

ACCESSIBILITY STANDARDS

A practical guide to create a barrier-free physical environment in Uganda



*Produced by Uganda National Action on Physical Disability (UNAPD)
in collaboration with the Ministry of Gender, Labour
and Social Development*

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First edition, 2010

Designed and printed by KOBE Entrante



FOREWORD

The Government of the Republic of Uganda developed a National Policy on Disability. The policy aims at promoting equal opportunities for enhanced empowerment, participation and protection of the rights of persons with disabilities irrespective of gender, age, or type of disability. This is in recognition that persons with disabilities can live to their full potential given the same conditions and opportunities. The policy among other things emphasises the need to have an accessible physical environment.

The Uganda Constitution and other legal legislations also provide for accessibility. Good accessibility is not only for persons with disabilities but also for elderly persons, the sick, pregnant women, and those carrying heavy loads.

Despite the efforts of the government to establish a conducive environment for participation of persons with disabilities in all spheres of life, they still face difficulties in terms of accessing the physical infrastructure.

Most buildings do not have facilities such as ramps, lifts, and so on. Some of the existing accessibility facilities are not designed according to the required Standards and as a result, persons with disabilities continue to face difficulties in accessing them.

It is for this reason, and in compliance with the UN Convention on the Rights of Persons with Disabilities that Uganda National Action on Physical Disability in collaboration with Ministry of Gender, Labour and Social Development developed these Accessibility Standards to promote better access for all people.

The development of these Accessibility Standards was done through a number of consultative meetings with different stakeholders including representatives from the line ministries, disabled people's organisations, persons with disabilities, architects, physical planners, building engineers and community development workers.

With the introduction of Accessibility Standards, those participating in the construction industry must observe the Standards in new constructions and as much as possible during reconstruction and renovation of existing structures. I call upon the designers of physical infrastructure to utilize them so as to ensure persons with disabilities equal access to the various services.



Sulaiman Kyebakoze Madada (MP)
Minister of State for Elderly and Disability Affairs

WORD FROM UNAPD CHAIRMAN

One of the biggest challenges faced by persons with physical disabilities is the in-accessible physical environment. It is a source of denial of rights and non-accessibility to services enjoyed by others. This contributes a lot towards unemployment, injustice, discrimination, low levels of literacy, exclusion, isolation, inadequate involvement in community activities, etc.

Uganda has a disability-friendly legal framework which guarantees the rights of persons with disabilities. Unfortunately, there is limited implementation of these laws. Among other things the laws provide for accessibility in the physical environment. One of the reasons why it has been difficult to implement the legal provisions on accessibility is the absence of Accessibility Standards. It is as a result of this realisation that UNAPD in collaboration with various stakeholders developed these Accessibility Standards.

The purpose of these standards is to guide architects, property developers, policy makers and implementers on the accessibility requirements in the physical environment during the design and implementation of construction projects.

The process of developing this document involved a number of key players without whose support and commitment UNAPD would not on its own have accomplished this great piece of work. We would like to acknowledge in particular the technical and financial support from Dansk Handicap Forbund (DHF) that made it possible to develop the Accessibility Standards for a barrier-free environment. We also acknowledge with thanks the technical input and financial contribution towards the production of this document by Survivor Corps Uganda.

We appreciate the technical work of developing the standards carried out by Rie Ollendorff (Accessibility Expert/Architect from Denmark) commissioned by DHF, assisted by Phyllis Kwesiga (a Ugandan Architect Consultant).

We would like to record special appreciation to Ministry of Gender, Labour and Social Development in particular the Department of Elderly and Disability for collaborating with UNAPD in the development of these Accessibility Standards. Their support greatly facilitated the process of developing the standards.

We also wish to express sincere gratitude to the Ministries of Health (Disability Section), Works, Transport and Communication (Commissioner for Building), and Education and Sports (Department of Construction Unit).

We acknowledge the technical input from stakeholders namely the Community Based Rehabilitation Alliance (COMBRA), National Union of the Disabled Persons of Uganda (NUDIPU), Legal Action for Persons with Disabilities (LAPD), Uganda Society of Architects, Spinal Cord Injury Association Uganda (SIA-U), Mulago Orthopedic Workshop and Uganda National Association of the Blind (UNAB).

In order to secure effective implementation, it is our desire that these Accessibility Standards should be appended to the proposed Building Control Bill. The standards would then be taken as a requirement for approval of construction projects and it would be easy for players in the construction industry to make reference to them when using the Building Control Act.

We call upon all stakeholders in the construction industry to play their part in making Uganda a barrier-free society by implementing these standards.

Hon. James Mwandha
Chairman UNAPD

TABLE OF CONTENTS

Foreword.....	i
Acknowledgement.....	ii
Acronyms.....	iv
Definition of Terms.....	v
Bibliography.....	vi
1.0 Introduction.....	1
2.0 Background.....	1
2.1 Existing Legal Framework.....	1
2.2 Accessibility Benefits Whole of Society.....	2
2.3 Accessibility to the Physical Environment.....	2
2.4 Beyond the Physical Environment.....	2
3.0 Development of the Manual.....	2
3.1 Purpose	2
3.2 Objectives	2
4.0 Target Group.....	2
4.1 People Affected by Accessibility Barriers.....	3
5.0 Guiding Principle: Trip Chain.....	3
6.0 Application of the Standards.....	3
7.0 Accessibility for Persons with Different Disabilities.....	4
7.5 Other Groups.....	6
8.0 Chapters	
8.1 Chapter One - Ramps	7
8.2 Chapter Two - Stairs	9
8.3 Chapter Three - Barrier-Free Entrance.....	11
8.4 Chapter Four - Doors	13
8.5 Chapter Five - Parking Space	15
8.6 Chapter Six - Toilets	17
8.7 Chapter Seven - Toilets & Showers	21
8.8 Chapter Eight - Latrine	25
8.9 Chapter Nine - Pathways/Corridors	30
8.10 Chapter Ten - Handles & Grips	32
8.11 Chapter Eleven - Public Operated Machines	34
8.12 Chapter Twelve - Boreholes	36
8.13 Chapter Thirteen- Wells	38
8.14 Chapter Fourteen- Lifts	40
8.15 Chapter Fifteen - Urban Roads	42
8.16 Chapter Sixteen - Public Furniture	44
8.17 Chapter Seventeen - Information	45

ACRONYMS

PWDs	:	Persons With Disabilities
WHO	:	World Health Organization
CBR	:	Community Based Rehabilitation
DPO	:	Disabled People's Organization
UNAPD	:	Uganda National Action on Physical Disability
UN	:	United Nations
ATM	:	Automated Teller Machine
NUDIPU	:	National Union of Disabled Persons of Uganda
UNAD	:	Uganda National Association for the Deaf
UNAB	:	Uganda National Association for the Blind
LAPD	:	Legal Action for Persons with Disabilities Uganda
COMBRA	:	Community Based Rehabilitation Alliance
MP	:	Member of Parliament
SIA-U	:	Spinal Cord Injury Association- Uganda

DEFINITIONS OF TERMS

Assessment:

Assessment in this document refers to a pattern of analysing and investigating the extent of compliance between the physical aspects of a structure or a service, and the requirements that must be fulfilled to make them accessible to persons with disabilities.

Accessibility

The possibility to reach a place and maneuver within it; use a service, receive information; participate in activities provided in a public place; all these on an equal basis with others, with dignity, independence and safety.

Barrier Free Environment

An environment that enables accessibility as defined above.

Physical Environment:

Infrastructure and features in various areas in society such as housing, buildings, streets and other outdoor environments/facilities

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1.0 INTRODUCTION

Uganda is among the few countries in Africa that have taken affirmative action in favour of marginalised groups at a higher level with a focus on persons with disabilities. These efforts have resulted in laws and policies promoting equality, inclusion and participation of persons with disabilities in society. However, advocacy, implementation and supervision of disability programmes are severely lacking.

Accessibility is one of the key elements addressed in these policies and laws. Due to limited enforcement of disability laws, absence of National Accessibility Standards and lack of knowledge about the rights of persons with disabilities, laws and policies on accessibility have been largely overlooked.

2.0 BACKGROUND

The environment in Uganda is not barrier-free. It does not allow easy and safe movement, function or access for all, regardless of age, sex or condition. Access by all to physical space and to services is not possible without obstacles, which leads to loss of dignity and independence.

The Ministry of Works, Transport and Communication (Building and Construction Inspection Report, August 2007) revealed that 95% of the buildings in Kampala, Mpigi and Wakiso Districts are not accessible.

A barrier-free environment enables an individual with or without a disability to access every service with dignity and independence. The major hurdle to a barrier-free environment is the lack of Standards on accessibility that can serve as a basis for improving accessibility in Uganda.

These Standards are aimed at addressing this hurdle. Their adoption and use will support implementation of laws, policies and regulations regarding accessibility.

2.1 Existing legal framework

The Standards were developed in line with existing Ugandan laws and policies on disability. In 2006, the Parliament of Uganda adopted the Persons with Disability Act. Part IV of the Act requires that constructors of public places and operators of public services ensure that places and services are accessible to persons with disabilities.

The National Council for Disability Act (2003) and Equal Opportunities Commission Act (2008) also include provisions on accessibility.

The National Policy on Disability in Uganda (2006) was developed by the Ministry of Gender, Labour and Social Development. One of the major priorities of this policy is making facilities and infrastructure accessible to persons with disabilities.

In September 2008, Uganda ratified the UN Convention on the Rights of Persons with Disabilities (CRPD). Article 9 of the CRPD requires all States Parties to take measures to ensure that facilities and services are accessible to persons with disabilities.

Though Uganda is a State Party to the CRPD and domestic laws and policies regarding accessibility exist, the foundation for accessibility is weak. It will remain so until uniform Standards to which laws and policies on accessibility can refer and by which accessibility can be measured are in place.

We hereby provide uniform Standards which will guide policy makers and implementers on how to ensure accessibility to persons with disabilities.

2.2. Accessibility benefits all of society

An accessible barrier-free environment enables individuals with or without disability to access every public place and service with dignity and independence. It creates equal opportunities not only for persons with disabilities but for all persons in society.

Every person at some stage in life faces barriers as a result of how society has structured the physical space, services, and exchange of information and communication.

2.3. Accessibility to the physical environment

Various components must be addressed in order to ensure access to the physical environment. Contrary to popular beliefs, much more is required beyond a ramp and an elevator to make a barrier-free environment. Other components that must be addressed include door and passage width, floor surfaces, counter heights, door handles, signage, auditory signals, and tactile guides.

These are aspects that are addressed in these Standards.

2.4. Beyond the physical environment: Accessibility to services, information and communication.

Accessibility entails understanding its relation to areas of life beyond just the physical environment. Areas that are often overlooked are access to services, information and communication which are an integral part of making a barrier-free society and address the accessibility needs of persons with sensory, intellectual and psychosocial disabilities as well. These aspects should be addressed in a set of complementary Standards.

3.0 DEVELOPMENT OF THE STANDARDS

The process involved in creating these Standards has benefited from extensive consultations with a wide range of stakeholders, line ministries and literature in the field of accessibility and disability.

The process also involved an in-depth review and analysis of the existing literature related to accessibility, laws and policies on disability. Using these publications as a framework and following other consultations and field visits, UNAPD developed a classification scheme and then established the core content.

The Accessibility Standards set accessibility requirements that apply to the physical environment.

3.1 Purpose

The goal of the Accessibility Standards is to contribute to improving equal access for persons with disabilities, in order to enable them to live independently and participate fully in all aspects of life.

3.2 Objectives

- To provide a blueprint for creating an accessible physical environment.
- To provide a tool for measurement and auditing of accessibility of the environment.

4.0 TARGET GROUP

The Standards are intended for use by a variety of stakeholders, including those that:

- Develop laws, policies and regulations e.g Parliament and line ministries.
- Build and implement changes in the physical

environment such as architects, contractors, engineers.

- Own or operate public infrastructure or services.
- Monitor the implementation and assess the level of accessibility of the physical environment such as accessibility audit teams, civil society organisations and advocates for the rights of persons with disabilities.

4.1. People affected by accessibility barriers:

- People who use wheelchairs
- People with limited walking/movement abilities
- People with visual impairment or low vision
- People with hearing impairment
- People with intellectual disabilities
- People with psychosocial disabilities
- Elderly persons
- Pregnant women
- People with temporary disabilities
- People carrying heavy or cumbersome luggage
- Etc.

5.0 GUIDING PRINCIPLE: Trip Chain

An important concept in these Standards is the “Trip Chain”. A typical Trip Chain is the sum of all parts of movement from one place to another which must be accessible in order to ensure a barrier-free environment. For example, to be able to go from home to a workplace a person must be able to:

- Exit the home to a sidewalk or pathway.
- Enter a vehicle.
- Alight from the vehicle to a sidewalk or a pathway near the workplace.
- Reach the entrance of the building.
- Enter the building.
- Maneuver within the building.
- Enter the office or specific place in the building.
- Reach the work station.

It takes only one inaccessible link in the Trip Chain to make the journey impossible. Therefore, each link must be considered and improved upon to foster a barrier-free environment. These Standards aim to provide clear and concise guidance to guarantee an accessible Trip Chain.

6.0. APPLICATION OF STANDARDS

The Standards are to be applied during the design, construction and alteration of buildings and facilities.

A variety of stakeholders involved in the planning and implementation of accessibility will find these Standards useful.

The following are examples of different ways to apply the Standards:

(i) Establishing and deploying Accessibility Audit Teams

The Standards can be used by auditors on the ground to assess the compatibility of infrastructure with basic accessibility requirements.

The process of auditing involves convening an accessibility audit team, i.e. a team composed of at least two professionals with knowledge on disability and accessibility to the physical environment.

The Standards include an auditing tool in the form of a checklist to be used by the audit team to determine whether the facility conforms to the outlined accessibility requirements.

The tool is used to review the drawings for the different parts of the physical structure, such as entrances, latrine, and ramps as against the set requirements.

A report written by the audit team that conducted the audit and analyses the state of accessibility of the facility in relation to the requirements set in the Standards. The audit team recommends structural adjustments if the building is found not accessibility compliant

The audit team is also responsible for periodic monitoring of the implementation of the proposed adjustments.

A certificate is issued by the auditing team to the management of the building or facility, certifying that their building meets the accessibility requirements.

(ii) Engaging policy makers

It is important to engage policy makers and implementers in the field of accessibility like line ministries that directly influence accessibility. For example, the Ministry of Lands, Housing

and Urban Development will be approached and familiarised with the Standards to be able to use them. They can then refer to the Standards when drafting policies, regulations, guidelines and programmes.

(iii) Engaging architects and engineers

Civil engineers, architects and contractors will be oriented and familiarized with the accessibility needs of persons with disabilities and how to utilise the Standards in their plans in order to ensure that all structures are built in an accessible manner.

(iv) Use by advocacy organisations

Advocacy organisations will be encouraged to use the Standards when campaigning for the incorporation of accessibility needs in laws, policies, programmes and services.

(v) Use by service providers

Various service providers will apply the Standards in accordance with their areas of operation and responsibility. For example, hotel managers will refer to relevant chapters addressing different parts of the hotel such as toilets, ramps, and entrances, for making the necessary improvements.

7.0. ACCESSIBILITY FOR PERSONS WITH DIFFERENT DISABILITIES

The principal targets for these Standards are people with different disabilities. In order to harmonise between the accessibility needs of different groups, there is need to have a proper understanding of these needs which differ from one disability to another.

7.1. People who use wheelchairs and people with limited movements

Many accessibility requirements relate to dimensions and other aspects of wheelchairs. In order to achieve a complete turn with the wheelchair, it is necessary to provide an unobstructed circle with a minimum diameter of 1.50m.

Considerable energy is required to propel a wheelchair manually up ramps, over changes in level and over soft or uneven surfaces. Therefore the Standards address those aspects in particular.

Resistance between the floor and the wheelchair wheels depends on the floor surface of the

pathway - whether it is even or uneven, firm or loose. Changes in level should be avoided and the floor surface should be hard, even and slip-resistant.

People with movement difficulties may use crutches or sticks. Special attention must be paid to avoid broken, rough or sloping floor surface and surfaces that become particularly slippery after rainfall, such as wood covering, granite, hard burnt bricks, gravel and murram.

The following aspects are important to enable independent movement for people using wheelchairs and other assistive devices:

- Changes in level should be avoided.
- Floor surfaces should be hard, even and slip-resistant.
- Rails should be provided on stairs and ramps.
- Ramps should have resting places and be of low slope along travel routes.
- Pathways should be of limited slope and include sufficient turning radius.
- Doors should be light and easy to turn, and entrances should be sufficiently wide.
- Parking space should be close to the main entrance.
- Furniture, counters, equipment, power sockets, and plugs should be placed at suitable heights reachable by persons who use wheelchairs.
- Handrails should be easy to grasp.

7.2. Blind persons and persons with visual impairments

For blind persons and persons with visual impairments, orientation can be eased by the use of contrasting colours and changes in the texture of the floor material. This helps a blind person in identifying doors, stairs, steps, ramps and pedestrian crossings.

The path of travel should be easy to detect by a blind person using a long white cane. A guide strip with a contrasting floor texture running parallel to main pathway should be used for this purpose.

The use of protruding elements and low overhanging signs should be avoided in pathways.

Visual capability is different from one person to another and changes with age and disability. Lighting systems should be made to suit different needs and include the possibility of adjustments from low to strong light.

Winding staircases, vertical turning doors and side-hung doors should equally be avoided.

In order to provide a barrier-free environment for blind persons and persons with visual impairment, the physical surroundings should be arranged in a simple and logical way. Visual information should be accompanied by audible information, handrails should be available to grip when using stairs, and ramps, entrances, stairs, and information boards should be well lighted.

Blind persons are aided by tactile and auditory information. Therefore, written information should be made available in braille and visual information should be accompanied by audible information.

7.3. Deaf persons and persons with hearing impairments

People with hearing impairments may experience difficulty in distinguishing words and sounds in noisy environments. Therefore, rooms should be acoustically insulated.

Supplementary visual information should be provided for deaf persons and persons with hearing impairments, such as visual information at airports and bus stations, and alarms and bells in lifts.

7.4. People with learning or intellectual disabilities

Some people with learning or intellectual disabilities experience difficulties in understanding or interpreting information like signs, and in distinguishing between different colours or between left or right.

The following design elements will enable people experiencing these difficulties to physically access the built environment: simple design with clear and unambiguous sign postings; use of signs and notice boards with pictures and symbols; and separation of a mass of information into a number of signs that can be more easily read and understood than in one sign.

7.5. Other Groups

In addition to enabling access to persons with disabilities, the Standards also ensure access to other groups, such as elderly persons, pregnant women, people and children with temporary disabilities, and people carrying heavy or cumbersome luggage. In short, accessibility benefits all persons and the Standards ensure a barrier-free environment for all people.

Accessible Standard

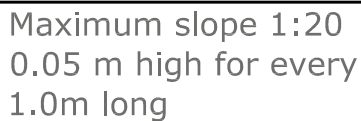


Fig. 1.1

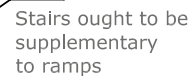


Fig. 1.2



Fig. 1.3



Fig. 1.4

Chapter 1

Ramps

Accessible Standard

(1.1) PLANNING PRINCIPLE

To provide ramps wherever stairs or changes in level obstruct the free passage of an individual, mainly wheelchair users and people with movement difficulties.

(1.2) LOCATION

The ramp should be located in the continuation of the accessible pathway leading to the entrance.

The level difference from the horizontal landing area to the surrounding area should be aligned by a ramp to ease movement.

(1.3) SLOPE

The maximum recommended slope of ramps is 1:20 (5 cm pr. m) (See fig. 1.3). For small level differences and very short ramps of about 1 meter, the maximum slope of such a ramp should be 1:10 (10 cm pr. m).

Gentle slopes should be carried out, if it is on a slanting land leading to the entrance. In this case the maximum slope should be 1:25 (4 cm pr. m) and handrails may not be needed (See fig. 1.4).

Stairs should be constructed adjacent to the ramps because some persons with disabilities prefer to use the stairs rather than ramps depending on their ability (See Chapter : Stairs).

(1.4) WIDTH

The minimum width of a ramp should be 1.3m and preferably 1.5m, which makes it possible for a wheelchair user and a walking person to pass each other at the same time.

(1.5) LANDING AREA

Ramps should be provided with landing areas (flat surface) for resting, maneuvering and avoiding excessive speed (See fig.1.2).

The minimum length of the landing area is 1.3m and preferably 1.5m and the minimum width has to be equal to the width of the ramp (1.3m) and preferably 1.5m.

Landings should be provided at every 10m, at every change of direction and at the top and bottom of the ramp.

(1.6) HANDRAILS

There should be handrails on both sides of the ramps to avoid risks of fall. If one of the sides is a wall, it is not necessary to put up a handrail on this side.

Double handrails at different heights where one at a height of 0.60m – 0.70m from the ground level for the use of the children and wheelchair users, one at a height of 0.80m - 0.90m for the use of other users.

At the bottom of the railing, rails for the wheels must be placed at a height of 0.15 – 0.20m to avoid risks of wheels fall out of the ramp edge.

For ramps more than 3.0m wide, there should be sides and intermediate handrails and painted in contrasting colours.

The handrails should end 0.3m from the top and at the bottom of the ramp (See fig. 1.1).

Handrail should be made of preferably metal or any other approved strong and sturdy material.

The handrail surface should be neither too smooth nor rough.

(1.7) SURFACE

The ramp surface should be hard and non-slip.

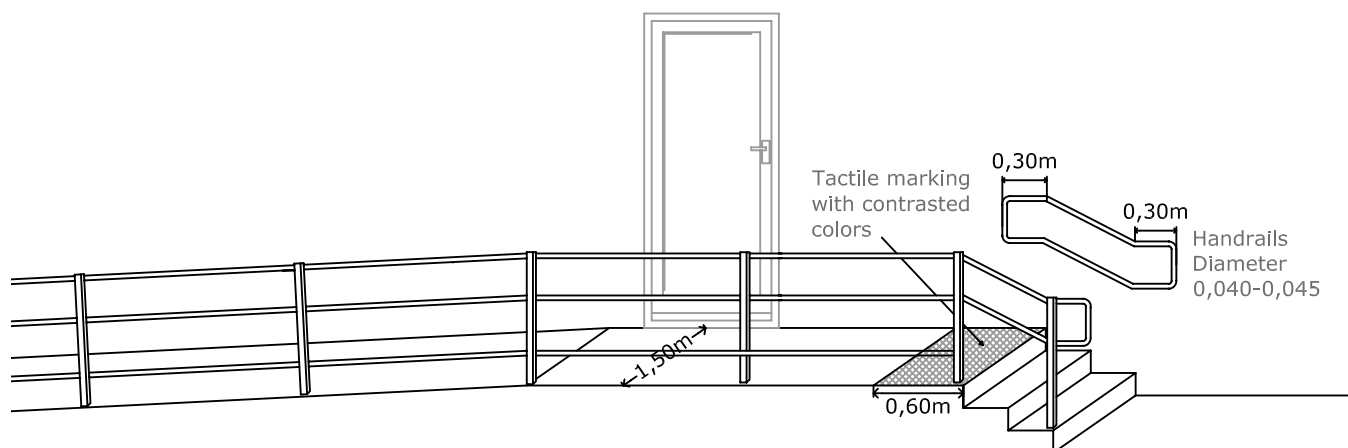
(1.8) TACTILE MARKING

A tactile marking with contrasted colours should be placed at the beginning and end of the ramp to alert the blind person and persons with visual impairment about the length and width of the ramp. Width of the marking should be 0.60m

Chapter 2

Stairs

Accessible Standard



Stairs must always be supplementary with ramps

Fig. 2.1

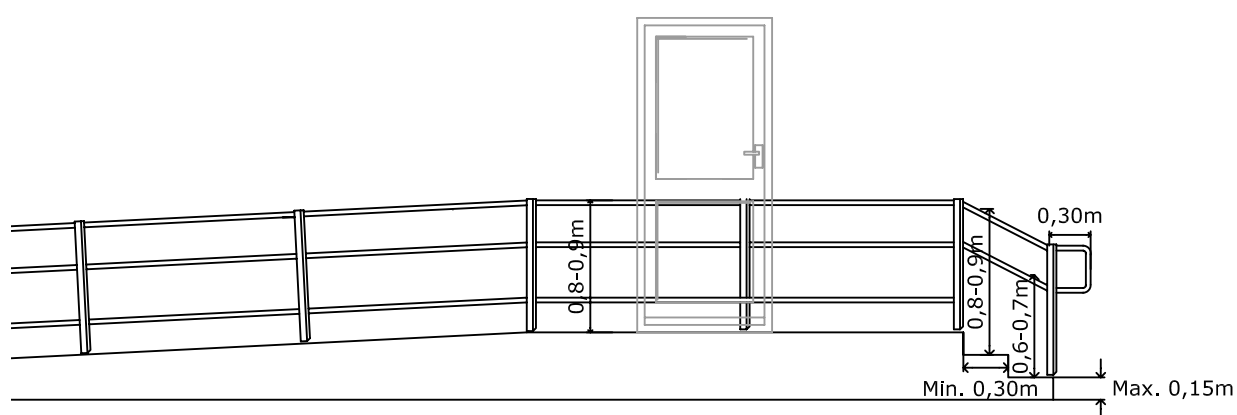


Fig. 2.2

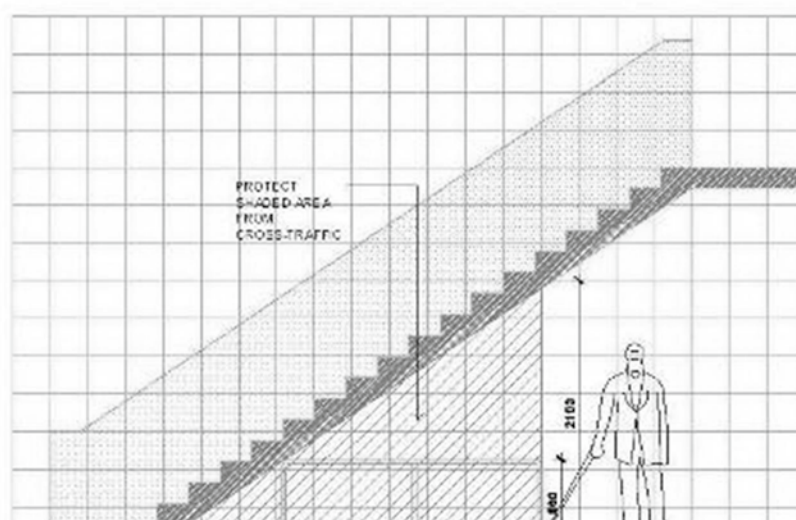


Fig. 2.3

Chapter 2

Stairs

Accessible Standard

(2.1) PLANNING PRINCIPLE

Stairs should be constructed adjacent to the ramps because some persons with disabilities prefer to use the stairs rather than ramps depending on their ability.

(2.2) DIMENSION

Each step should rise at a maximum height of 0.15m.

The run of the step should be maximum of 0.30m and all the steps should be identical (See fig.2.2).

(2.3) WIDTH

The minimum width of the outdoor stairs should be 1.0m measured in between the handrails.

The minimum width of the indoor stairs should be 1.5 m measured in between the handrails.

(2.4) LANDING AREA

Landings should be provided at every 10 stairs/steps.

The minimum length of the landing area should be 1.0m and width equal to the length of the stairs.

(2.5) HANDRAILS

Stairs should have grip-friendly handrails (diameter approx. Ø 32-38mm.) on both sides to avoid risks of fall, and to support people going up the stairs.

The distance between the handrails and vertical wall surface should be minimum 50mm.

The handrails should continue unbroken along the stairs and on the landing area.

There should be double handrails at different heights i.e one at a height of 0.60 m – 0.70m from the ground level for the use of the children and for persons with disabilities and, one at a height of 0.80m - 0.90m for the use of other users (See fig. 2.2).

For stairs more than 3.0m wide, there should be intermediate handrails and painted in contrasting colours.

The handrails should end 0.3m from the top and at the bottom of the stairs (See fig. 2.2).

Handrails should be made of preferably metal or any other approved strong and sturdy material.

The handrail surface should be neither too smooth nor rough.

(2.6) SURFACE

The stairs surface should be hard and non-slip.

(2.7) TACTILE MARKING

A tactile marking with contrasted colours should be placed at the top and bottom of the stairs to alert the blind persons or persons with visual impairment or low vision.

The width of the marking has to be at least 0.60m and length of the marking has to be the full size of the stairs (See fig. 2.1).

(2.8) MARKING STAIRS

The step rise and the step run should be in different contrasting colours, to enable persons with low vision identify one step from the other.

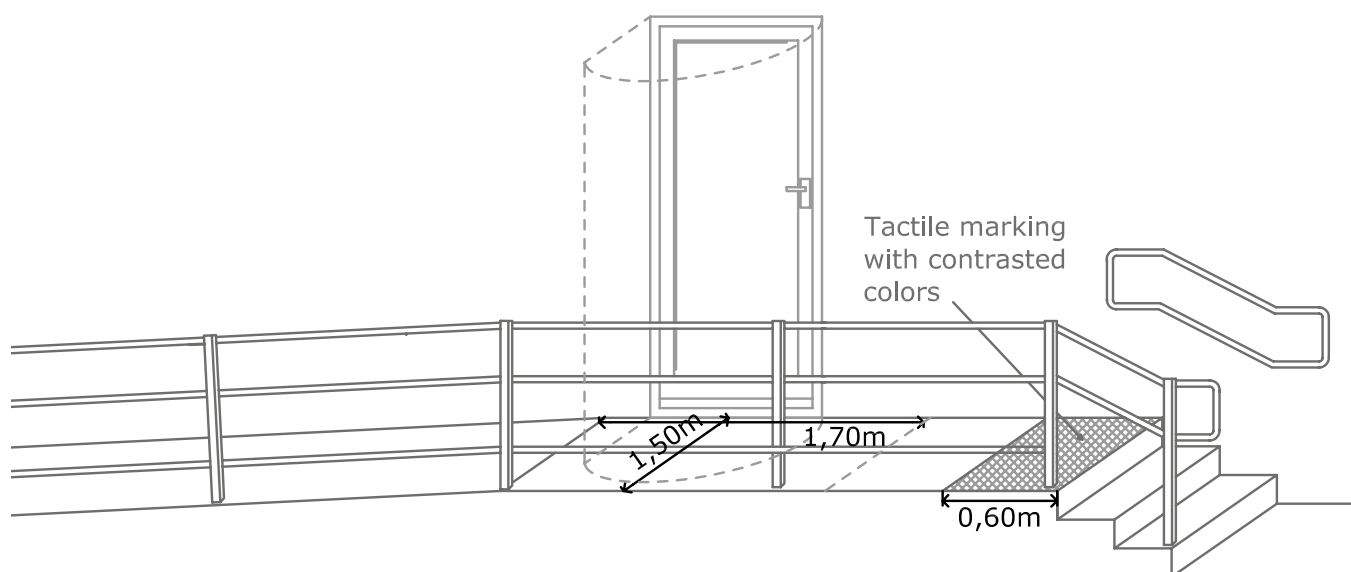
(2.9) SPACE BELOW STAIRS

Space below stairs should be blocked out completely by protective rails or marked with tactile surface (See fig. 2.3).

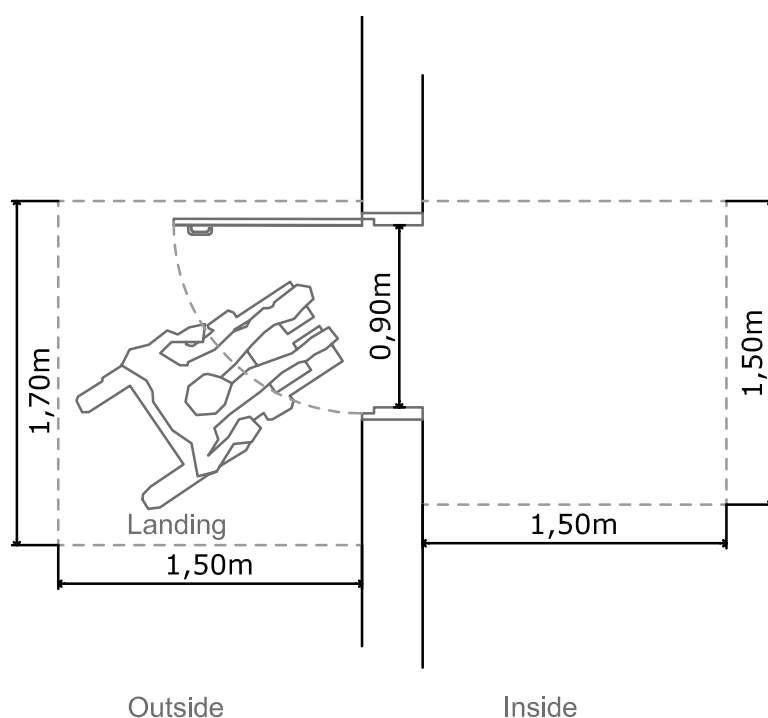
Chapter 3

Barrier free entrance

Accessible Standard



Stairs must always be supplementary with ramps

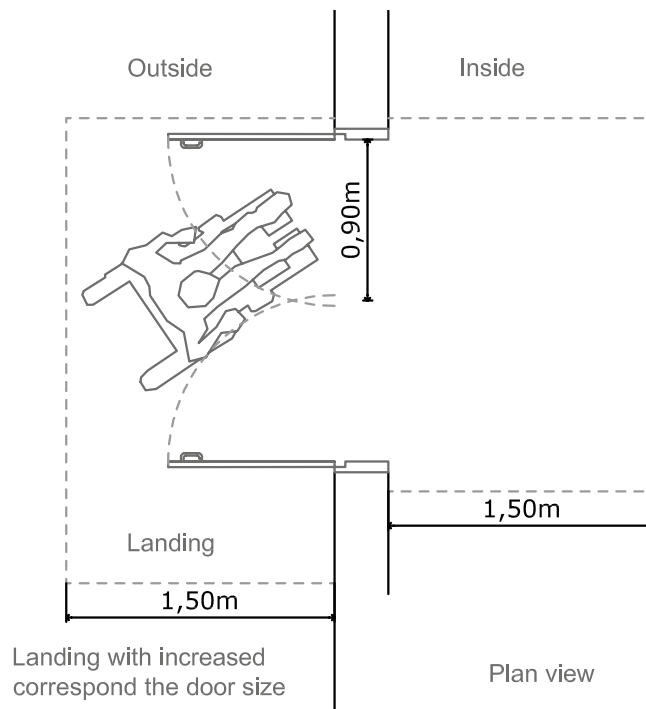


Plan view

Chapter 3

Barrier free entrance

Accessible Standard



(3.1) PLANNING PRINCIPLE

To provide accessible and easy-to-find building entrances irrespective of any disability.

(3.2) LOCATION

Entrances to buildings should be placed in a logical relationship within the routes that serve them, and be easily distinguishable from surroundings by a contrast colour.

Entrances should be connected with an accessible pathway, accessible indoor, outdoor and parking areas.

Buildings should be correctly designed with an accessible entrance without level differences to the surrounding area. If level difference is unavoidable, it should be aligned by a ramp.

Entrances should permit access to a conveniently located accessible elevator or lift.

Where possible, entrances should be fitted with voice directions taking into account the blind and visually impaired.

(3.3) SPACE ALLOWANCE

Space allowance should be designed in that the surrounding area to the entrance is horizontal and at the same level as the inside floor surface.

In order to allow easy maneuver of the door, sufficient space should be provided on both sides of the door. The area of maneuver should be flat and firm.

For outside entrance door, the landing area should be of minimum dimension of 1.70 x 1.50m measured from the hinge side of the door.

If the door opens outwards, the width of the landing area should be increased further by 0.2m along the front of the building.

For double-leaf doors, the length of the landing area shall be increased by the size of the width of the corresponding door.

(3.4) OPENING SPACE

The minimum opening space of entrance when the door is fully opened should be 0.90m.

Chapter 4

Doors

Accessible Standard



Fig. 4.1

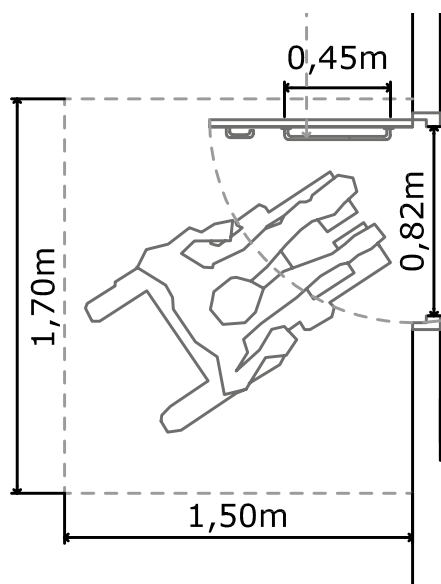


Fig. 4.3

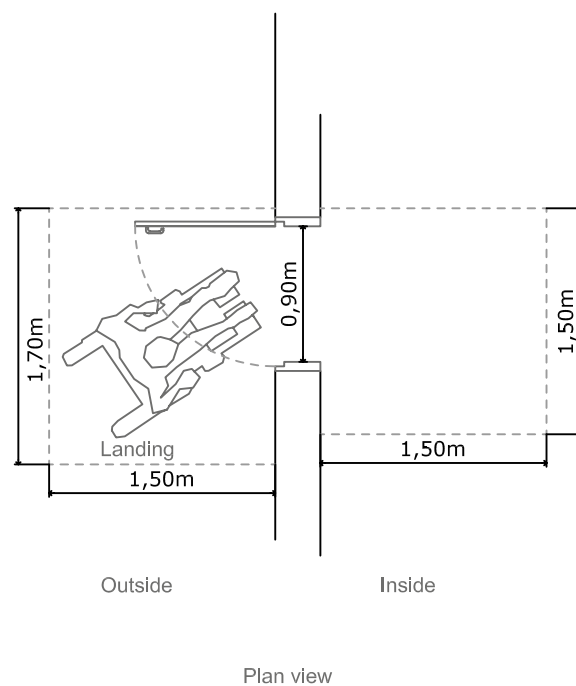


Fig. 4.2

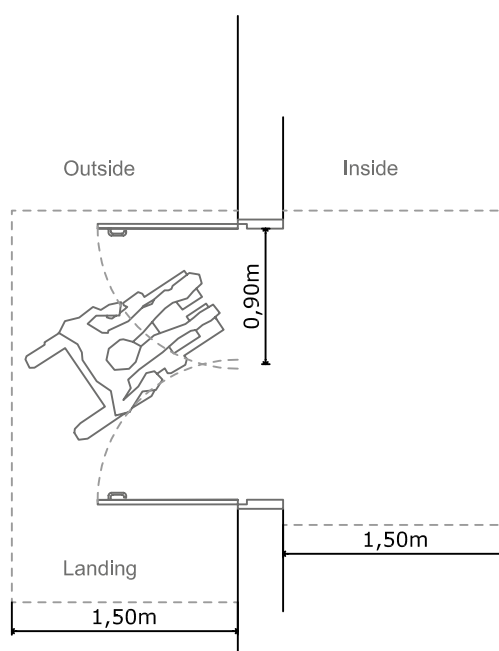


Fig. 4.4

Chapter 4

Doors

Accessible Standard

(4.1) PLANNING PRINCIPLE

Doors in public spaces should be designed to allow free passage of a wheelchair user or operation by one person in a single motion with little effort.

(4.2) WIDTH

The exterior door should have a minimum clear opening width of 0.90m when the door is fully open.

The interior doors should have a minimum clear opening of 0.80m when the door is fully open.

The interior doors for persons with disability's toilet should have a minimum clear opening of 0.90m

For double-leaf doors, one leaf of the door should have a clear width of a minimum of 0.9m .

(4.3) DOOR EQUIPMENT

The door should be light and easy to open for elderly, children and people with weak arms.

The doors should be able to open sideways up to the wall to avoid accidents (walking into them) by persons with impaired vision.

The edge of the door frame should be blunt, not sharp, to avoid injuring persons with visual impairment who may go against it.

If doorsteps are necessary, it should be maximum of 0.005m high or 5cm (See fig. 4.1).

The door handles should be positioned at a comfortable height between 1.0-1.10m from the floor surface.

The door handle should be at least 0.2m wide and properly positioned as mentioned above.

Glass doors should be provided with a horizontal marking at 1.25–1.60m from floor surface to warn persons with visual impairment

The marking can be big dots or it can be 0.1m wide marking.

(4.4) COLOUR

Door-to-door frame should be painted in a contrasting colour from the surrounding wall for easy identification by persons with visual impairment.

Labeling the doors should be in contrasting colours, large print format and preferably engraved or brailled.

(4.5) FIRE EXIT DOORS

Fire-exit doors should be marked and labeled in large print in contrasting colours to easily be located by persons with visual impairment.

Chapter 5

Parking space

Accessible Standard

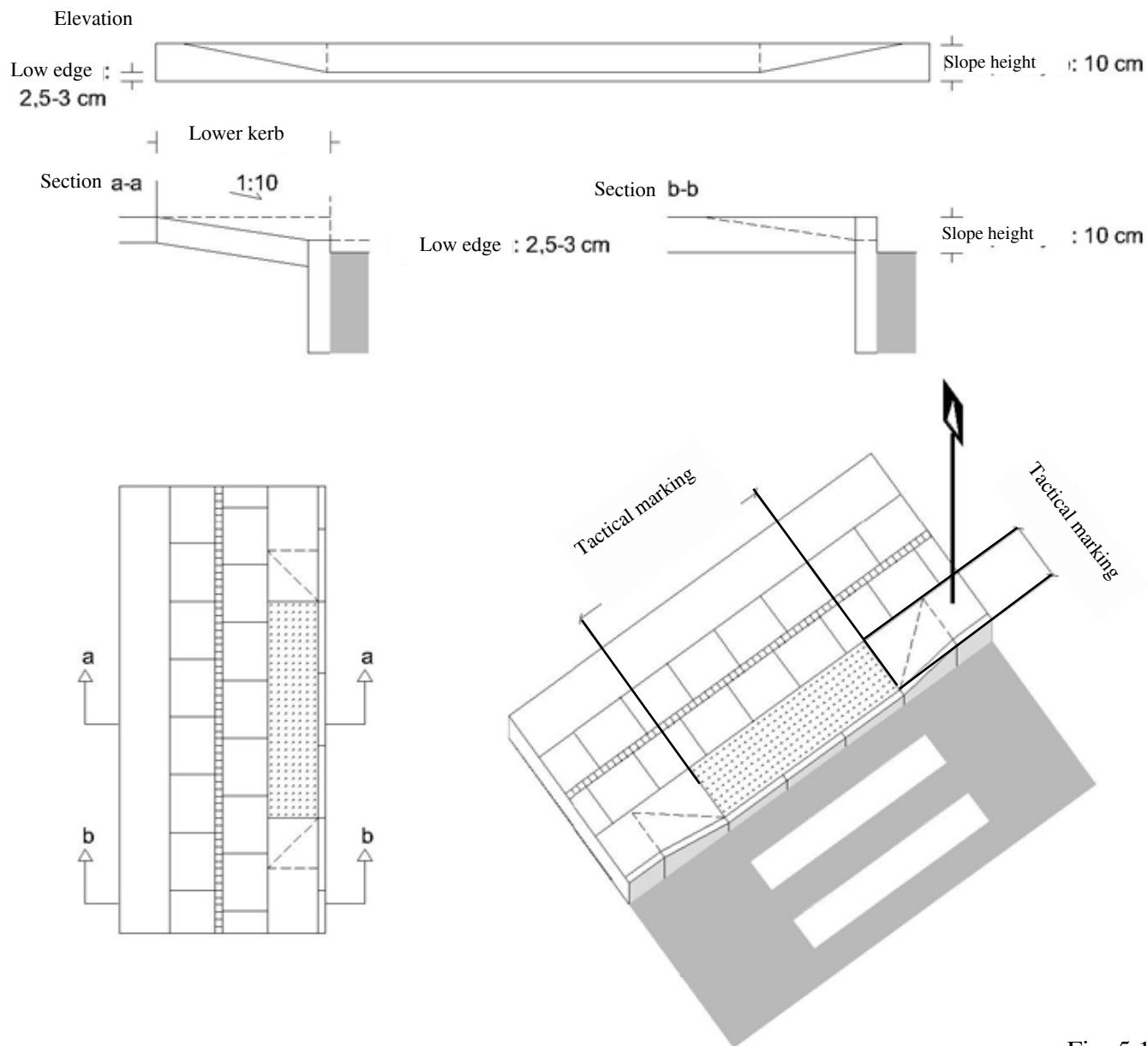


Fig. 5.1



Fig. 5.2

Chapter 5

Parking space

Accessible Standard

(5.1) PLANNING PRINCIPLE

A person with disability can achieve considerable independence by driving his/her car.

In order to obtain the greatest benefit from this independence, it is required that special parking space for persons with disabilities driving themselves or dropped off by someone is reserved as close as possible to each building entrance and other public facilities.

The parking space for persons with disabilities should be connected with an accessible pathway to the entrance of the building or other public facilities without level differences to the surrounding area. If level difference is unavoidable, it should be aligned by a ramp (See chapter 1 for ramps).

(5.2) KERBS

Lower kerbs should be placed if they are needed between the parking space and the pathway to the building or other public facilities (See fig.).

(5.3) LOCATION

Accessible parking spaces should be located not more than 30m from accessible building entrances.

(5.4) DIMENSION OF ONE PARKING

The minimum width of an accessible parking space is 3.60m and length of 5.0m for a normal car. With this size, it is possible for a person with disability to move from the car to a wheelchair placed next to the car.

However, a minibus might require extra length of 8.0m.

(5.5) SURFACE

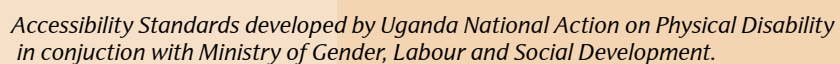
The surface of the parking facility reserved for a PWD should be uniform and non slippery

(5.6) SIGNS

Accessible parking areas should be marked by the international symbol of accessibility as a sign post.

It's also recommended to paint the symbol on the ground surface of the parking space (See fig. 5.2 for a parking sign).

Accessible Standard



Chapter 6

Toilet

Accessible Standard

(6.1) PLANNING PRINCIPLE

Toilets should be designed in such a way that they can easily be used by persons with disabilities. At least two toilets (males/females) in every public/private building should be provided specifically for PWDs.

(6.2) ROOM

The size of the toilet shall be of minimum dimension of 2.10X2.30m.

The size of the toilet should have a turning diameter of 1.50m (for wheelchair users), free of any obstructions.

On the side of the toilet, in between the toilet and the sink, a free floor space of minimum 0.9m shall be provided for easy transfer from a wheelchair.

(6.3) ACCESS

The pathway should be without any changes in level to the toilet entrance.

If change in levels occurs outside the facility, it should be connected with a horizontal landing area placed at the same level as the interior floor level of the facility.

The size of this landing area should be 1.70x .50m for easy manoeuvring of a wheelchair.

A change in level to the landing area should be connected by means of a ramp (See chapter 1. Ramps). If changes in levels are necessary, these shall be max. 25mm.

(6.4) DOOR

The door should have a minimum clear opening of 0.9m.

In general, the door should be outward opening for a clear floor space in the toilet room.

The door should be smooth running with a handle that is easy to operate. The distance between the handle and vertical door surface should be 50mm.

The locking handle (extended type) should have a shape that is easy to grasp with one hand (See chapter 10 about handles).

On the pull side, the door should be provided with a “pull handle”.

To operate the door successfully, space must be provided for the wheelchair user to place themselves outside the swing area of the door.

(6.5) TOILET SINK

There should be two separate sinks placed at different heights to cater for different disabilities.

A high sink 0.8m above finish floor must be placed for people standing up.

A low sink 0.4m above finish floor must be placed for crawling people / children.

Under the sink, there should be free height for the knees and feet supports of the wheelchair user. Therefore the drain shall be moved back to the wall.

The water control taps should be the push type that can be pushed with either elbow or closed fist so it is easy to operate with one closed fist.

(6.6) TOILET SEAT

Toilet seat should be mounted at a height of 0.48m above the finished floor.

The toilet must have a lever-type flush control fixed towards the wheelchair transfer side to facilitate flushing after transfer.

(6.7) HAND RAILS

Handrails should be fixed at the back and on the wall next to the toilet seat.

Upper handrails should be mounted at a comfortable height between 0.84-0.92m from floor surface.

Lower handrails should be mounted at a comfortable height of 0.55m from floor surface.

The handrails should be Ø 32-38mm and should be made of preferably metal or any other approved strong and sturdy material.

Chapter 6

Toilet

Accessible Standard

(6.8) MIRROR

Each sink should have a separate mirror.

The mirror for the low sink should be placed between 0.50-1.50m from floor surface.

The mirror to the high sink should be placed between 0.90m-1.90m from floor surface.

(6.9) HAND DRYER/LIQUID SOAP

The hand dryer/liquid soap outlet for the low sink should be mounted at an approximate height of 0.50m from floor surface, for high sink at 0.9m.

(6.10) PEGS

Pegs should be mounted at a height of 1.1m and 1.6m respectively above finish floor. For crawling people 0.7-0.9m.

(6.11) DIRECTION/SAFETY

Accessible public toilets should have the universally accepted symbol for wheelchair access displayed outside and supplemented by a text in embossed letters or in Braille.

Corridors inside a public toilet should be of minimum width of 1.5m wide.

If possible, there should be separate toilet specifically reserved for the disabled and kept clean.

(6.12) LIGHT

There should be a good, even, natural and mirror light in the toilet room. The light switch should be placed at the wall next to the door lock/handle at a maximum height of 0.9m above finished floor.

(6.13) FLOOR SURFACE

The floor surface within the toilet should be of non-slip materials without changes in level.

(6.14) ALTERNATIVE LAYOUT

In case of difficulty in conforming to the requirements of a toilet or obtain an optimal solution, UNAPD offers advice.

(6.15) URINALS

Any person who constructs a urinal should designate an area for use by persons with disabilities

and wide enough for wheelchair users.

The urinals should be stall-type or wall-hung with an elongated rim to make it user-friendly to someone in a wheelchair chair.

There should be at least three urinals mounted at different heights with the highest at 0.90m above the finished floor to cater for different disabilities.

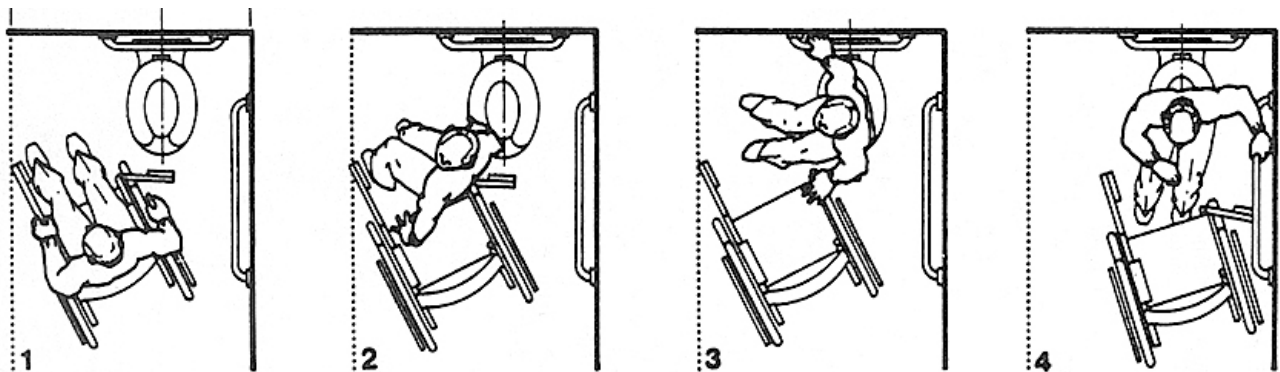
Clear floor surface of 1.5m by 0.80m should be provided in front of urinals to allow forward approach by a wheelchair user.

Where need be, a ramp leading to the urinals should be constructed using non-slippery materials.

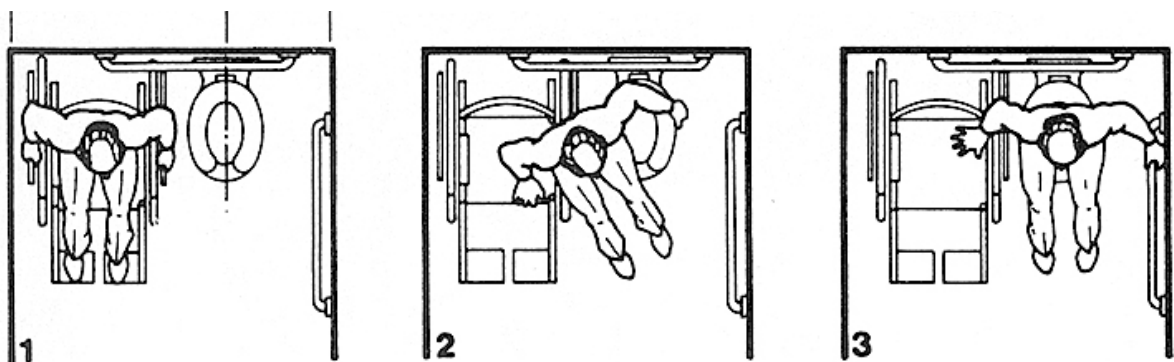
Chapter 6

Toilet

Accessible Standard



How a wheelchair user gets from the wheelchair to a toilet-seat (1-4)

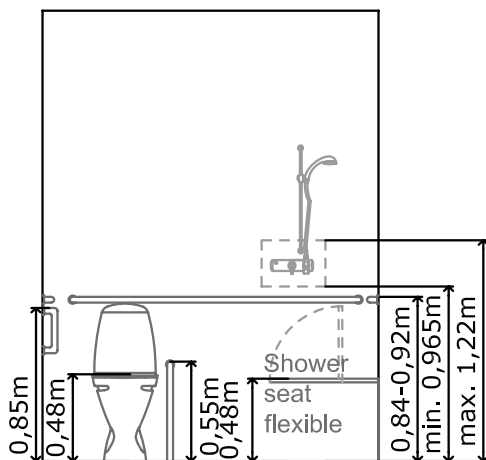


How a wheelchair user gets off from the toilet-seat back to the wheelchair (3-1)

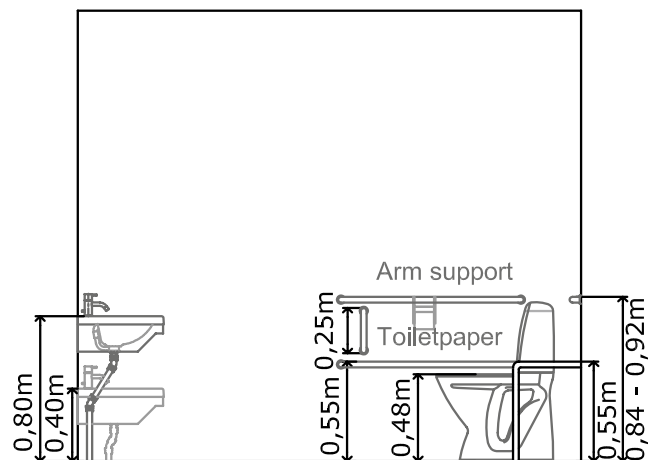
Chapter 7

Accessible Toilet with Shower

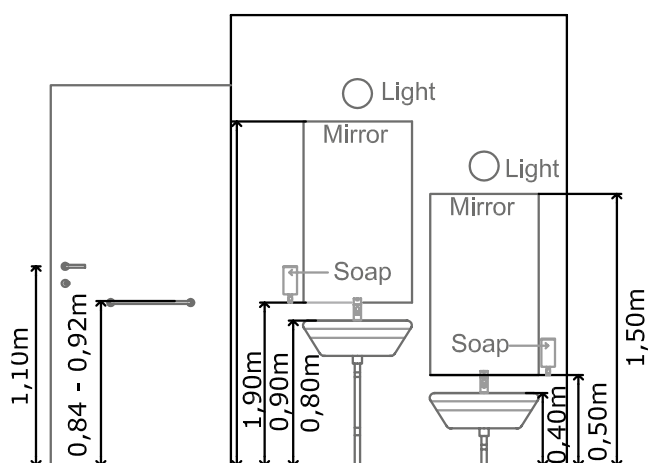
Accessible Standard



Front view

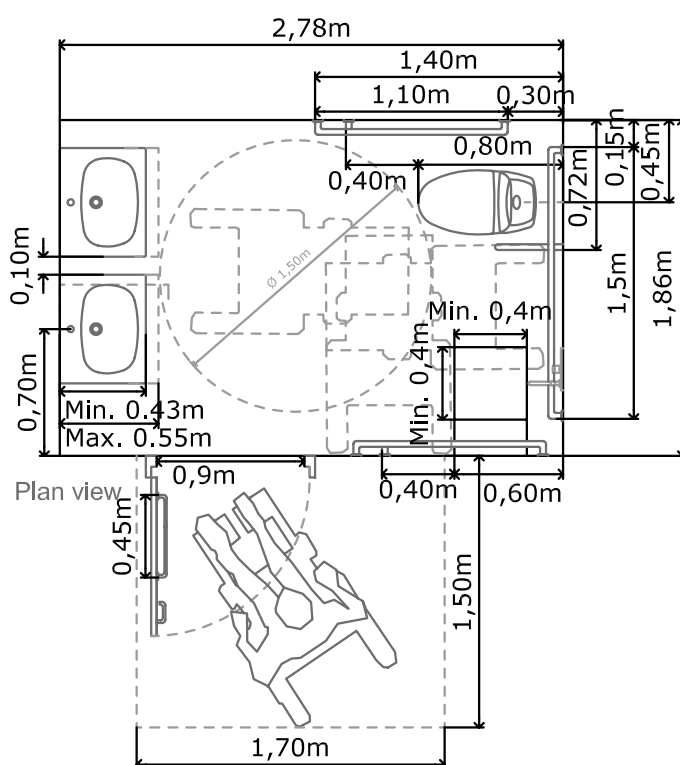


Side view



Side view

Low sink for crawling people



Plan view

Chapter 7

Accessible Toilet with Shower

Accessible Standard

(7.1) PLANNING PRINCIPLE

Toilets with showers should be designed in such a way that they can easily be used by persons with disabilities. At least two toilets (males/females) in every public/private building should be provided specifically for PWDs.

(7.2) ROOM

The size of the toilet shall be of minimum dimension of 2.78X1.86m.

The size of the toilet should have a turning diameter of 1.50m (for wheelchair users), and free of any obstructions.

On the side of the toilet, in between the toilet and the sink, a free floor space of min. 0.9m shall be provided for easy transfer from a wheelchair.

(7.3) ACCESS

The pathway should be without any changes in level to the toilet entrance.

If change in levels occurs outside the facility, it should be connected with a horizontal landing area placed at the same level as the interior floor level of the facility.

The size of this landing area should be 1.70x1.50m for easy manouvering of a wheelchair.

A change in level to the landing area should be connected by means of a ramp (See Chapter 1. Ramps). If changes in levels are necessary, these shall be max. 25mm.

(7.4) DOOR

The door should have a minimum clear opening of 0.9m wide.

In general, the door should be outward opening for a clear floor space in the toilet room.

The door should be smooth running with a handle that is easy to operate. The distance between the handle and vertical door surface should be 50mm.

The locking handle (extended type) should have a shape that is easy to grasp with one hand (See Chapter 10: Handles).

On the pull side, the door should be provided with a “pull handle”.

To operate the door successfully, space must be provided for wheelchair users to place themselves outside the swing area of the door.

(7.5) TOILET SINK

There should be two separate sinks placed at different heights to cater for different disabilities.

A high sink 0.8m above finish floor must be placed for people who can stand upright.

A low sink 0.4m above finished floor must be placed for crawling people / children.

Under the sink, there should be a free height for the knees and feet supports of the wheelchair user. Therefore, the drain should be moved back to the wall.

The water control taps should be the push type that can be pushed with either elbow or closed fist so that it is easy to operate with one closed fist.

(7.6) TOILET SEAT

The toilet seat should be mounted at a height of 0.48m above the finished floor.

From the front of the toilet to the wall where the toilet is mounted should be 0.80m.

The toilet must have a lever-type flush control fixed towards the wheelchair transfer side to facilitate flushing after transfer.

(7.7) HAND RAILS

Handrails should be fixed at the back and on the wall next to the toilet seat and at the back of the shower seat.

A vertical handrail should be placed on wall next to the toilet seat and the shower seat supporting crawling people.

Upper handrails should be mounted at a comfortable height between 0.84-0.92m from the floor surface.

Chapter 7

Accessible Toilet with Shower

Accessible Standard

Lower handrails should be mounted at a comfortable height of 0.55m from the floor surface.

The handrails should be at diameter (Ø) of 32-38mm and be made of preferably metal or any other approved strong and standard material.

(7.8) MIRROR

Each sink should have a separate mirror. The mirror for the lower sink should be placed between 0.50-1.50m and one for higher sink should be placed between 0.90m-1.90m from floor surface.

(7.9) HAND DRYER/LIQUID SOAP/PEGS

The hand dryer/liquid soap outlet for the lower sink should be mounted at an approximate height of 0.50m from the floor surface, for high sink at 0.9m.

(7.10) SHOWER SEAT

The shower seat should be placed at a comfortable height of 0.48m from the floor surface.

The shower seat should be flexible and possible to tip-up, but fixed firmly in one position.

The material in which the shower seat is made should be non-slippery when wet to avoid accidents such as sliding off the seat.

(7.11) SHOWER TAPS

The shower tap should be located in a reachable distance to the shower seat.

Shower taps should be mounted at a comfortable distance between 0.96-1.22m from the floor surface.

The water control taps should be of push type that can be pushed with either elbow or closed fist so that it is easy to operate with one closed fist.

(7.12) DIRECTION/SAFETY

Accessible public toilets should have the universally accepted symbol for wheelchair access displayed outside and supplemented by a text in embossed letters or in Braille.

Corridors inside a public toilet should be of minimum width of 1.5m wide.

If possible, there should be a separate toilet specifically reserved for PWDs and kept clean.

(7.13) LIGHT

There should be a good, even, natural and mirror light in the room for the toilet with shower. The light switch should be placed at the wall next to the door lock/handle at a maximum height of 0.9m above finished floor.

(7.14) FLOOR SURFACE

The floor surface within the toilet should be of non-slip materials without changes in level.

(7.15) ALTERNATIVE LAYOUT

In case of difficulty in conforming to the requirements of a toilet or obtain an optimal solution, UNAPD offers advice.

Please be aware that the above instructions apply to both public and private toilets.

(7.16) URINALS

Any person who constructs a urinals should designate an area for use by persons with disabilities and wide enough for wheelchair users.

The urinals should be stall-type or wall-hung with an elongated rim to make them user friendly to someone in a wheelchair.

There should be three urinals mounted at different heights with the highest at 0.90m above the finished floor to cater for different disabilities.

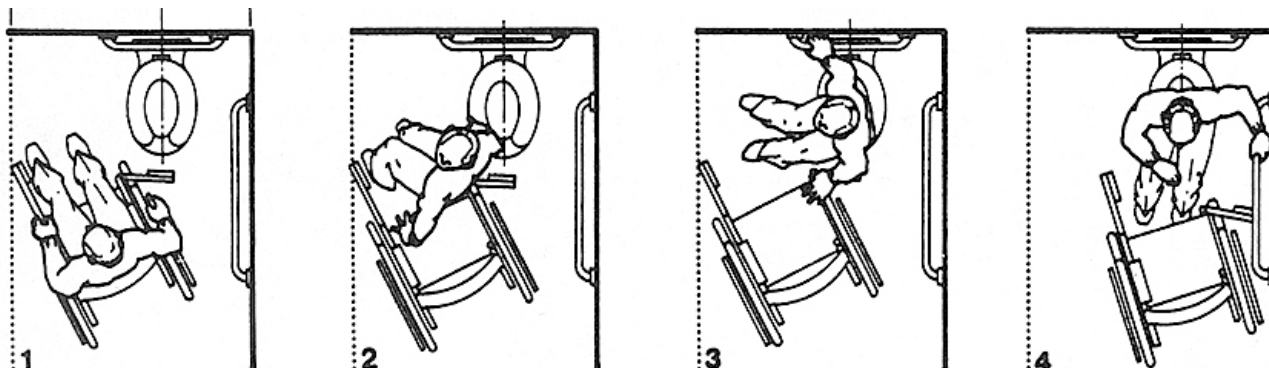
Clear floor surface of 1.5m by 0.80m should be provided in front of urinals to allow forward approach by a wheelchair user.

Where need be, a ramp leading to the urinals should be constructed using non-slippery materials.

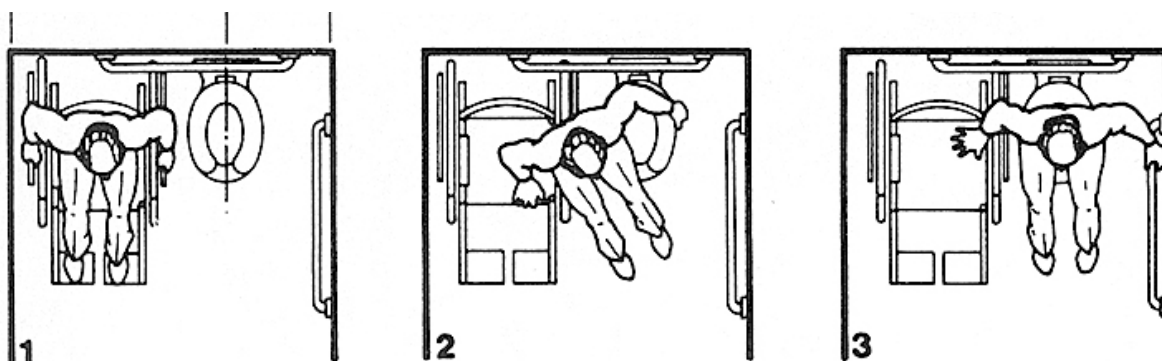
Chapter 7

Accessible Toilet with Shower

Accessible Standard



How a wheelchair user gets from the wheelchair onto a toilet-seat (1-4)



How a wheelchair user gets off from the toilet-seat back to the wheelchair (3-1)

Chapter 8

Accessible Pit Latrine

to persons with disabilities

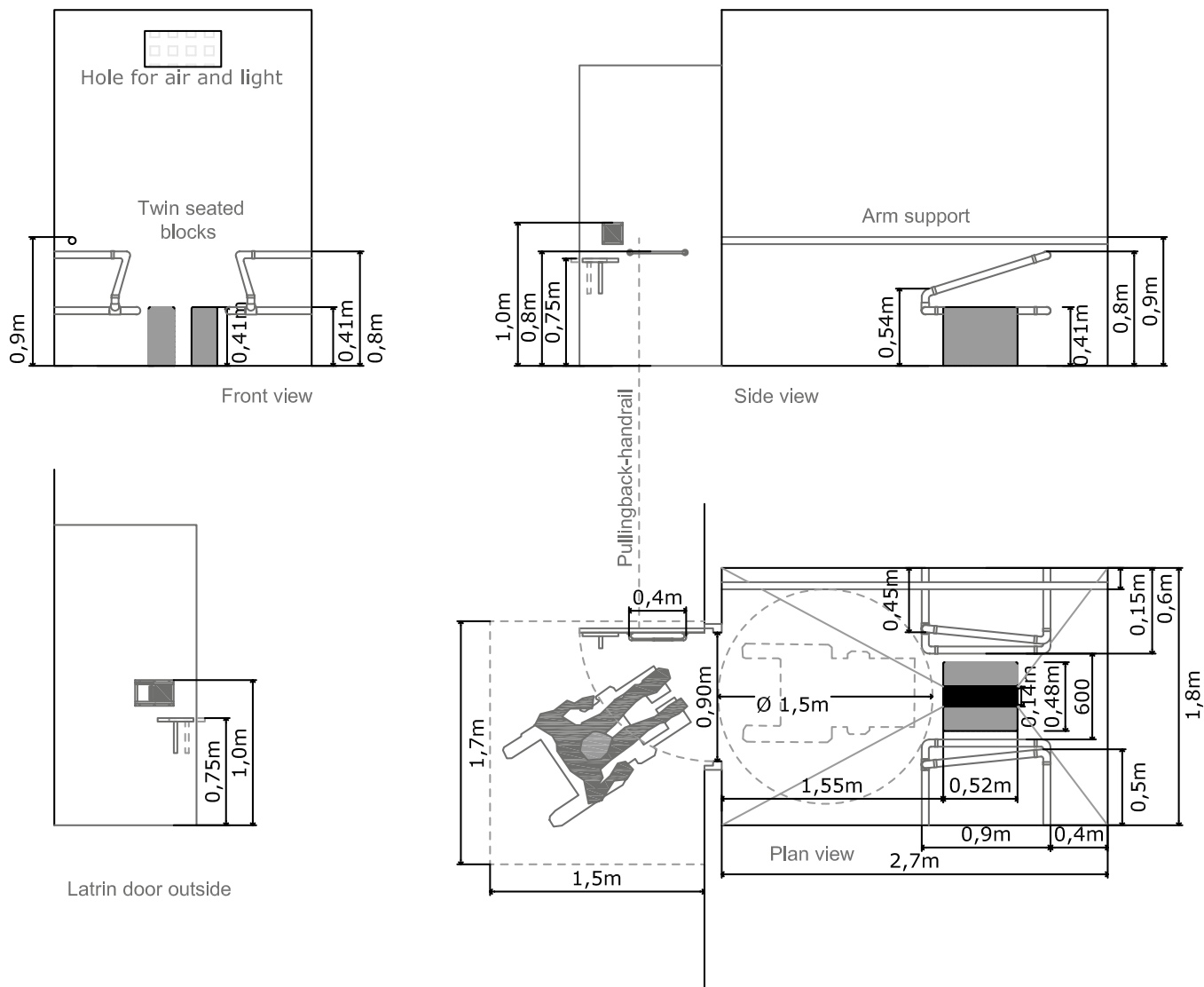


Fig. 8.1



Fig. 8.2



Fig. 8.3



Fig. 8.4



Fig. 8.5

Chapter 8

Accessible Pit Latrine

to persons with disabilities

(8.1) PLANNING PRINCIPLE

The accessible latrine can be used by most persons with disabilities. If there are more than one accessible latrines in the same area, the latrines should be in different designs, to satisfy different disability needs. Priority order 1-3 is mentioned at the different drawings (See fig 8.1, fig 8.6 and fig 8.8).

(8.2) ROOM

The size of the latrine room should be of minimum dimension of 2.7m x 1.8m.

The size of the latrine room should have a turning radius (for wheelchair users) of 1.50m free of any obstructions.

(8.3) ACCESS

The pathway should be without any changes in level to the latrine entrance.

If change in levels occurs, it should be connected with a horizontal landing area placed at the same level as the interior floor level of the facility.

The size of this landing area should be 1.70x1.50m for easy maneuvering of a wheelchair. Space must be provided for the wheelchair users to place themselves outside the swing area of the door. (See Chapter 4 about Doors)

A change in level to the landing area should be connected by means of a ramp (See Chapter about ramps).

(8.4) DOOR

The minimum opening space of an entrance to the latrine when the door is fully opened should be 0.90m.

The door should be smooth running with a handle/lock that is easy to operate, smooth running and grasp with one hand.

The distance between the handle and vertical door surface should be minimum 50mm. (See fig 8.3)

A pull back handrail should be inside the door. (See fig. 8.1)

In general, the door should be outward opening to give enough space inside for a wheelchair user to turn with ease.

A small opening in the door should be provided to allow the door to be opened from outside if needed. (See fig. 8.4)

(8.5) HAND RAILS

Double handrails for support, of diameter (Ø) 50mm, should be fixed on each side of the latrine. The different heights support PWDs to rise up and sit down onto the latrine seat.

One handrail should be fixed along one side of the latrine to support PWDs walking from the door side to the latrine (See fig 8.1).

There should be handrails attached to the outside wall for support while opening the door (See fig. 8.5).

(8.6) LATRINE SEAT

There should be two twin latrine seats over the latrine hole and each latrine seat should be identical and have a maximum height of 0.41m from floor surface.

The latrine seat should be made of cemented plastered bricks or concrete and the edges should not be sharp.

The seat should be painted properly and painstaking for easy cleaning. The paint should be often maintained.

It is not advisable to make latrine seats out of mud as it will be very un-hygienic.

The seats should be kept clean to avoid infections, men should not urinate in latrines while standing up since this will make the latrine seat unhygienic.

(8.7) DIRECTION/SAFETY

An accessible public latrine should have the universally accepted symbol for wheelchair access displayed outside.

If there are corridors inside the public latrine, the width of the corridors should be minimum 1.5m.

Chapter 8

Accessible Pit Latrine

to persons with disabilities

People are not supposed to stand on the latrine seat but to sit to avoid accidents and maintain cleanliness for the next user.

If possible, there should be a separate latrine specifically reserved for the disabled and it should be kept clean.

There should be an internal water supply for anal cleaning and cleaning the seat.

Water and soap for hand washing should be near by the latrine building.

For small children, the gap between the blocks needs to be narrower for comfort and safety.

(8.8) LIGHT

Holes should be placed high up on the wall for ventilation and light.

(8.9) FLOOR SURFACE

The floor surface within the latrine should be of concrete and non-slippery materials.

The floor surface should slope towards the latrine hole, from all corners to make sure splashing of water/urine/refuse goes to the hole and does not stay on the floor.

8.10) ALTERNATIVE LAYOUT

If the latrine is designed for an individual person in a home, it should be designed according to this person's needs. For inspiration, refer: *"Water and Sanitation for disabled people,"* Hazel Jones & Rob Reed, or contact UNAPD for advice.

(8.11) BATHROOM

There should be a separate bathroom for people with disabilities.

The minimum size of the bathroom should be 1 x 2m to enable a wheelchair user enter with ease.

The bathroom should be constructed with a seat at an appropriate height between 0.45-0.50m high from the floor surface.

There should be double handrails mounted at different heights with the maximum at 0.90m.

The surface floor of the bathroom should be of non-slip materials.

The minimum door opening of the bathroom should be 0.90m wide.

Water tap should be mounted at an approximate maximum height of 0.90m high.

The landing area of the bathroom should be of minimum dimension of 1.5x1.7m.

The pathway to the bathroom should be gentle, non-slippery and connected with a ramp where necessary.

There should be directional signs to the location of the bathroom in contrasting colours.

The signs should be supplemented by engraved letters, or brailled.

The bathroom should always be kept clean or hygienic.

This accessible bathroom can also be used by any body else as long as it is kept clean.

Chapter 8

Accessible Pit Latrine to persons with disabilities

2. Priority

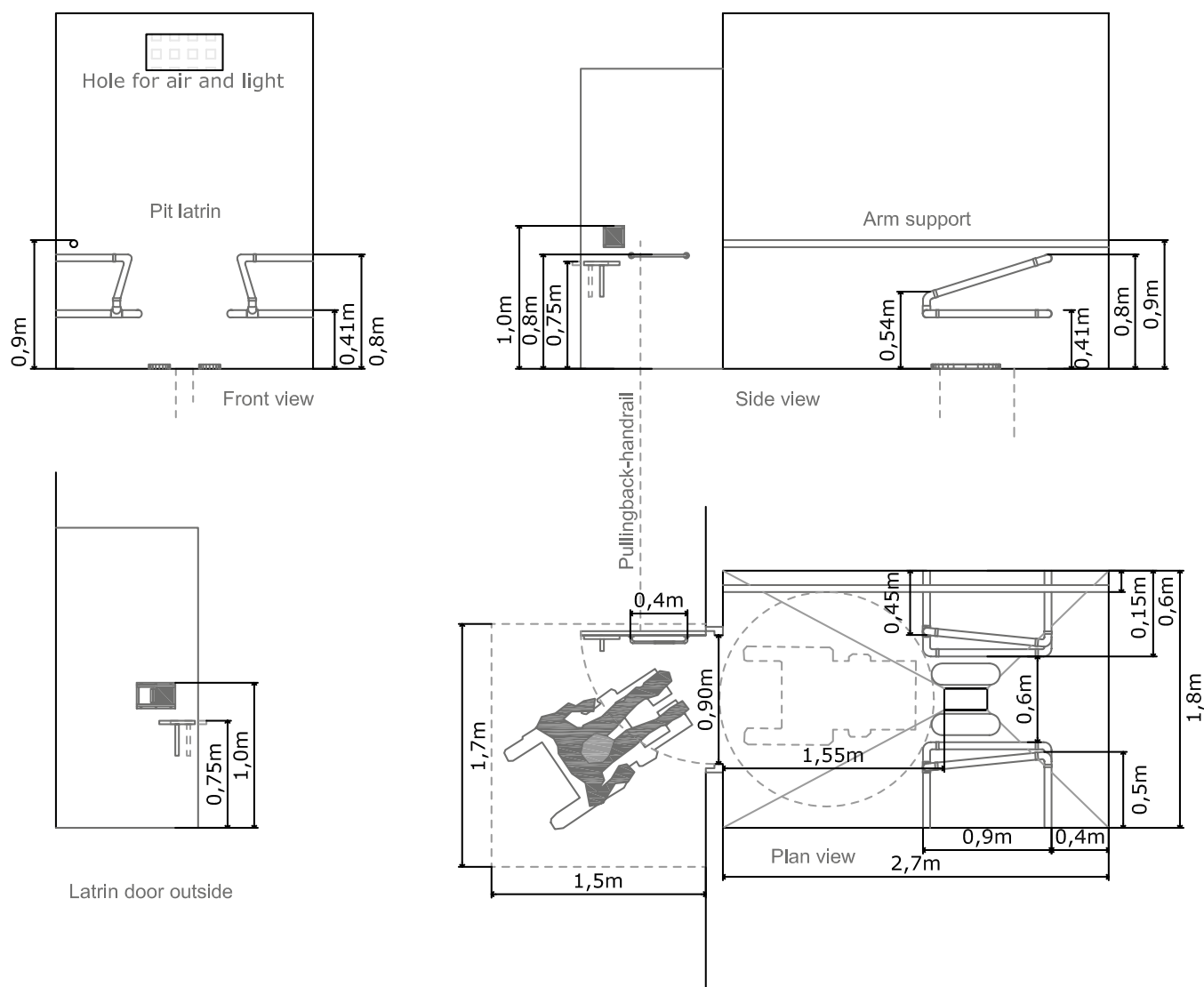


Fig. 8.6

Steppers next to the latrine hole helps those with vision impairment to locate the latrine hole.



Fig. 8.7



Fig. 8.3



Fig. 8.4



Fig. 8.5

Chapter 8

Accessible Pit Latrine

to persons with disabilities

3. Priority

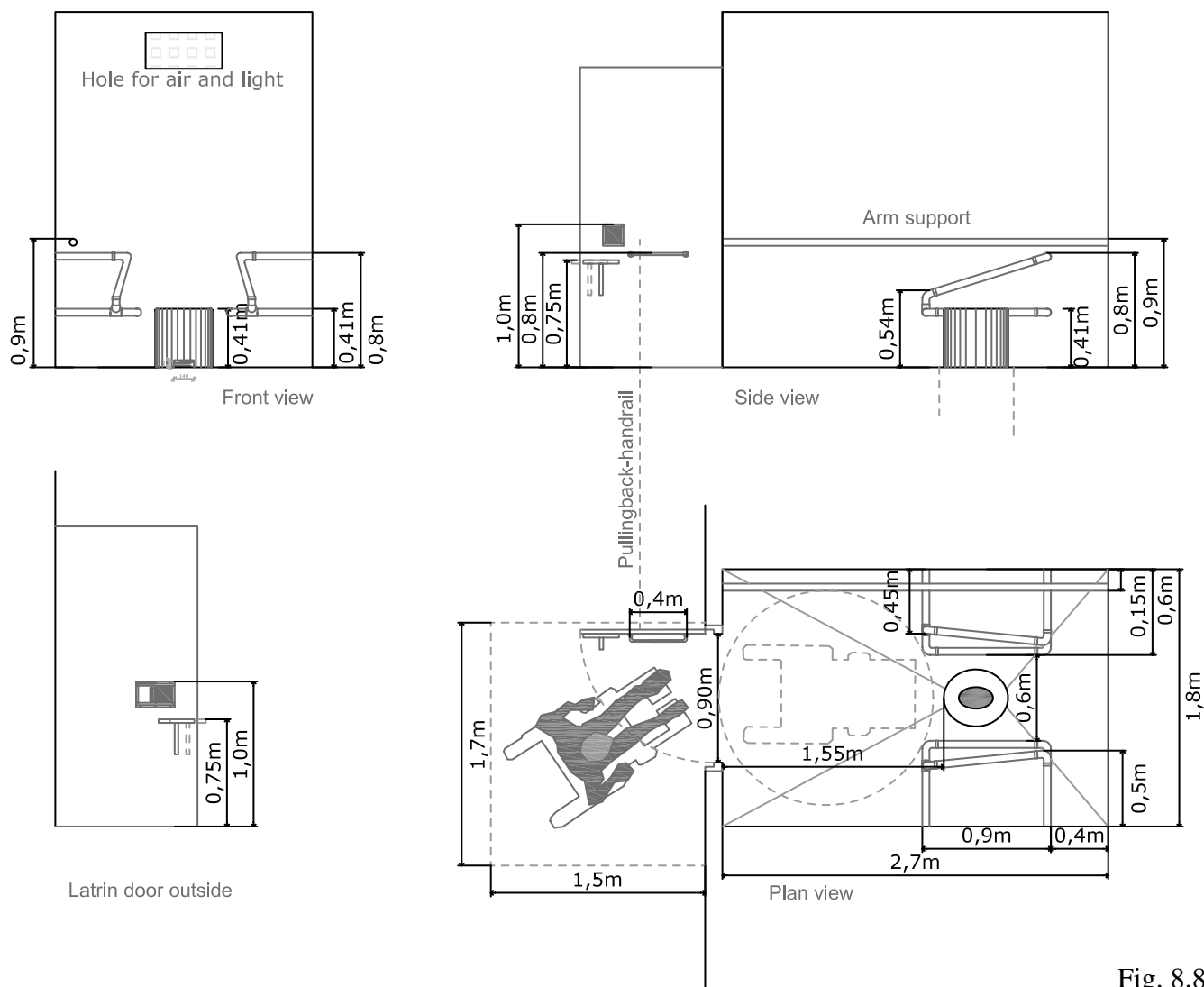


Fig. 8.8



Fig. 8.9



Fig. 8.3

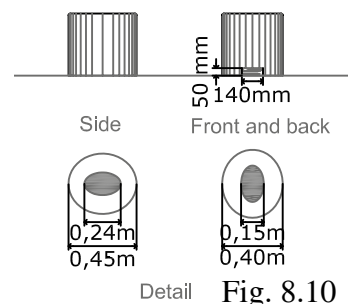


Fig. 8.10



Fig. 8.5

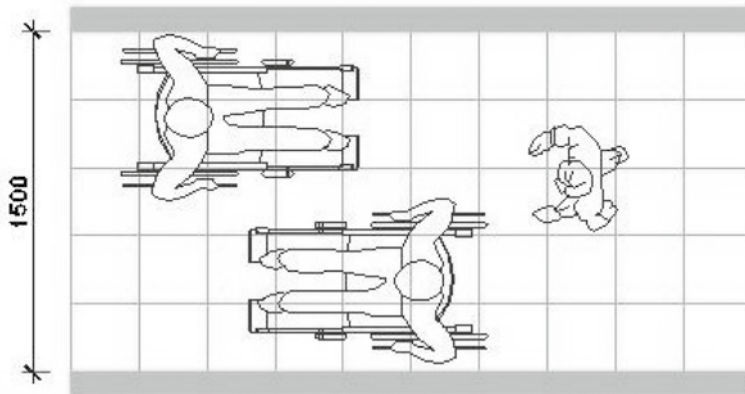


Fig. 8.4

Chapter 9

Pathways/Corridors/Inside buildings

Accessible Standard



(9.1) PLANNING PRINCIPLE

To provide clear, obstruction-free, level continuous and wide pathways/corridors for the convenience of all users, especially those with visual impairment and wheelchair users.

It is a facility that enables free movement inside buildings and access to all the rooms in the same floor level without any obstructions, steps or level differences.

(9.2) WIDTH

The minimum width of unobstructed pathway/corridor should be 1.3m and preferably 1.5m to allow maneuvering of wheelchairs through lateral doors.

The minimum width of a two-way wheelchair traffic corridor should be 1.50m and preferably 1.80m (See fig. 9.1).

(9.3) SLOPE

The slope of an accessible path should not exceed 1:20m. I.e. 5cm per metre (See Chapter 1 about ramps).

In case of stairs along the pathway, there should be a ramp adjacent to the stairs and with rails on both sides for sufficient support.

(9.4) SURFACE

The surface of accessible pathway/corridors should be smooth, continuous, firm, non-slippery and even.

Pathways which are leveled and even with adjacent surfaces, should be given a different texture and colour finish for differentiation.

(9.5) SPACE ALLOWANCE

The corridor width should be of 1.5m to allow maneuverability of the doors located along its length.

At the end of a corridor, a free, unobstructed area of 1.5x1.5m is necessary to allow wheelchair users to maneuver.

(9.6) OBSTRUCTIONS

Any obstructions should not be constructed within the pathway/corridors as they are hazardous to the persons with vision impairment.

Pathways should have barriers where there are risks of drop. This could be at balconies, roof terraces or platforms.

Balconies or platforms should have railings at a minimum height of 1.0m.

In case of stairs and ramps, refer to Chapters 1 & 2 respectively.

(9.7) LIGHT

The corridors should have sufficient natural or artificial light.

Chapter 10

Handles and grip

Accessible Standard

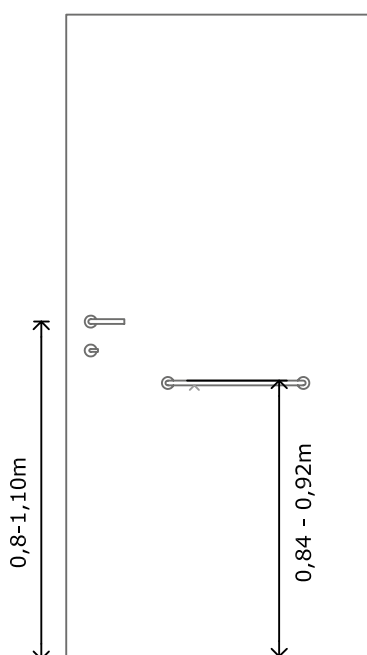


Fig. 10.3



Fig. 10.2



Fig. 10.1

Chapter 10

Handles and grip

Accessible Standard

(10.1) PLANNING PRINCIPLE

To enable a person with weak or deformed arms to be in position to open or close the door without any difficulty.

(10.2) HANDLES AND GRIPS

Handles and grips in public places should meet the following requirements:

The door operation devices, handles and grips, should be easy to grasp and rotate with one hand without any difficulty, preferably pull handles that are not heavy to pull down (See fig. 10.1).

Door handles should be located at a comfortable height between 0.80-1.1m from the floor surface.

The mechanism of operationalising the door handle and locker should allow a user to operate each at a time with one hand and not at the same time because some persons with disabilities have only one hand.

Door handles should be minimum 0.10m long and the space between the handle and the door should be 0.05m.

Knob handles are always unsuitable for use by people with weak arms or hands.

(10.3) LOCKS

The locking handle should have a shape that is easy to grasp with one hand. (See Chapter 10. about Handles)

Locks should be located at a comfortable height between 0.90-1.00m from the floor surface.

L shaped Locker design is recommended on doors. (See fig 10.1)

(10.4) PUSH BUTTONS

The push buttons on automatic doors should be located at a comfortable height between 0.90m-1.20m from the floor surface.

(10.5) RING / ALARM

Ring/alarm bottom should be positioned at a comfortable maximum height between 0.90-1.20m from the floor surface.

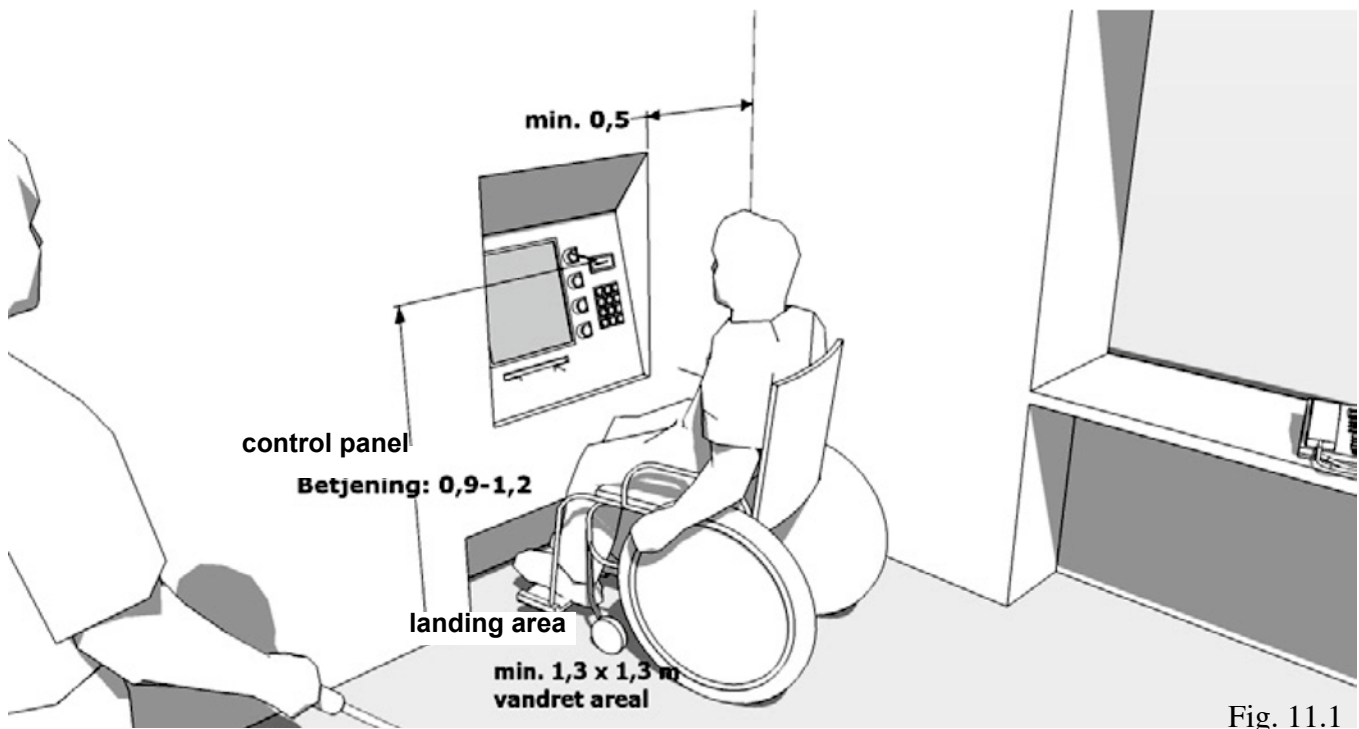
(10.6) PULL HANDLE

In toilets, the door should be provided with a “pull handle” on the pull side, at a comfortable maximum height between 0.84-0.92m (See fig 10.3).

Chapter 11

Public operated machines

Accessible Standard



(11.1) PLANNING PRINCIPLE

Public operated machines should be placed in a comfortable position so that they are user-friendly to the elderly and persons with disabilities.

(11.2) ACCESS

Machines should be connected with accessible pathways and where there are steps, a standard ramp should be constructed.

(11.3) SURROUNDING AREA

The landing area in front of the machines should be minimum dimension of 1.30x1.30m and horizontal.

(11.4) CONTROL PANELS

Public operated machines, like the ATM Machines should be installed in a way that the control panel is placed at a maximum height between 0.90–1.20m from the ground floor.

If the machine is next to an inside corner, the distance from the machines to the inside corner should be minimum 0.50m.

(11.5) COUNTERS

Counters in banks should be positioned at a maximum height between 0.90-1.20m from the floor surface.

(11.6) AUDIO INSTRUCTIONS

It is preferably advised to incorporate audio instruction in the operationalisation of the machine for the benefit of people with visual impairment.

Chapter 12

Boreholes

to persons with disabilities

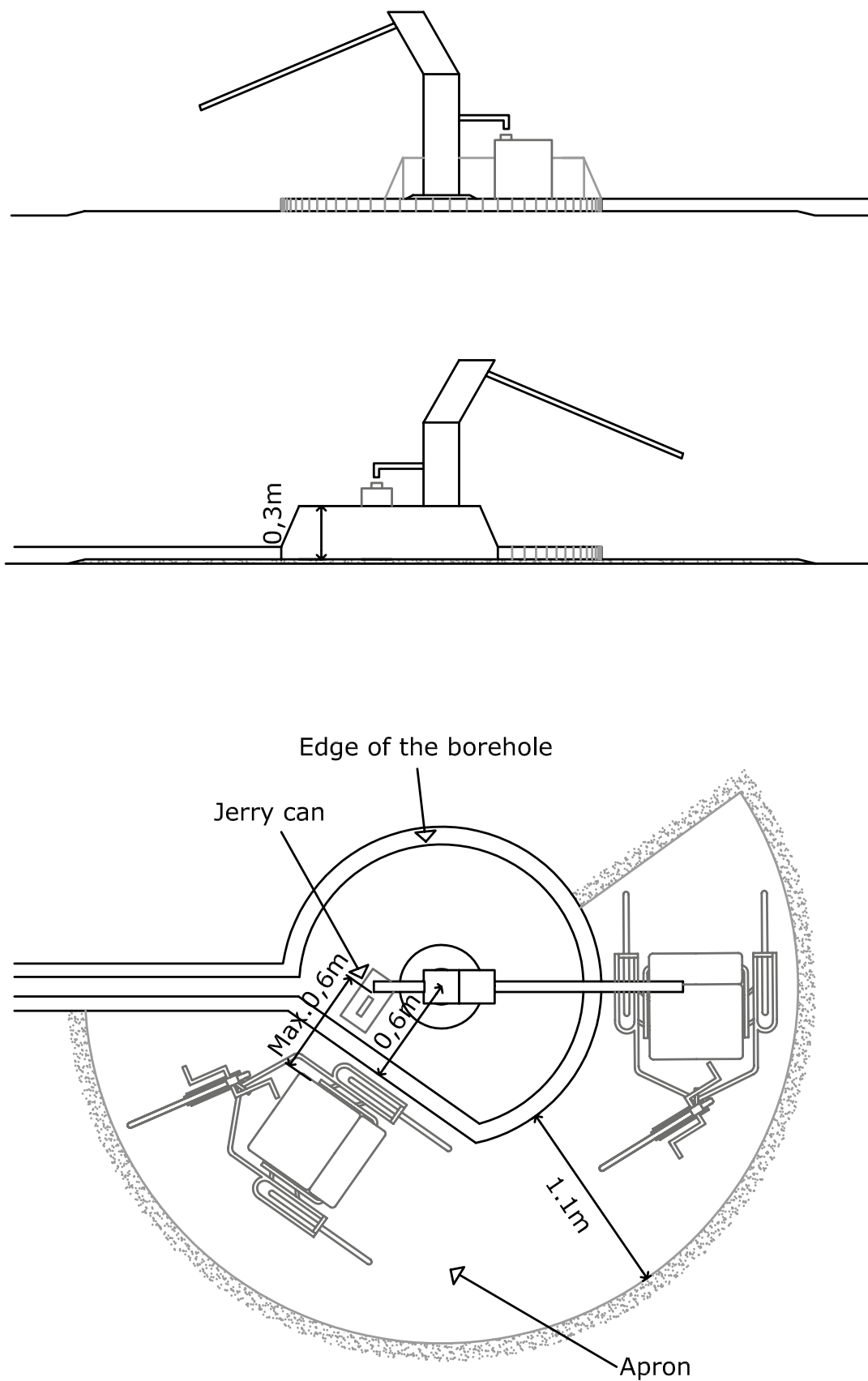


Fig. 12.1

Chapter 12

Boreholes

to persons with disabilities

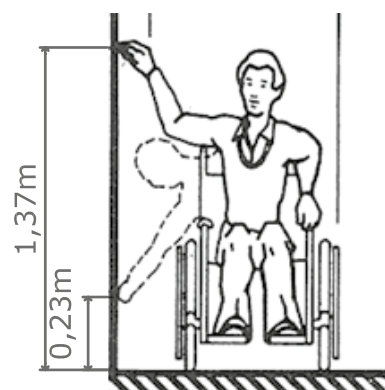
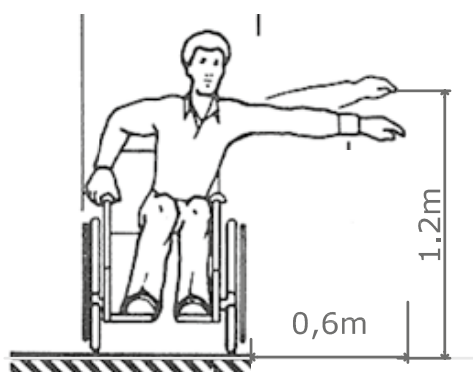


Fig. 12.2

(12.1) PLANNING PRINCIPLE

The Ugandan standard boreholes can be changed into accessible boreholes.

At the water source, the user needs to be able to get into a position to reach the water drawing mechanism, to be able to operate it, to reach the water produced and to put the jerrycan for water.

By placing a horizontal area along the borehole and changing the edge as shown in fig. 12.1, it is possible for a wheelchair and tri-cycle user to both reach the pump handle and place the jerrycan under the water tap.

(12.2) APRONS

There should be a horizontal concrete apron along the borehole from the pump handle to the tap as shown in fig. 12.1.

The apron should have a roughened finish and non-slippery surface to avoid accidents.

The apron should be minimum 1.1m wide outside the edge of the borehole to ease access to the hand pump and water drawing point by a wheelchair or tri-cycle user or any crawling person. Please note that the width is larger next to the raised edge.

(2.3) SLOPE

In case of level difference between the apron and the surrounding area, a curved slope should be established to ease access by a tri-cycle or wheelchair user.

The slope should be maximum 1:10m (see chapter 1 about ramps)

(12.4) BOREHOLE EDGE

It is necessary to make the edge close to the tap higher at 0.3m to avoid water splashing outside the edge.

The distance between the high edge and the middle of the pump should be maximum 0.6m, angled towards the edge.

The distance between the tap and the side of the tri-cycle or wheelchair seat should be maximum 0.6m. This distance enables a wheelchair or tri-cycle user to reach the tap by the jerrycan (See fig. 12.2).

(12.5) PUMP HANDLE

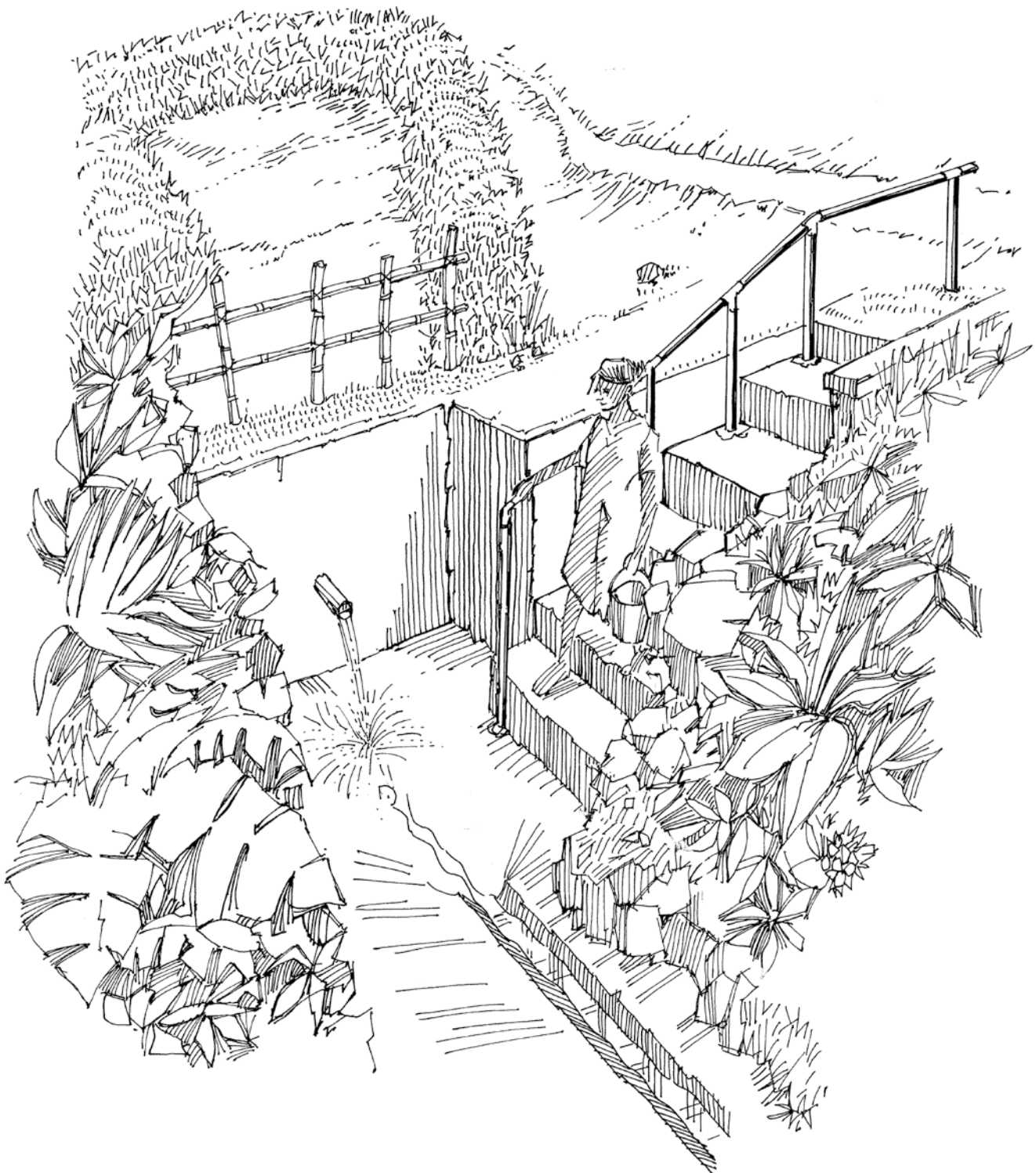
The pump handle should be installed at a proper height from which it can be reached, either from sitting position in a wheelchair or at the ground level.

The pump handle should be lengthened to provide more leverage, so that less strength is needed to operate it. It also allows the handle to be reached by a person sitting down (See fig. 12.2).

Chapter 13

Well

Accessible Standard



Source: *Water and Sanitation for Disabled People and Other Vulnerable Groups.*

Fig. 13.1

Chapter 13

Well

Accessible Standard

(13.1) PLANNING PRINCIPLE

Getting to and from a water source can be particularly hazardous for persons with disabilities.

A safety rail or rope is recommended for paths that lead to or past an open water source. See fig. 13.1

This is useful for everyone especially young children and others with unstable balance such as pregnant women, elderly people and people with epilepsy.

This must be installed at a height of 1.0m (adult waist height), otherwise it can become a trip hazard for many users. A lower rail of 0.75m high can be added for children.

Source: Water and Sanitation for Disabled People and Other Vulnerable Groups.

(13.2) Steps

To make comfortable steps to the well, the rise of the steps should be at a maximum height of 0.15m

The run of the step should be maximum of 0.30m and all the steps should be identical. (See fig.2.2)

(13.3) WIDTH

The minimum width of the stair to the well should be 1.0m.

(13.4) HANDRAILS

The stairs should have grip-friendly handrails of diameter (Ø) approx. 32-38mm on both sides of the stair to avoid risks of fall and to support people going up and down the stairs with water.

The distance between the handrails and vertical wall surface should be minimum 50mm.

The handrails should continue unbroken along the stairs.

There should be double handrails at different heights i.e one at a height of 0.60m–0.70m from the ground level for the use of the children and for PWDs and one at a height of 0.80m-0.90m for the use of other users.

The handrails should end 0.3m from the top and at the bottom of the stairs. (See Chapter 2 about stairs)

Handrails should be made of preferably metal or any other approved strong and sturdy material.

The handrail surface should be neither too smooth nor rough.

Around the well, a safe railing should be placed to protect people especially children from falling into the well.

The railing should be installed at a height of 1.0m.

(13.5) STAIR SURFACE

The stairs surface should be hard and non-slippery.

(13.6) WATER TAP

The water tap should be 0.5m above water level, to avoid risk of getting dirty water into the jerrycan.

Chapter 14

Lifts

Accessible Standard

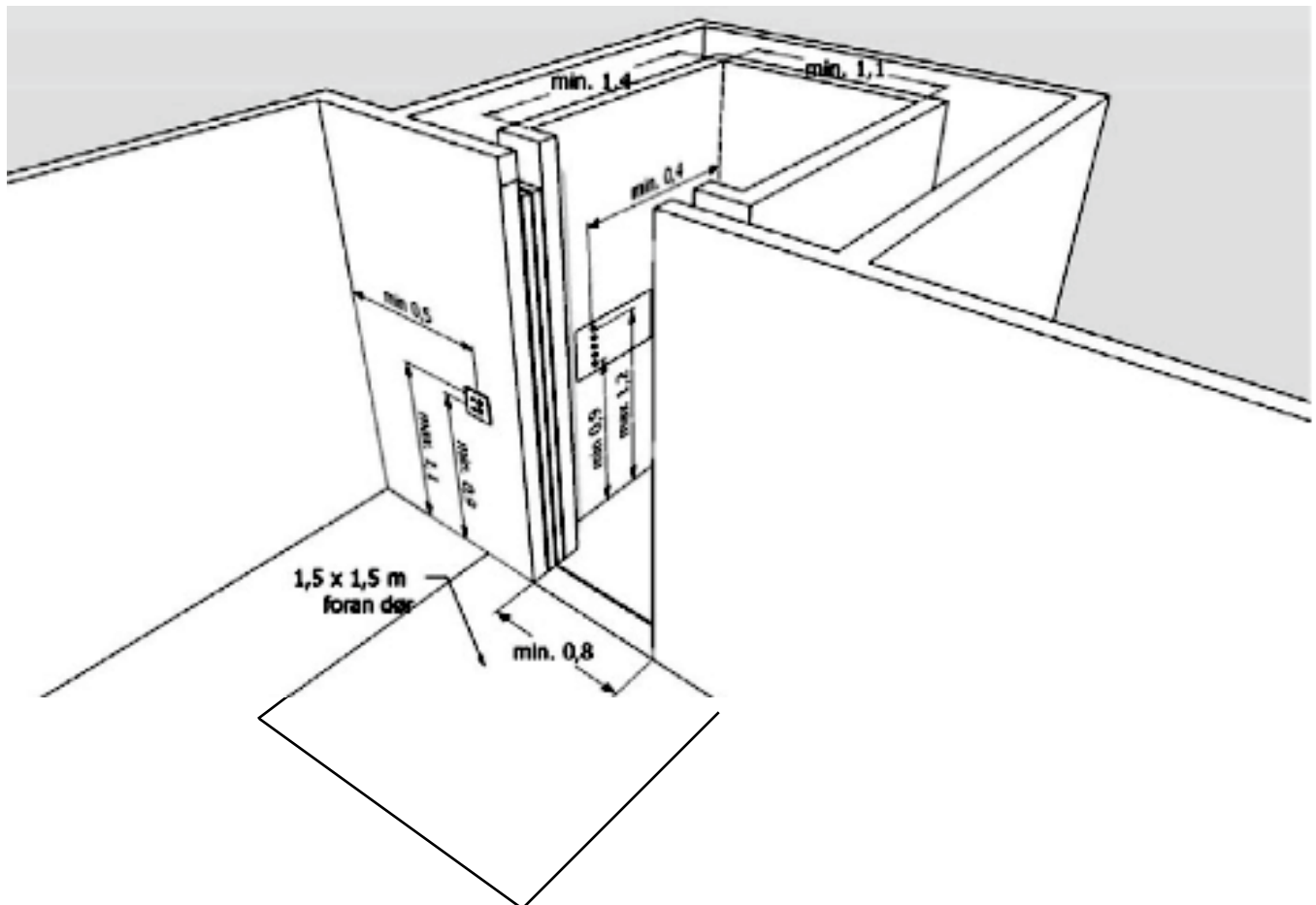


Fig. 14.1

Chapter 14

Lifts

Accessible Standard

(14.1) PLANNING PRINCIPLE

To provide well-dimensioned lifts in order to provide access to the different levels to all users including wheelchair users.

(14.2) ACCESS

In buildings with three floors and more, it is recommended to have at least one lift, which can be used at every floor even if the floors are at under ground level.

If the building has more than one staircase, there should be one lift for every staircase.

Lifts should be connected with accessible pathways. There should be no steps without ramps from outside the entrance to the lift.

(14.3) LANDING AREA

On each level, the lift should be served by horizontal landing area of minimum 1.5x1.5m, large enough for wheelchair users to turn or reverse into or out of the lift.

If down-going stairs are placed near the lift, the space between the lift door and the stairs should be minimum 2.0m to avoid the risk of a wheelchair user rolling down the stairs by coincidence.

(14.4) INTERNAL DIMENSION

The lift should have a minimum internal dimension of 1.10m (width) x 1.40m (depth) to allow easy maneuvering by a wheelchair user.

(14.5) SURFACE

The floor surface of the lift should be of non-slippery surface or material.

(14.6) CALL BUTTONS

The call button should be located at a minimum height between 0.90m-0.20m from the floor level.

The buttons should be marked with tactile markings for easy identification by the vision impaired.

There should be an audio facility within the lift to alert the blind and partially sighted persons of the current floor or destination.

It is necessary to provide visual and tactile indication of floor level next to call buttons.

(14.7) DOORS

Door(s) should be placed at the narrow end(s) of the lift and should have a minimum opening space of 0.80m wide.

If the doors are placed at a right angle to each other, the size of the lift should be minimum dimension of 1.8x1.8m.

Lift door closing mechanisms should be controllable to give adequate entry time for people with reduced mobility.

(14.8) CONTROL PANEL

The lifts should have control panel outside and within the lift cage. It should be located at a height between 0.90m-1.20m from the floor and minimum 0.5m from the corners.

The control panels should be clearly labeled and where possible fitted with voice direction.

Numbers should be embossed to be identifiable by touch and with contrasted colours, and all control buttons should be in braille.

The use of contrasted colours is recommended for all the lift equipment for the benefit of people with visual impairment.

(14.9) AUDIO-VISUAL SIGNALS

The lift should signal arrival to each floor by means of a bell, followed by audio announcement of the current destination and a light to alert the blind person and hearing-impaired passengers simultaneously.

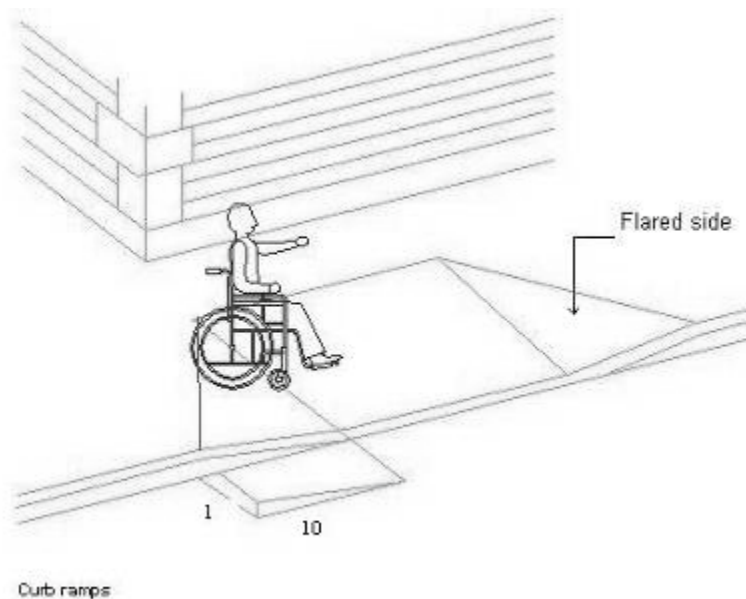
(14.10) RECOMMENDED EQUIPMENT

There should be handrails inside the lift mounted between 0.80m and 1.5m on either side from the floor.

Chapter 15

Urban Roads

Accessible Standard



(15.1) PLANNING PRINCIPLE

To construct roads in the urban settings that enable all users especially blind persons and persons with mobility difficulties to use them without any difficulty.

(15.2) CURB RAMPS

Curb ramps are used whenever there is a difference in level on pedestrian paths or between sidewalks and road surface at pedestrian crossings, parking areas, bus-stops or in front of building entrances.

The minimum width of the curb ramp should be 0.9m between two flared sides of minimum width of 1.20m.

Curb ramps should be gently sloping with the minimum slope at a ratio of 1:20 or 1:10 for short curbs and maximum slope of the flare should be 1:10.

There should be curb ramps whenever there is a public building along the road to ease access from the main road to the building entrance by a wheelchair user.

Curb ramps should be made of non-slippery materials.

At zebra/pedestrian crossings, curb ramps should be provided at both sides of the crossing.

(15.3) KERB STONES

At points where pathways are specifically designed to cross roads with heavy traffic, kerb stones should be avoided.

If they cannot be avoided, distant-placed kerbs with maximum height of 40mm should be used to enable the blind person to recognize the pavements.

Kerb stones should be painted in contrasting colours for easy identification by blind persons or persons with visual impairment.

Lower kerbs should be placed at points where pedestrians cross the road to enable wheelchair users cross the road without any obstructions.

(15.4) PATHWAY

The minimum width of an un-obstructed pathway adjacent to the road should be 0.9m and preferably 1.5m.

Pathways should be even, gently sloping and connected to the road by the curb ramp. This eases access to the pathway by wheelchair users.

The surface of an accessible pathway should be smooth, continuous, firm and non-slippery.

The pathway should be given a different texture

Chapter 15

Urban Roads

Accessible Standard

and colour finish for differentiation from the main road.

Pathways should be filled with tactile clues like Braille blocks as route finders for the blind.

It is important to define clearly the edge of the pathway or routes by using different colours and textures.

(15.5) SAFETY

Roads near or adjacent to an institution or facility serving PWDs should be fitted with both a hump and a zebra crossing, with a hump preceding the zebra crossing to slow down speeding vehicles.

Zebra crossings should be well connected to the pathway without any inconvenience and accessible to every road user.

Roads should have enough road signs to effectively guide the road user including PWDs.

There should be audio signals in addition to traffic lights to alert the visually impaired pedestrians to cross safely.

(15.6) STAGE

This refers to the designated stages of either buses or taxis for passenger boarding.

a. Design

At least one accessible route of 0.90m wide and gentle gradient of 1:10 should be provided from the boarding point of the bus stop to the sidewalk or main accessible pathway.

Curbs should be provided along the accessible path from the boarding point to the accessible pathway or to accessible entrance of the building.

b. Location

Stages should be positioned strategically to enable a wheelchair user approach it without any difficulty.

Whenever there is a difference in level between the drop-off area of the bus and the sidewalks or pathway, a curb ramp should be provided.

c. Shelter

A shelter should be provided at the bus stand for protection against rainy and sunny weather conditions.

Seats should be provided at the stages for people with reduced mobility.

The seat should be positioned with enough free space to allow easy movement of wheelchair users.

d. Information

Clear information on the bus numbers and names of all bus stops should be indicated on the stage area.

This information should be in large print, contrasting colour and well illuminated at night.

Chapter 16

Public Furniture

Accessible Standard

(16.1) PLANNING PRINCIPLE

To ensure that public furniture designed or imported for public use is accessible to PWDs.

(16.2) PUBLIC FURNITURE

This includes office furniture, seats at bus stops or resting areas and any other furniture designed for public use.

In this chapter, no architectural drawing has been provided. This is intentional due to different existing designs and fashions of furniture.

However, in whichever design or fashion of preferred furniture, the following should be put into consideration;

(16.3) Location

Public furniture should be placed in a conveniently accessible space.

There should be a free space of 1.30x0.80m provided near the public seat to allow maneuvering by a wheelchair user.

(16.4) Dimensions

Each seat should be between the height of 0.45m and 0.50m from the floor level.

The seat should have a depth of 0.45m to the back rest and width of 0.50m.

The Arm Rest should be mounted at a comfortable height of 0.20m above seat level.

In case of tables, the top of the tables should be between 0.75m and 0.80m.

(16.5) Materials

The seat should be made of or covered by soft material to make it comfortable especially for the disabled who use callipers.

(16.6) Counters

At every reception or where services are offered through counters, there should be a counter accessible to a wheelchair user.

The maximum height of an accessible counter should be 0.80m high.

Counters should have enough space below to enable a wheelchair user to freely reach the top with ease.

Counters should have a maximum height of 0.90m from the floor surface in order to be accessed by PWDs particularly wheelchair users.

The numbering of counters should be in large print or embossed to enable the visually impaired to independently access the right counter for a service.

Counters should not be located in corridors but in the open, with a large space to enable maneuvering by a wheelchair user.

