			
* Do pivoted doors open outwards?			
<b>8. TOILETS IN EMERGENCY SITUATIONS</b>	<b>YES</b>	<b>NO</b>	<b>REMARKS</b>
* Are there accessible toilets provided for people with disabilities (pre and post disaster/ conflict situations)?			
* Is there provision for shower area inside/ near accessible toilet blocks?			
* Is there availability of water inside the toilet and shower area?			

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**Drop out girls from schools in Koraput district, Odisha, India**

Photo Source: Samarthyam

**Samarthyam advocates for “Universal Design”, which eliminates all attitudinal, physical, informational and environmental barriers and promotes inclusion and full participation of persons with disabilities**

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