AGENZIA ITALIANA PER LA COOPERAZIONE ALLO SVILUPPO

HANDBOOK

FOR

ACCESSIBILITY IMPROVEMENT

IN PHCCs-PART 1

Umbedda District
Omdurman, Sudan

Purpose of the Handbook

This handbook has been realized in the framework of AID 11188 – DICTORNA project funded by the Italian Agency for Development Cooperation that aim to enhance, among other goals, the PHCC system through a family healt approach. The main purpose of this handbook is to offer some practical solution to cope with most spread architectural barriers detected in existing PHCCs in Umbedda District useful to achieve a good accessibility level.

Architectural barriers are hereby defined as: “physical obstacles that limit and impede the mobility of users (mainly and obviously all those with mobility impairments, regardless of their nature) and the lack of technical devices that prevent sensory disabled people, (the sight impaired, speaking and hearing impaired people in particular), from finding their way around, and recognising places and sources of danger”.

The concept of accessibility is defined by the article 9 of the Convention on the Rights of Persons with Disabilities Convention on the Rights of Persons with Disabilities Optional Protocol: “To enable to persons with disabilities access, on an equal basis with others, to the physical environment […] both in urban and in rural areas. These measures, which shall include the identification and elimination of obstacles and barriers to accessibility, shall apply to, inter alia:
a) Buildings, roads, transportation and other indoor and outdoor facilities, including schools, housing, medical facilities and workplaces […]”.

This concept is hereby extended to achieve a design that can be defined “inclusive”, taking into account, in addition to people with disabilities, any person who is motor or sensorial impaired such as pregnant women, people carrying children, person with temporary reduced mobility, wheelchair users, sight impaired people, overweight people, elderly people, speaking and hearing impaired people.

Part 1 purpose is to raise awareness about most common obstacles people have to cope in the Umbedda District’s PHCCs and give some practical recommendations to improve the accessibility in existing and, eventually, in new foreseen PHCC construction.

Part 2 contains the architectural barrier’s evaluation in 17 PHCCs in Umbedda District and specific recommendation to improve accessibility for each assessed Centre.

Methodology

This handbook is the result of a work that includes literature review, field visits, data collection, data analysis and possible solutions elaboration.
The sample adopted for field research is equal to 46% on the total number of Umbedda District PHCCs. In order to collect data about the building accessibility of the Umbedda PHCCs was adopted an evaluation method taking in consideration several elements of of 5 (five) functional categories composing the building that affect the most the circulation subdivided as follows:

a) Access to the building
    - A.1 Main gate
    - A.2 Access route to main door
    - A.3 Ramp access to the main door
    - A.4 Stepped access to the main door

b) Access into building
    - B.1 Main door

c) Horizontal and vertical circulation
    - C.1 Entrance hall reception
    - C.2 Internal doors
    - C.3 Corridors
    - C.4 Vertical links

d) Waiting areas
    - D.1 Waiting areas

e) Sanitary accommodation
    - E.1 Mobility and sensorial impaired people accessible toilet

A check-list for data collection on the field was drawn up in order to compare the state of the art of the functional categories mentioned above with the minimum standards required by the reference legislation: Access to and use of buildings: Approved Document M[1]. The criteria regulated by this legislation were adapted to the operational context of Umbedda District.

Collected data were processed to detect most common physical obstacles in each functional category and, according to the reference legislation, to provide solutions to cope with those architectural barriers.

The accessibility evaluation for each element of the above mentioned functional categories is in this handbook reported through tables. Here an example of how the table is designed:

1 - HM Government, 2015 edition incorporating 2016 amendments. United Kingdom: NBS (RIBA Enterprises Ltd)

Categories of mobility and sensorial impaired persons

Element	Main detected architectural barriers	Pregnant women	Person carrying children	Person temporary reduced mobility	Wheelchair user	Sight impaired	Overweight person	Elderly person	Speaking and hearing impaired person
Element n.1	Obstacle n.1 detected in element n.1								
	Obstacle n.2 detected in element n.1								
Element n.2	Obstacle n.1 detected in element n.2								
	Obstacle n.2 detected in element n.2								

Evaluation of the capacity of each category of mobility and sensorial impaired persons to cope with main detected architectural barriers:

	Good ability to cope with the detected architectural barrier
	The detected architectural barrier can be surpassed with difficulties
	The personal impairment doesn't allow the person to cope alone with the architectural barrier

After the understanding of the main detected obstacles, that lead to accessibility challenges, recommended solutions are proposed to improve the accessibility. For each recommended solution to be implemented, this handbook provides **design consideration** and **technical requirements** also through technical drawings in Annexes.

A second table is elaborated to show the accessibility improvement after the recommended solution implementation, for each element of the above mentioned functional categories.

Categories of mobility and sensorial impaired persons

Element	Recommended solution to improve accessibility	Pregnant women	Person carrying children	Person temporary reduced mobility	Wheelchair user	Sight impaired	Overweight person	Elderly person	Speaking and hearing impaired person
Element n.1	Recommended solution n.1 for element n.1								
	Recommended solution n.2 for element n.1								
Element n.2	Recommended solution n.1 for element n.2								
	Recommended solution n.2 for element n.2								

Evaluation of the accessibility improvement for each category of mobility and sensorial impaired people after the recommended solution implementation:

	Good accessibility improvement: the implementation of the recommended solution allows mobility and sensorial impaired people to easily move independently in the space
	Medium accessibility improvement: the implementation of the recommended solution allows mobility and sensorial impaired people to move independently, but with difficulties, in the space
	No accessibility improvement: the implementation of the recommended solution doesn't allow mobility and sensorial impaired people to move independently in the space

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1 . Access to the building

Access to the building is the functional category that takes in consideration every element composing the pathway from the site boundary to the main entrance. The analysed elements are:

A.1 – Main gate
A.2 – Access route to main door
A.3 – Ramp access to the main door
A.4 – Stepped access to the main door

1 . 1 Main detected architectural barriers

Element	Main detected architectural barriers	Pregnant women	Person carrying children	Person temporary reduced mobility	Wheelchair user	Sight impaired	Overweight person	Elderly person	Speaking and hearing impaired person
A.1 MAIN GATE	Absence of ramp between the road level to the compound level								
	The ramp between road level to compound level is in bad conditions								
A.2 ACCESS TOUTE TO MAIN DOOR	The route presents physical obstacles (holes and projection in the space)								
	The route presents one or more than one steps to reach the entrance								
	Inappropriate material (like sand, earth, gravel)								
A.3 RAMP ACCESS TO MAIN DOOR	Absence of a ramp to access the main door level								
	The ramp presents an excessive slope								
	The ramp is not handrail-equipped								
	The ramp is not clearly identified								
A.4 STEPPED ACCESS TO MAIN DOOR	The stairs are not handrail equipped								
	The stairs are not clearly identified								

1.2 Recommendations[1]

Objective:

The aim is to provide a suitable means of access for people from the entrance point at the boundary of the site to the building. It is also important that routes between buildings within a complex are also accessible.
In designing an approach to the building, it should be recognised that changes in level are difficult for many people to negotiate, including wheelchair users, people who need to use walking aids and people with impaired sight. The building should be designed, within the overall constraints of space, so that the difference in level between the entrance storey and the site entry point is minimised. It is also important that potential hazards on access routes adjacent to buildings, e.g. open windows, are avoided so that people, particularly children and those with impaired sight or hearing, are not injured.

A.1 - Main gate: design considerations

As far as possible, main gate level should be at the road level. Where a difference in level between the main gate and the road is unavoidable due to site constraints, the approach may have a ramp. Generally, gradients within the approach should be as gentle as possible. The width of the main gate should allow wheelchair users easy entrance.
Technical requirements:

a) the gradient along the ramp length is either no steeper than 1:20 with level landings introduced for each 50cm rise of the access;
b) ramp surface is firm, durable and slip resistant. Inappropriate materials might be loose sand or gravel;
c) the width of people access is at least 78cm.

A.2 - Access route to main door: design considerations

As far as possible, access should be level from the boundary of the site. Where a difference in level between the main gate and the building is unavoidable due to site constraints, the approach may have a gentle gradient over a long distance. Generally, gradients within the approach should be as gentle as possible. All access routes to principal, or alternative accessible, entrances should be surfaced so that people are able to travel along them easily, without excessive effort and without the risk of tripping or falling. There should be sufficient space for people to approach the building, pass others who are travelling in the opposite direction and carry out all necessary manoeuvres. It is important to reduce the risks to people, particularly people with impaired sight, when approaching and passing around the perimeter of the building under all lighting conditions.
Technical requirements:

a) it has a surface width of at least 150cm, with passing places, free of

1- in part from (DCLG, The Building Regulations 2010: Approved document M: Access to and use of buildings, Vol. 2: building other than dwellings, 2015)

obstructions to a height of 210cm;

b) the gradient along its length is either no steeper than 1:20 with level landings introduced for each 50cm rise of the access;
c) its surface is firm, durable and slip resistant. Inappropriate materials might be loose sand or gravel;
d) the route to the principal entrance (or alternative accessible entrance) is clearly identified and well lit;
e) the danger of inadvertently walking into a vehicular access route is minimised by providing a separate pedestrian route.

A.3 Ramp access to main door: design considerations

If site constraints necessitate an approach of 1:20 or steeper, an approach incorporating ramped access should be provided. Ramps are beneficial for wheelchair users and people pushing prams, pushchairs and bicycles. Gradients should be as shallow as practicable, as steep gradients create difficulties for some wheelchair users who lack the strength to propel themselves up a slope or have difficulty in slowing down or stopping when descending. Ramps are also not necessarily safe and convenient for mobility impaired people. For example, some people who can walk but have restricted mobility find it more difficult to negotiate a ramp than a stair. In addition, adverse weather conditions increase the risk of slipping on a ramp. It is therefore beneficial to have steps as well as a ramp. Wheelchair users need adequate space to stop on landings, to open and pass through doors without having to reverse into circulation routes or to face the risk of rolling back down slopes. Some people have a weakness on one side. This leads to a requirement for support at both sides of ramps.

Technical requirements:

a) it has flights width between enclosing walls, strings or upstands is not less than 150cm;
b) the gradient along its length is either no steeper than 1:20 with level landings introduced for each 50cm rise of the access;
c) its surface is firm, durable and slip resistant. Inappropriate materials might be loose sand or gravel;
d) It is clearly identified and well lit;
e) there is a continuous handrail on each side of a flight and landings;

See Annex 3 for details.

A.4 Stepped access to main door: design considerations

Sight impaired people risk tripping or losing their balance if there is no warning that steps provide a change in level. The risk is most hazardous at the head of a flight of steps when a person is descending.

The warning should be placed sufficiently in advance of the hazard to allow time to stop and not be so narrow that it might be missed in a single stride. Materials for treads should not present a slip hazard, especially when the surface is wet. People should be able to appreciate easily where to place their feet by highlighting nosings and avoiding open rises.

People with a weakness on one side or sight impaired need the dimensions of the tread to be sufficient for them to be able to place their feet square onto it.

Many mobility impaired people find it easier to negotiate a flight of steps than a ramp and, for these people, the presence of handrails for support is essential.

Technical requirements:

a) it has flights width between enclosing walls, strings or upstands is not less than 120cm;
b) level landing is provided at the top and bottom of each flight (not less than 120cm);
c) the rise of each step is between 15cm and 17cm;
d) the going of each step is between 28cm and 42cm;
e) there is a continuous handrail on each side of a flight and landings;
f) the rise of a flight between landings contains no more than 12 risers for a going of less than 35cm and no more than 18 risers for a going of 35cm or greater.

See Annex 4 for details

Accessibility improvement

Element	Recommended solution to improve accessibility	Pregnant women	Person carrying children	Person temporary reduced mobility	Wheelchair user	Sight impaired	Overweight person	Elderly person	Speaking and hearing impaired person
A.1 MAIN GATE	Provision of a ramp for the access for the width of the main gate								
A.2 ACCESS TOUTE TO MAIN DOOR	Removal physical obstacles: cover all holes and remove projections								
	Provision of sweet slopes as an alternative to single steps in the access route								
	Provision of a concrete paving								
A.3 RAMP ACCESS TO MAIN DOOR	Provision of a ramp where it is absent as an alternative to stepped access								
	Existing ramp extension to reduce the slope								
	Installation of handrails in both sides of the ramp								
	Identification of the ramp through panels, pictograms and light								
A.4 STEPPED ACCESS TO MAIN DOOR	Installation of handrails in both sides of the ramp								
	Identification of the stairs through panels, pictograms and light								

2 . Access into the building

Access into the building is the functional category that takes in consideration the main entrance's features. The analysed element is the door and its surrounding space.

2 . 1 Main detected architectural barriers

Element	Main detected architectural barriers	Pregnant women	Person carrying children	Person temporary reduced mobility	Wheelchair user	Sight impaired	Overweight person	Elderly person	Speaking and hearing impaired person
B.1 MAIN DOOR	Main door is not clearly identified								
	Absence of level landing 150x150cm								
	Threshold height is between 1.5 and 5cm								
	Threshold is higher than 5cm								

2.2 Recommendations[1]

Objective:

The aim for all new buildings is for the principal entrance or entrances and any main staff entrance, and any lobbies, to be accessible. Where it is not possible, e.g. in an existing building, for the principal or main staff entrance or entrances to be accessible, an alternative accessible entrance should be provided. It is important to reduce the risks to people when entering the building.

1- in part from (DCLG, The Building Regulations 2010: Approved document M: Access to and use of buildings, Vol. 2: building other than dwellings, 2015)

B.1 - Main door: design considerations

Steeply sloping or restricted sites sometimes make it impossible for the principal to be accessible. Accessible entrances should be clearly sign-posted and easily recognisable. Any structural elements, for example supports for a canopy, are useful in identifying the entrance, but should not present a hazard.

The route from the exterior across the threshold should not present a barrier for wheelchair users or a trip hazard for other people. A level threshold is preferred, especially for doors in frequent use.

Technical requirements:

a) Is clearly sign-posted, incorporating the International Symbol of Access;
b) Is easily identified among the other elements of the building and the immediate environment, e.g. by lighting and/or visual contrast;
c) there is a level landing at least 150 x 150cm, clear of any door swings, immediately in front of the entrance and of a material that does not impede the movement of wheelchairs;
d) the threshold is level or it has a total height of not more than 15mm;
e) door width is at least 78cm.

Accessibility improvement

Element	Recommended solution to improve accessibility	Pregnant women	Person carrying children	Person temporary reduced mobility	Wheelchair user	Sight impaired	Overweight person	Elderly person	Speaking and hearing impaired person
B.1 MAIN DOOR	Clear identification through panels, pictograms and light								
	Where possible, 150 x 150cm free of obstruction in front of the main door								
	Provision of sweet slopes to cope with the threshold height								

3. Horizontal and vertical circulation

Horizontal and vertical circulation is the functional category that takes in consideration every element that can affect the freedom of movement inside the building. The analysed elements are:

C.1 – Entrance hall reception
C.2 – Internal doors
C.3 – Corridors
C.4 – Vertical links

3 . 1 Main detected architectural barriers

Element	Main detected architectural barriers	Pregnant women	Person carrying children	Person temporary reduced mobility	Wheelchair user	Sight impaired	Overweight person	Elderly person	Speaking and hearing impaired person
C.1 ENTRANCE HALL AND RECEPTION	Reception desk is not clearly identified								
	Deception desk is not design to accommodate seated visitors								
C.2 INTERNAL DOORS	Doors frames do not contrast visually with the walls								
	Threshold height is higher than 15mm								
	Room functions are not clearly identified through panels								
C.3 CORRIDORS	The floor is not predominantly level								
C.4 VERTICAL LINKS	Handrails are not presents in both sides				/				
	Steps are not clearly identified				/				

3.2 Recommendations[1]

Objective:

The objective is for all people to travel vertically and horizontally within buildings conveniently and without discomfort in order to make use of all relevant facilities. This objective relates in the main, but not exclusively, to the provision of sufficient space for wheelchair manoeuvre and design features that make it possible for people to travel independently within buildings.

C.1 - Entrance hall and reception: design considerations

As the entrance hall is the first point of contact with a building's activities and resources, the reception area in particular should not only be easily accessible but also convenient to use.

Where a service building has a reception or sales counter, there should be convenient access to it and part of it should be at a level suitable for a wheelchair user or a seated person. Any lower section should also be wheelchair-accessible on the reception side.

Designers should also be aware that glazed screens in front of the reception point, or light sources or reflective wall surfaces, such as glazed screens, located behind the reception point, could compromise the ability of a person with a hearing impairment to lip read or follow sign language.

It should be possible for information about the building to be easily obtained from a reception point or gathered from notice boards and signs.

Technical requirements:

a) any reception point is located away from the principal entrance (while still providing a view of it) where there is a risk that external noise will be a problem;
b) any reception point is easily identifiable from the entrance door, and the approach to it is direct and free from obstructions;
c) the design of the approach to any reception point allows space for wheelchair users to gain access to the reception point;
d) the clear manoeuvring space in front of any reception desk or counter is 120cm deep and 180cm wide if there is a knee recess at least 50cm deep, or 140cm deep and 220cm wide if there is no knee recess;
e) any reception desk or counter is designed to accommodate both standing and seated visitors, with its surface no higher than 76cm above floor level;
f) the floor surface is slip resistant.

1- in part from (DCLG, The Building Regulations 2010: Approved document M: Access to and use of buildings, Vol. 2: building other than dwellings, 2015)

C.2 - Internal doors: design considerations

Since doors are potential barriers, their use should be avoided whenever appropriate. The presence of doors, whether open or closed, should be apparent to sight impaired people through the careful choice of colour and material for the door and its surroundings. For example, when a door is open, sight impaired people should be able to identify the door opening within the wall, as well as the leading edge of the door.

Technical requirements:

a) all door opening furniture contrasts visually with the surface of the door;
b) the door frames contrast visually with the surrounding wall;
c) the threshold is level or, if a raised threshold is unavoidable, it has a total height of not more than 15mm;
d) if is not possible to have a 15mm maximum threshold a ramp is provided according to A.3 (access ramp) technical requirements.
e) the width is at least 78cm.

C.3 - Corridors: design considerations

Corridors and passageways should be wide enough to allow people with buggies, people carrying cases or people on crutches to pass others on the access route. Wheelchair users should also have access to adjacent rooms and spaces, be able to pass other people and, where necessary, turn through 180°. Corridors narrower than indicate, or localised narrowing (e.g. at archways), might be reasonable in some locations, such as in existing buildings or in some extensions.

In order to help people with visual impairment to appreciate the size of a space they have entered, or to find their way around, there should be a visual contrast between the wall and the ceiling, and between the wall and the floor. Such attention to surface finishes should be coupled with good natural and artificial lighting design.

Technical requirements:

a) they have an unobstructed width (excluding any projections into the space) along their length of at least 120cm;
b) the floor is level or predominantly level, with any section with a gradient of 1:20 or steeper designed in accordance with Annex 3.

C.4 - Vertical links: design considerations

For all buildings, a passenger lift is the most suitable form of access for people moving from one storey to another. A passenger lift is the most suitable means of vertical access and should be provided wherever possible. However, given several constraints, it may not always be possible to install a passenger lift that would be suitable for use by all, and other options may need to be considered to provide for users with mobility impairments. To cope with the absence of the lift, every main function have to be provided at the ground floor (reception,

doctor rooms, laboratory test, delivery room, toilet, …).
Stairs technical requirements:

a) it has flights width between enclosing walls, strings or upstands is not less than 120cm;
b) level landing is provided at the top and bottom of each flight (not less than 120cm);
c) the rise of each step is between 15cm and 17cm;
d) the going of each step is between 28cm and 42,5cm;
e) there is a continuous handrail on each side of a flight and landings;
f) the rise of a flight between landings contains no more than 12 risers for a going of less than 35cm and no more than 18 risers for a going of 35cm or greater.

See Annex 4 for details

Accessibility improvement

Element	Recommended solution to improve accessibility	Pregnant women	Person carrying children	Person temporary reduced mobility	Wheelchair user	Sight impaired	Overweight person	Elderly person	Speaking and hearing impaired person
C.1 ENTRANCE HALL AND RECEPTION	Identification of the reception through panels, pictograms, light or colour path on the floor								
	Lower of the lowest point of the reception desk to 76cm								
C.2 INTERNAL DOORS	Re-painting doors and frames to have a visual contrast with the surrounding walls								
	Provision of sweet slopes to cope with threshold height (Annex 3)								
	Identification of room functions with the installation of bigger panels and pictograms								
C.3 CORRIDORS	Provision of sweet slopes to cope with different levels (Annex 3)								
C.4 VERTICAL LINKS	Installation of handrails in both sides of the ramp				/				
	Identification of the stairs through panels, pictograms and light				/				

4 . Waiting areas

Waiting areas is the functional category that takes in account every area suitable to accommodate patients in the time between the reception registration and the doctor visit or the laboratory tests.

4 .1 Main detected architectural barrier

Element	Main detected architectural barriers	Pregnant women	Person carrying children	Person temporary reduced mobility	Wheelchair user	Sight impaired	Overweight person	Elderly person	Speaking and hearing impaired person
D.1 WAITING AREA	No clear space allowance for an occupied wheelchair	/	/	/			/	/	/

4.2 Recommendations

Objective:

The aim is to provide a clearly identified space for at least one occupied wheelchair in the waiting areas.

B.1 - Main door: design considerations

A clear identified space for an occupied wheelchair should be provided in the waiting area to insure that wheelchair users can have a safe zone without occupying corridors.

Technical requirements:

a) a clear identified space dedicate to wheelchair users is identified through floor lines or panels with pictograms;
b) the space for an occupied wheelchair is 90cm wide by 140cm deep.

Accessibility improvement

Element	Recommended solution to improve accessibility	Pregnant women	Person carrying children	Person temporary reduced mobility	Wheelchair user	Sight impaired	Overweight person	Elderly person	Speaking and hearing impaired person
D.1 WAITING AREA	No clear space allowance for an occupied wheelchair	/	/	/			/	/	/

5. Sanitary accomodation

Sanitary accommodation is the functional category taking in account the toilets and bathrooms.

5 .1 Main detected architectural barrier

Element	Main detected architectural barriers	Pregnant women	Person carrying children	Person temporary reduced mobility	Wheelchair user	Sight impaired	Overweight person	Elderly person	Speaking and hearing impaired person
E.1 MOBILITY AND SENSORIAL IMPAIRED PEOPLE ACCESSIBLE TOILET	Absence of one mobility and sensorial impaired people accessible toilet inside the main building								
	When toilets are outside, the pathway between the main building and the mobility and sensorial impaired people toilet is not satisfying A.2 recommended requirements								
	The space provided for manoeuvring is not enough to enable wheelchair users to adopt various transfer techniques that allow independent or assisted use								
	Absence of wall-mounted grab rail								

Please note:

The state of the art of existing sanitary accommodation in most of the cases doesn't allow soft rehabilitation works to make them accessible to wheelchair users:

- In 14 (fourteen) PHCCs, among the 17 PHCCs taken as sample, the existing toilets dimensions doesn't allow soft rehabilitation works to make them accessible to mobility and sensorial impaired people. Partial demolition and re-building works are necessary to meet the technical requirements.
- In 15 (fifteen) PHCCs, among the 17 PHCCs taken as sample, the toilet is a stand-alone block within the compound and separated from the main building. The access route from the main building to the toiled block is always not satisfying A.2 (access route) requirements.
- In only 2 (two) PHCCs, among the 17 PHCCs taken as sample, the existing toilets dimensions allow soft rehabilitation works to make them accessible to mobility and sensorial impaired people.

Moreover:

- In 1 (one) PHCC, among the 17 PHCCs taken as sample, a toilet is absent.
- In 5 (five) PHCCs, among the 17 PHCCs taken as sample, water supply is currently absent.

To meet the reference legislation's minimum requirements on accessibility in each PHCC a feasibility study prior the preliminary and executive architectural and plant design is needed centre by centre. This is due to the various architectural, sewage and water plant constraints. The following recommendation are intended to be followed in each further single-case toilet rehabilitation design or in each new construction design.

5.2 Recommendations[1]

Objective:

In principle, suitable sanitary accommodation should be available to everybody, including sanitary accommodation designed for pregnant women, people carrying children, person with temporary reduced mobility, wheelchair users, sight impaired people, overweight people, elderly people, speaking and hearing impaired people.

E.1 - Mobility and sensorial impaired people accessible toilet: design considerations

Toilet accommodation needs to be suitable, not only for disabled people, but for all people who use the building. For wheelchair users in particular, a unisex toilet is always the preferred option since, if necessary, a partner or carer of a

1- in part from (DCLG, The Building Regulations 2010: Approved document M: Access to and use of buildings, Vol. 2: building other than dwellings, 2015)

different sex can enter to give assistance.
Wheelchair users should be able to approach, transfer to and use the sanitary facilities provided within a building. This requires the provision of a wheelchair accessible unisex toilet. The relationship of the WC to the finger rinse basin and other accessories should allow a person to wash and dry hands while seated on the WC. The space provided for manoeuvring should enable wheelchair users to adopt various transfer techniques that allow independent or assisted use. It is important that the transfer space alongside the WC is kept clear to the back wall. When transferring to and from their wheelchair, some people need horizontal support rails. The rail on the open side is a drop-down rail, but on the wall side, it can be a wall-mounted grab rail (which is thought to give a more rigid handhold) set at a greater distance than normal from the wall or, alternatively, a second drop-down rail in addition to the wall-mounted grab rail where the grab rail is spaced at the minimum distance from the wall and therefore does not give the same degree of support.
Technical requirement:

a) one is located as close as possible to the entrance and/or waiting area of the building;
b) they are not located in a way that compromises the privacy of users;
c) they are located on accessible routes that are direct and obstruction free;
d) if located outside the main building, the access route is satisfying element A.2 (access route) technical requirements.
e) The space provided for manoeuvring should enable wheelchair users to adopt various transfer techniques that allow independent or assisted use. The minimum overall dimensions of a wheelchair-accessible unisex toilet is 220 x 150cm;
f) doors are preferably outward opening and are fitted with a horizontal closing bar fixed to the inside face;
g) doors have a width of 78cm and is satisfying C.2 (internal doors) technical requirements;
h) where the horizontal support rail on the wall adjacent to the WC is set with the minimum spacing from the wall, an additional drop-down rail is provided on the wall side at a distance of 32cm from the centre line of the WC;
i) where the horizontal support rail on the wall adjacent to the WC is set so that its centre line is 40cm from the centre line of the WC, there is no additional drop-down rail;
j) an emergency assistance alarm system is provided;
k) the emergency assistance call signal outside the toilet compartment is located so that it can be easily seen and heard by those able to give assistance;

See Annex 5 for details.

Accessibility improvement

Element	Main detected architectural barriers	Pregnant women	Person carrying children	Person temporary reduced mobility	Wheelchair user	Sight impaired	Overweight person	Elderly person	Speaking and hearing impaired person
E.1 MOBILITY AND SENSORIAL IMPAIRED PEOPLE ACCESSIBLE TOILET	Provision of a one mobility and sensorial impaired people accessible toilet inside the main building (E.1 technical requirements)								
	When toilets are outside, pathways features are satisfying A.2 requirements								
	Toilet's minimum dimensions are 220x150cm								
	Provision of wall-mounted grab rail								
	Door is satisfying C.2 (internal door) requirements and are outward opening								

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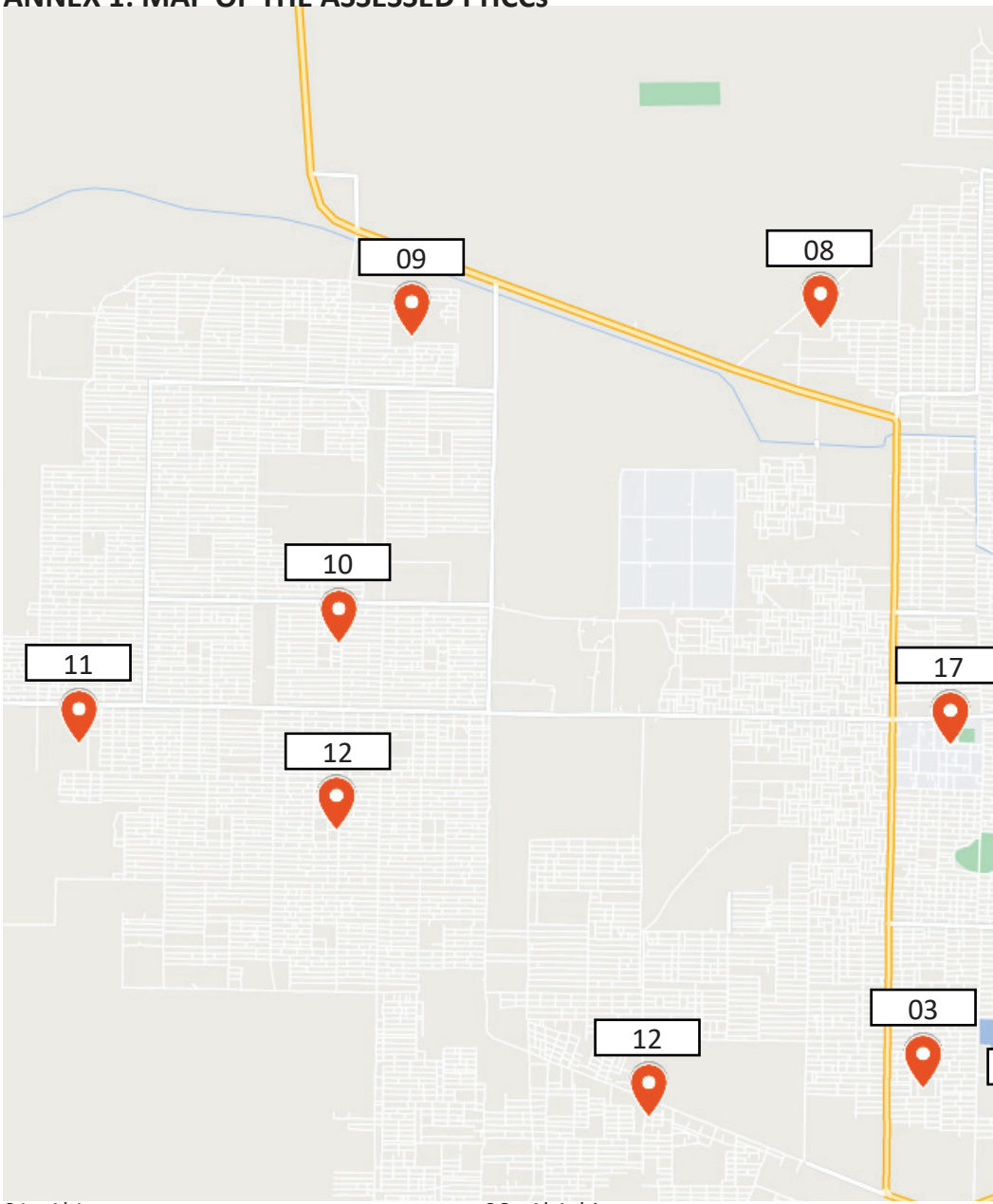
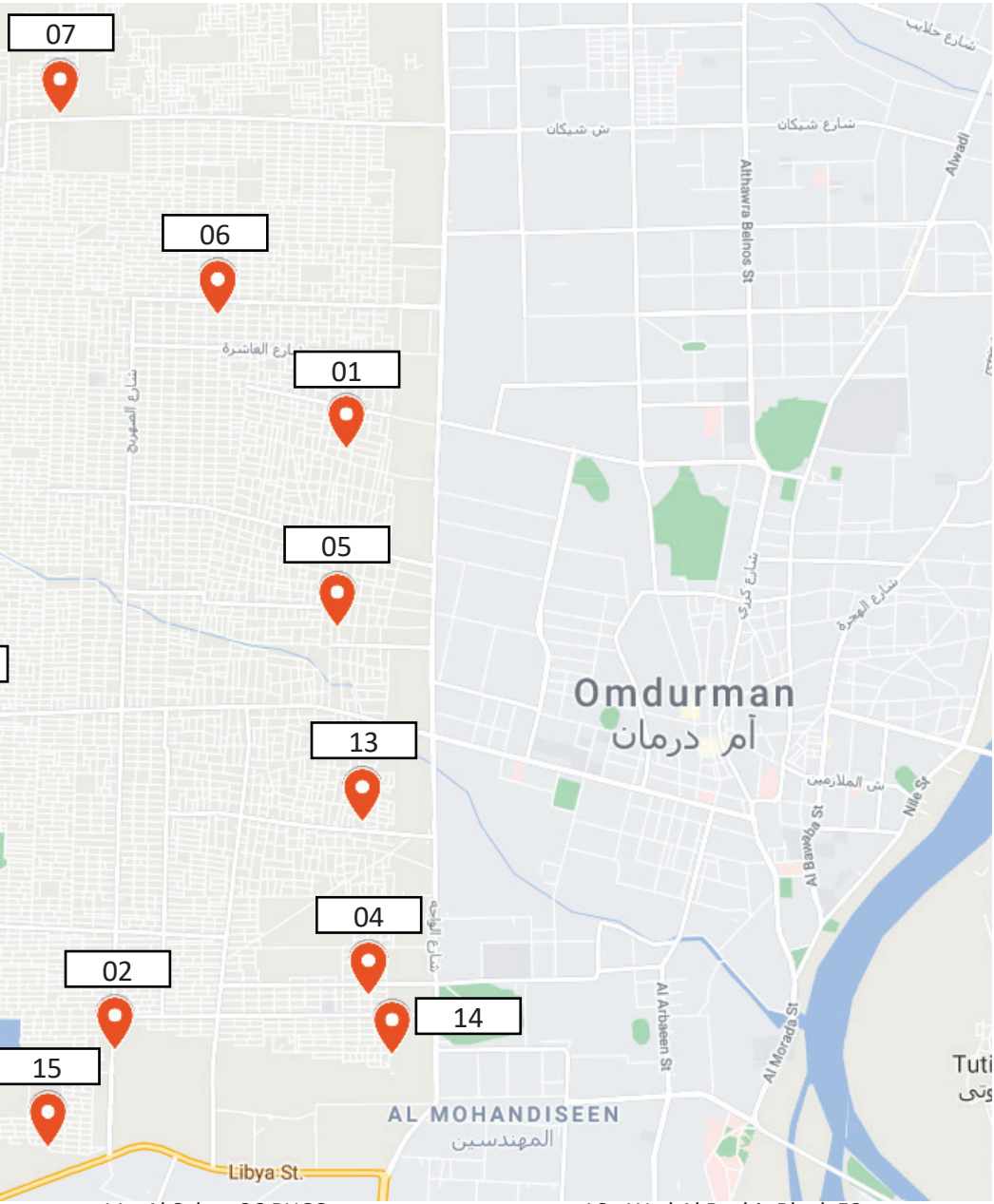
ANNEX 1: MAP OF THE ASSESSED PHCCs



01 - Al Jose
02 - Al Manara
03 - Bedr Al Kubra
04 - Al Rachideen
05 - Al Rakha
06 - Al Ashira
07 - Al Fathimap
08 - Al Markhiat
09 - Al Salam 23 PHCC
10 - OVCI Dar Es Salam



11 - Al Salam 36 PHCC
12 - AlSalam 17 PHCC
13 - Al Sapil
14 - Hamad Al Nil
15 - Dar Al Moustapha
16 - Wad Al Bachir Block 52
17 - Abu Zaeid

ANNEX 2: CHECKLIST FOR ACCESSIBILITY ASSESSMENT

PHCC	insert name	GPS	insert gps

A - ACCESS TO THE BUILDING			
A.1 - MAIN GATE	**YES**	**NO**	**NA**
Minimum effective width of gate used by the general public IS 77,5cm			
Road level entrance			
Ramp from road level to the courtyard level			
A.2 - ACCESS ROUTE TO MAIN DOOR			
The route to the principal entrance is clearly identified			
Appropriate material (firm surface, durable and slip resistant)			
Width of at least 150cm free of obstructions to a height of 210cm			
Separate pedestrian and vehicular routes			
Gradient along its length is either no steeper than 1,6% along its length or less than 5% with level landings each 50cm rise			
The route is free from physical obstacles			
The route do not presents steps			
A.3 - RAMP ACCESS TO MAIN DOOR			
Width of at least 150cm			
Flights are max 10m long with a max rise 50cm			
There is a landing at the foot and head of the ramp at least 120cm long and clear of any door swings or other obstructions			
Appropriate material (firm surface, durable and slip resistant)			
Handrail on both sides (min height 90cm; max height 100cm)			
The ramp is clearly identified and well lit			
A.4 - STEPPED ACCESS TO MAIN DOOR			
Width of at least 120cm			
Handrail on both sides (min height 90cm; max height 100cm)			
The rise of each step is between 15cm and 17cm			
The going of each step is between 28cm and 42cm			
The step access is clearly identified and well lit			

B - ACCESS INTO BUILDING			
B.1 - MAIN DOOR FRATURES	**YES**	**NO**	**NA**
Main entrance is clearly identified and well lit			
Presence of level landing at least 150cm x 150cm, clear of any door swings, immediately in front of the main entrance			
Threshold has a max height of 15mm			
Minimum effective widths of door used by the general public: 77,5cm			

C - HORIZONTAL AND VERTICAL CIRCULATION			
C.1 - ENTRANCE AND RECEPTION AREA	**YES**	**NO**	**NA**
Reception point is located away from the principal entrance (while still providing a view of it)			
Reception point is easily identifiable from the entrance doors, and the approach to it is direct and free from obstructions			
The clear manoeuvring space in front of reception desk is 140cm deep and 220cm wide			
Reception desk is designed to accommodate both standing and seated visitors with its surface no higher than 76cm			
The floor surface is slip resistant			
C.2 - INTERNAL DOORS			
Minimum effective width of doors used by the general public: 77,5cm			
Door frames contrast visually with the surrounding wall			
Threshold has a max height of 15mm			
Room functions are clearly identified through panels			
C.3 - CORRIDORS AND PASSAGEWAYS			
The floor is level or predominantly level			
Floor finishes are slip resistant			
Unobstructed width (excluding any projections into the space) along their length of at least 120cm			
Passing places at least 180cm long and with an unobstructed width of at least 180cm at reasonable intervals, e.g. at corridor junctions			

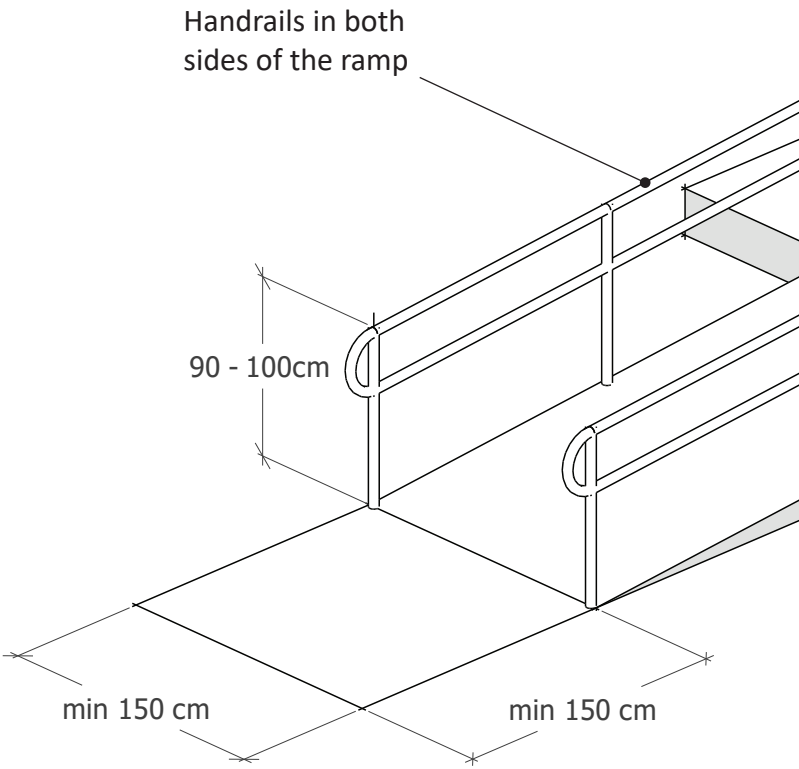
C.4 - VERTICAL LINKS			
A lift is present when the building presents more than one stories			
Lift dimensions are 140cm deep and 150cm wide, with a clear entrance width of 80cm			
A stair-lift is present when the building presents more than one stories			
The steps are clearly identified and well lit			
Handrail on both sides (min height 90cm; max height 100cm)			
The rise of each step is between 15cm and 17cm			
The going of each step is between 28cm and 42cm			

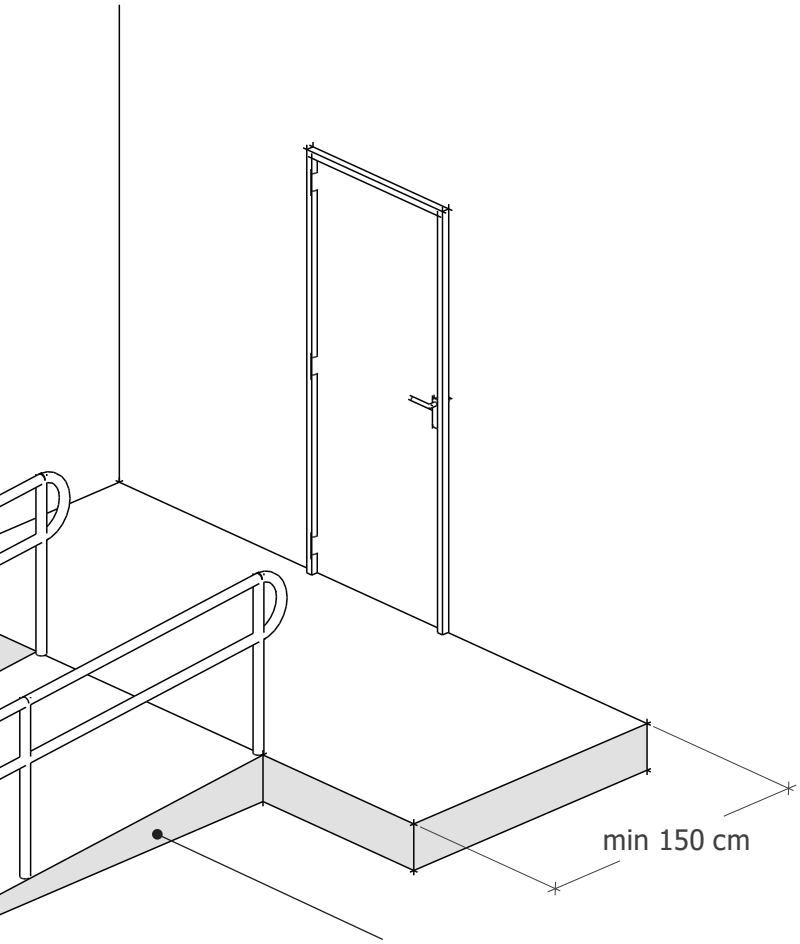
D - WAITING AREAS			
D.1 - WAITING AREA	**YES**	**NO**	**NA**
At least one clear space allowance for an occupied wheelchair 90cm wide by 140cm deep			
Unobstructed width passage along of at least 120cm around to reach corridors and rooms			

E - SANITARY ACCOMODATION			
E.1 - MOBILITY AND SENSORIAL IMPAIRED PEOPLE ACCESSIBLE TOILET	**YES**	**NO**	**NA**
Presence of one mobility and sensorial impaired people accessible toilet inside the main building			
Presence of one mobility and sensorial impaired people accessible toilet inside the main building ground floor			
Presence of one mobility and sensorial impaired people accessible toilet outside the main building			
If outside, the pathway between the main building and the mobility and sensorial impaired people toilet is satisfying A.2 requirements			
The space provided for manoeuvring enable wheelchair users to adopt various transfer techniques that allow independent or assisted use (150cm diameter circle)			
Presence of wall-mounted grab rail			

NOTES

ANNEX 3: RAMP DIMENSION DETAILS

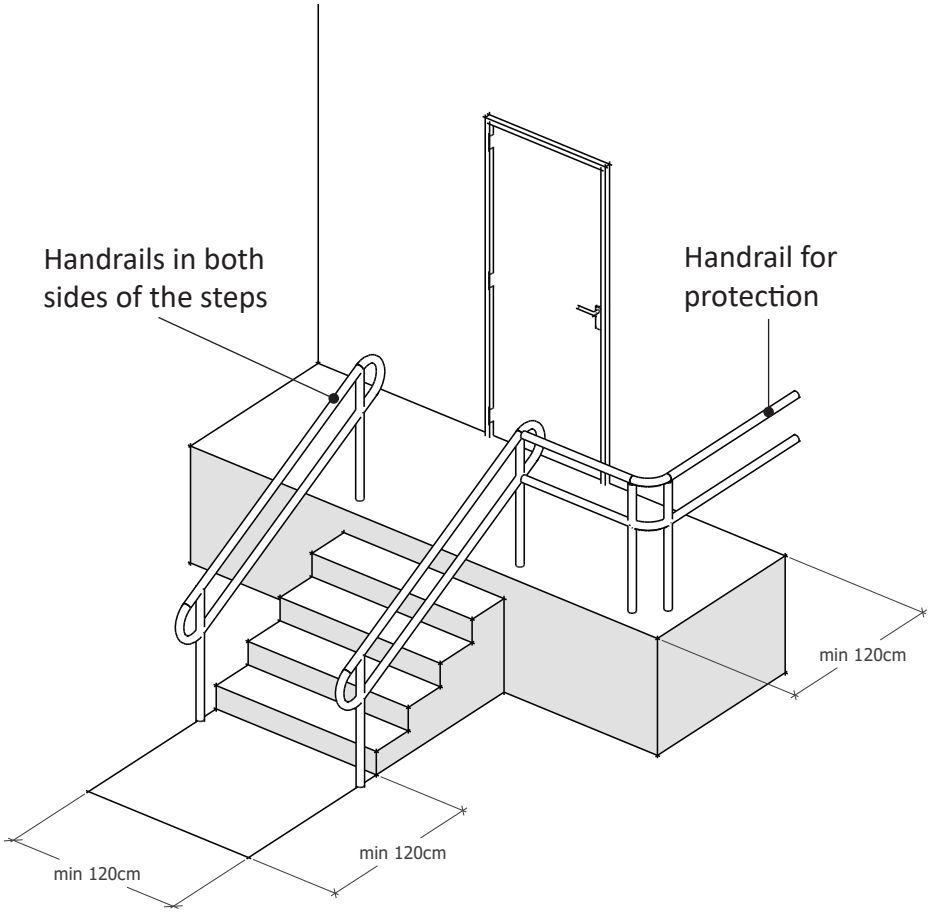




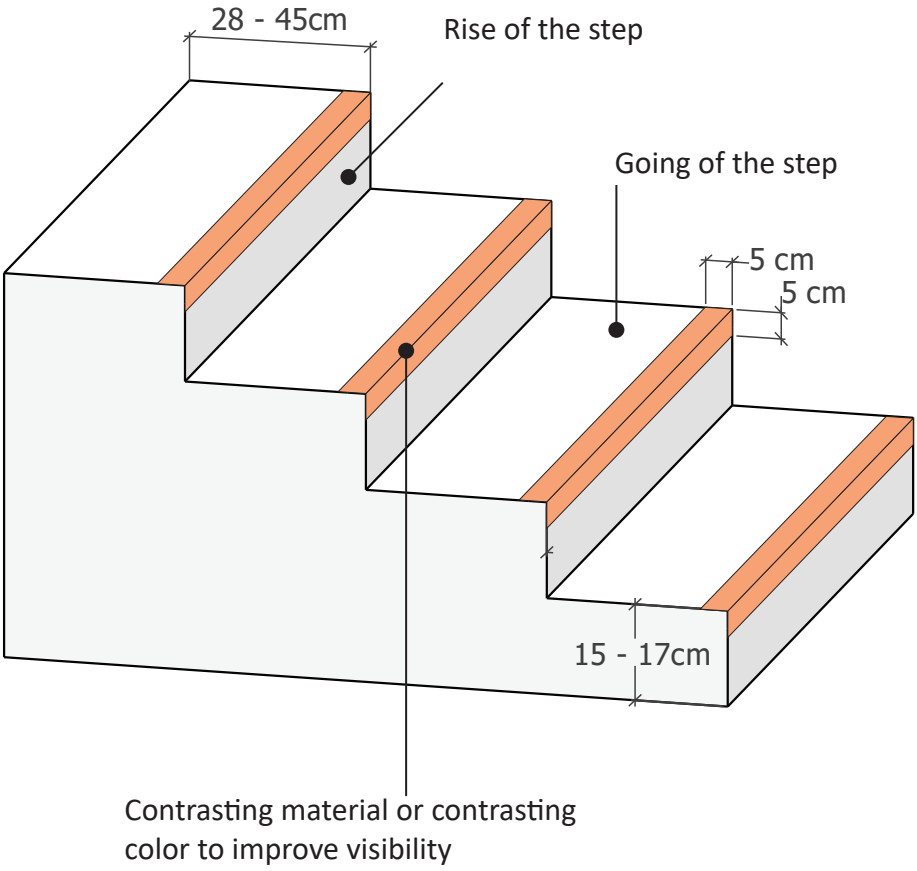
- Preferred gradient: 1 : 20

Acceptable gradient 1 : 12,5

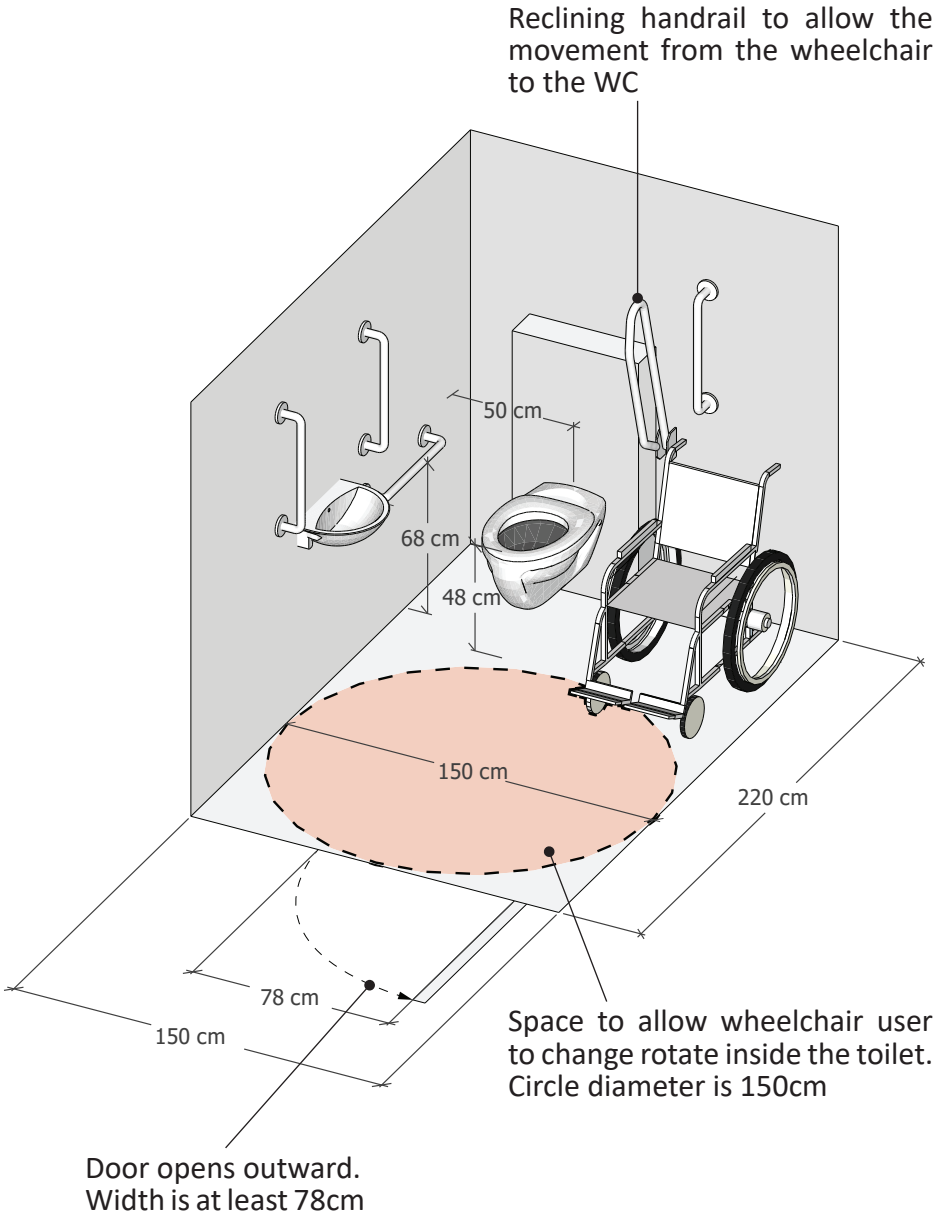
ANNEX 4: STEPS DIMENSION DETAILS

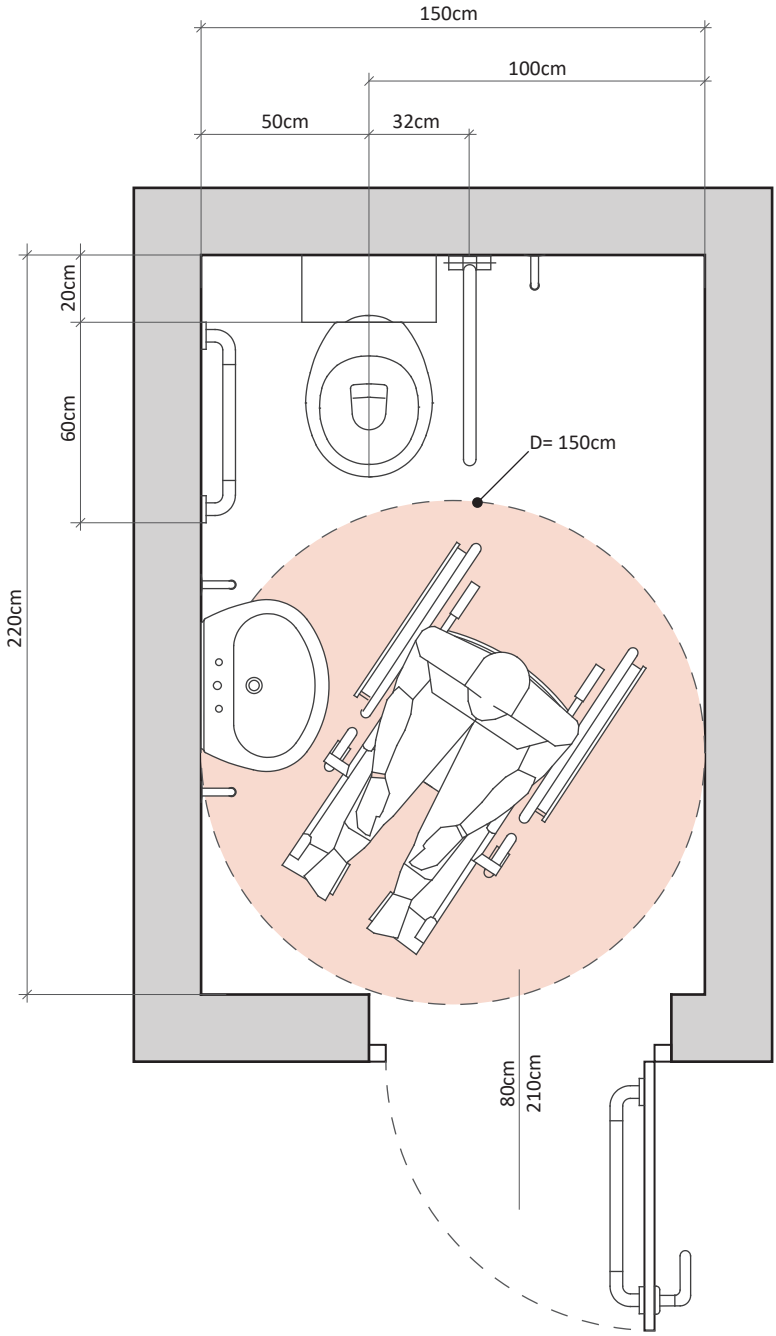


Remember:
The rise of a flight between landings contains no more than 12 risers for a going of less than 35cm and no more than 18 risers for a going of 35cm or greater.


28 - 45cm
Rise of the step
Going of the step
5 cm
5 cm
15 - 17cm
Contrasting material or contrasting
color to improve visibility

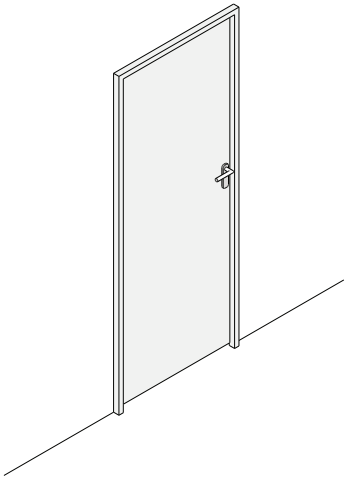
ANNEX 5: WHEELCHAIR ACCESSIBLE TOILET DIMENSION DETAILS

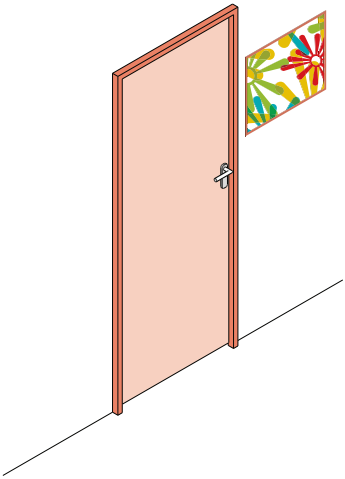



150cm
100cm
50cm
32cm
20cm
60cm
220cm
D= 150cm
80cm
210cm

ANNEX 6: RECOMMENDED SOLUTION ILLUSTRATIONS

Re-painting doors and frames to have a visual contrast with the surrounding walls and provision of panel to clearly identify room's function.

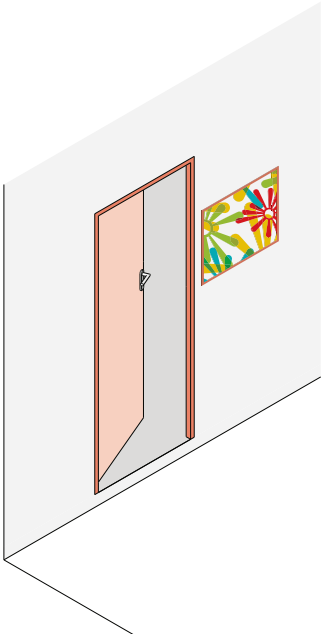


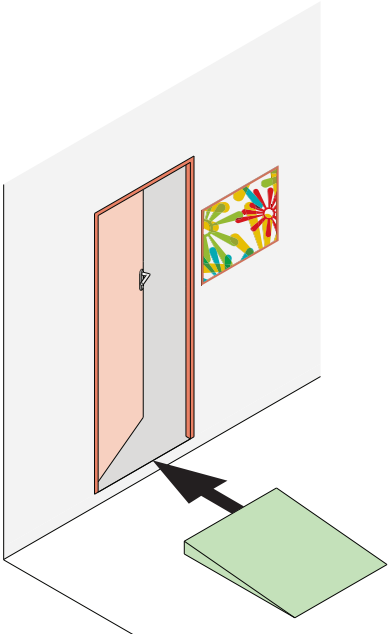


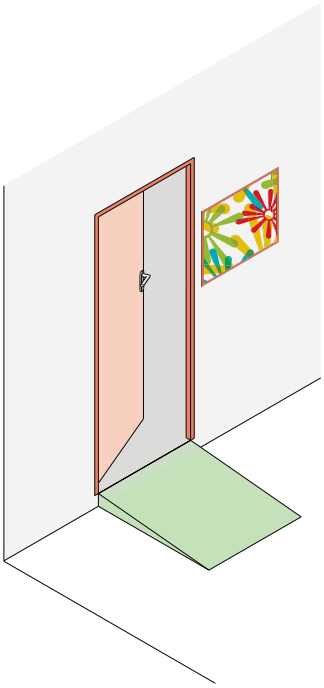
Re-painting the doors and their frames to have a visual contrast with the surrounding walls allows people with sight impairement to clear identify the entrance of the building and the internal doors, even if they are open.

The provision of a panel with pictogram allows people with sight impairement and illiterate people to clearly identify the funcion of the rooms.

Provision of a ramp to cope with threshold height.



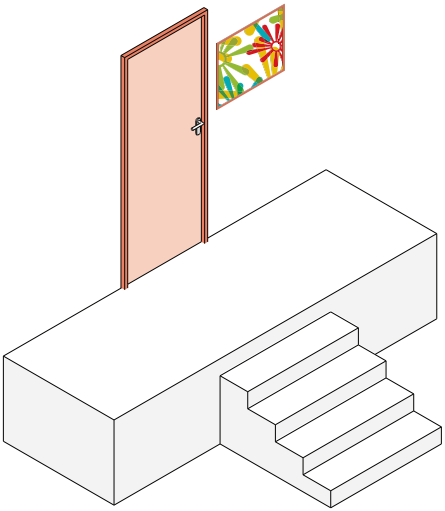


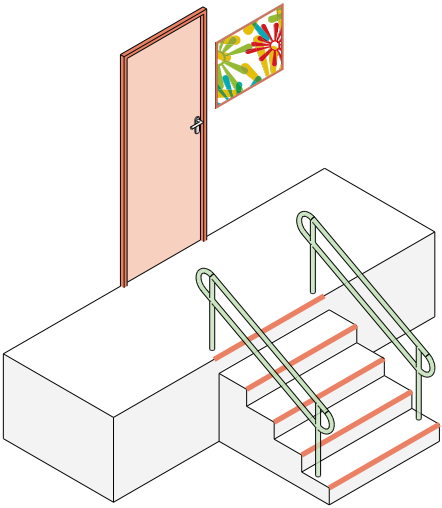


The provision of a ramp to cope with threshold height or a single step to access to the room allows people with mobility impairement, including wheelchair users, to access to the rooms in a safe way even alone.

That solution can be used every time that the level difference between the corridor and the room is not higher than 5cm.

Provision of handrails in both sides of the stepped access and contrasting material or contrasting color on the edge of each step.

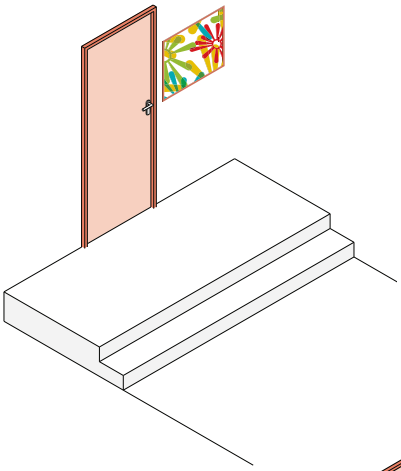




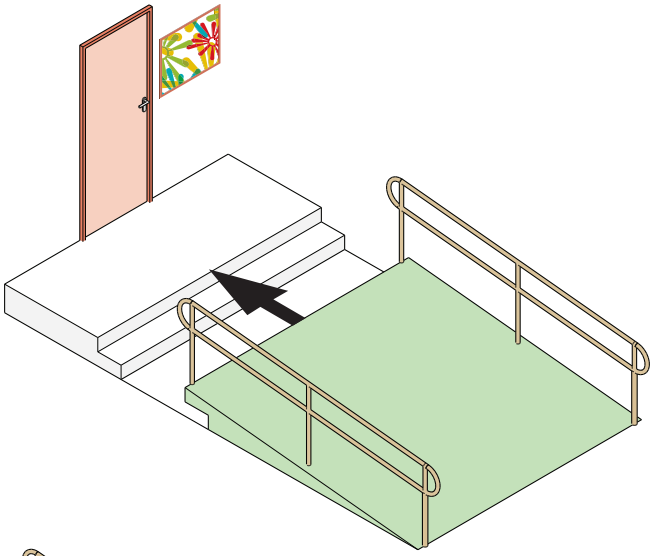
Handrails helps people with mobility impairements, different than wheelchair users, to cope with the stepped access in a safer way.

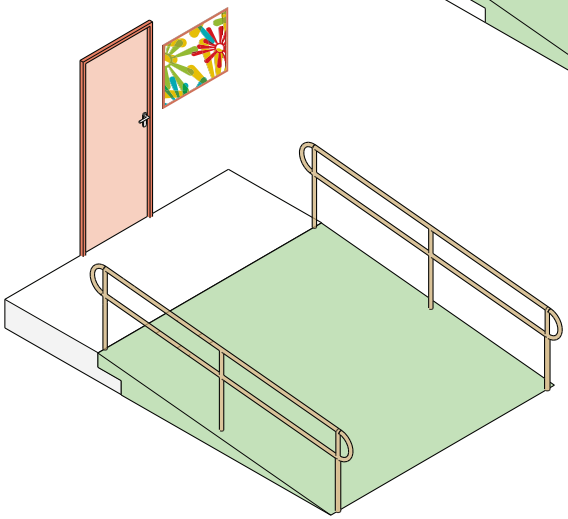
The provision of a contrasting material or contrasting color on the edge of each step helps people with sights impairements to easy identify the steps reducing falling risks.

Provision of a ramp as an alternative to stepped access.



The provision of a ramp as an alternative to the steps helps people with mobility impairements, including wheelchair users, to cope with level difference in a safe way.





The ramp must be equipped with handrails in both sides. The gradient must be between 1:20 and 1:12,5 (see Annex 4).

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AGENZIA ITALIANA PER LA COOPERAZIONE ALLO SVILUPPO

AICS- Agenzia Italiana per la Cooperazione allo Sviluppo
Sede di Khartoum
Street 33, Al Amarat
Khartoum - Sudan
Tel: 466 483 183 (0) 249+
Facebook Page: @AICSKHARTOUM
Website: www.khartoum.aics.gov.it

OVCI la Nostra Famiglia
Volunteer Organization for International Co-operation
Omdurman, Arda - Omar bin Khattab
street behind Ahfad University
Tel.: 965-566-187 249+
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