



**Author:**

Sonia Verswyvel

soniav3@hotmail.com

[www.silladeruedasengestion.org](http://www.silladeruedasengestion.org)

**Illustration and Design:**

Catalina Martínez - Felipe Chávez

[jcataml@yahoo.com](mailto:jcataml@yahoo.com) - [lfch1978@yahoo.com](mailto:lfch1978@yahoo.com)



## Prologue

Disabled people and senior citizens who could nicely go around the city, its shopping malls, airports, hospitals, medical centers, restaurants, work places, rest rooms, homes, cultural and recreation sites, among others, do not have a pleasant experience. Their movements and the attention of their basic and minimum needs make their daily living difficult and obstruct their development as active citizens. They are people that find the opportunities of enjoying kind and accessible spaces limited.

Accessibility, understood as the condition that enables in any space, indoors or outdoors, the easy movement of the population in general, and its use in a safe, reliable and efficient manner, is an including and kind solution that incorporates disabled people and senior citizens together with their relatives into the market and the life of the city.

I propose to work together, not only because I am in a wheelchair, but because I have dedicated my time to acknowledge, understand and propose solutions to the lack of accessibility from my own experience. In this process, I have understood that the situation of disability may reach directly or indirectly all citizens and the actions that aim at creating kind, functional and including spaces would benefit everyone.

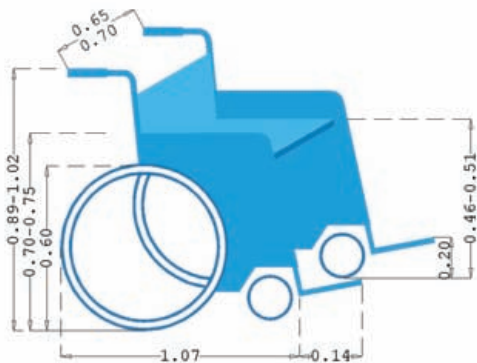
Sonia Verswyvel

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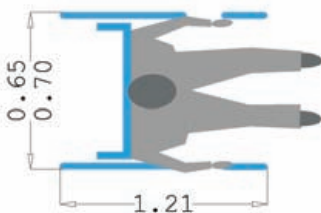
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# 1. Basic measurements

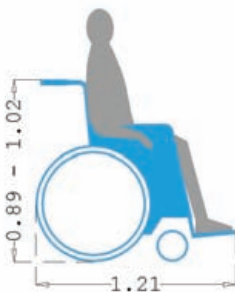
## 1.1 Dimensions of the wheelchair



### Top view



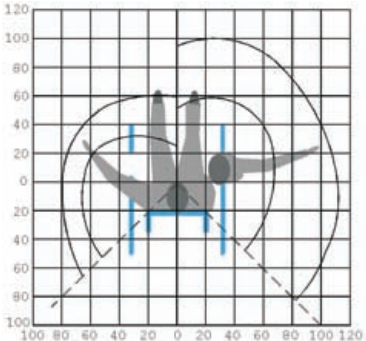
### Lateral view



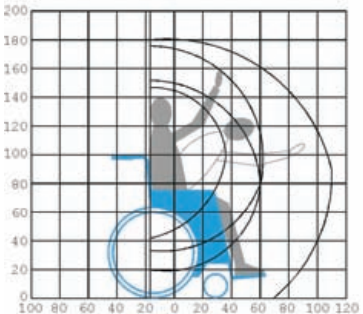
# 1.2 Scope

Scope is basic. Everything must be within reach. Measurements are important to easily observe what is in front.

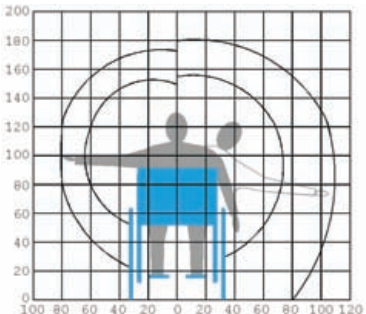
**Top view**



**Raised view**

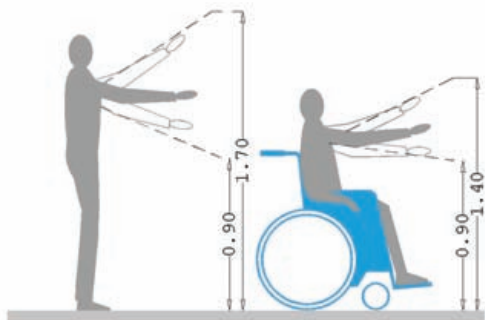


**Back view**

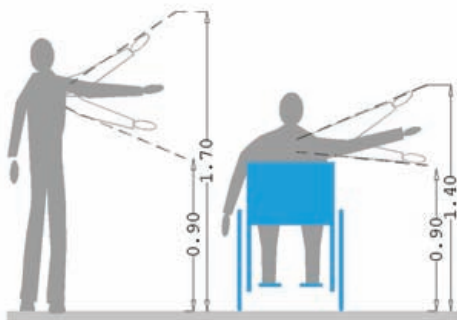


Grid measures given 20 by 20 cm

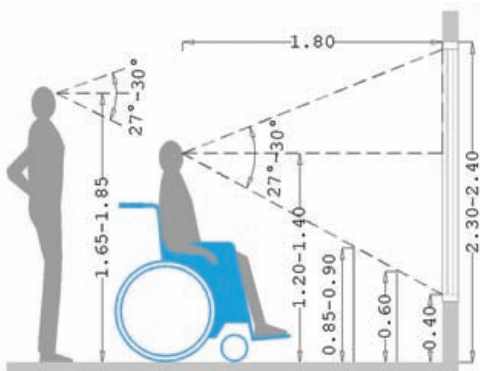
## Front scope



## Lateral scope



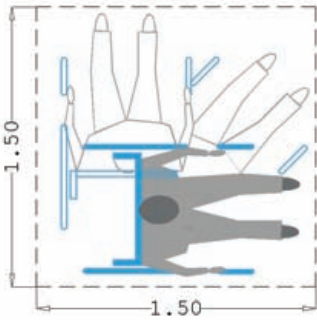
## 1.3 Visibility



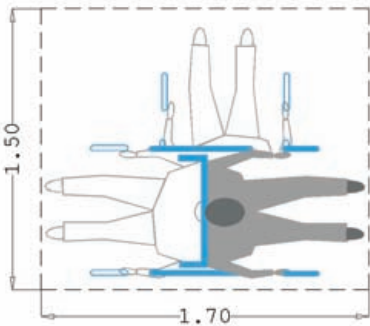
## 2. Movements

### 2.1 Rotations

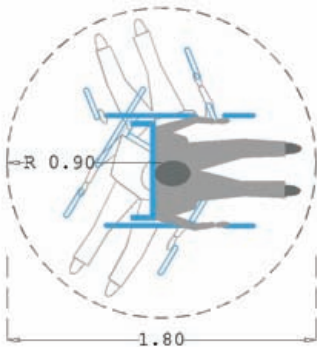
Rotation space must be contemplated to be functional.



90°



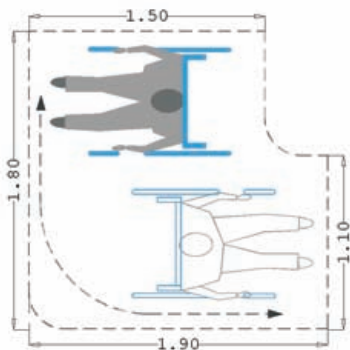
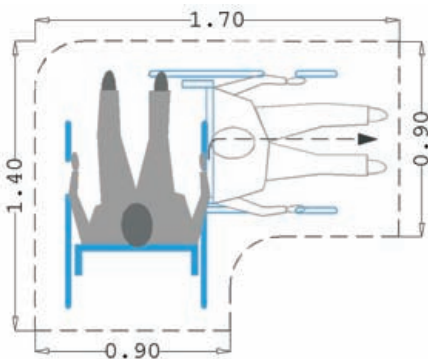
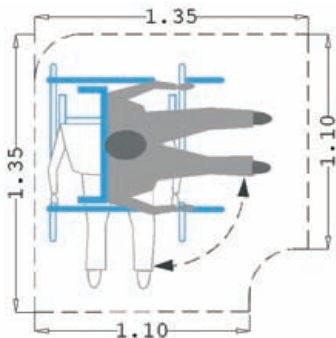
180°



360°

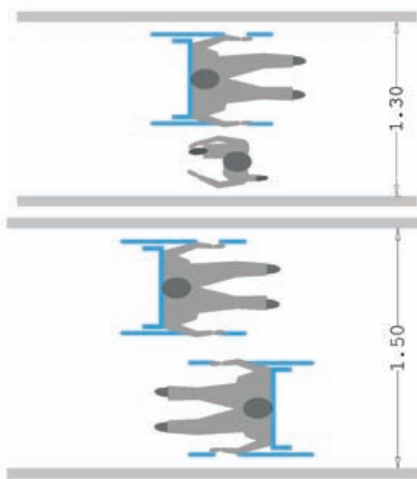
## 2.2 Rotations in limited spaces

The minimum rotation space must be considered in closed areas (living room, bedroom, theaters, etc.) so that the person in a wheelchair can move easily in the place in which he/she is found.

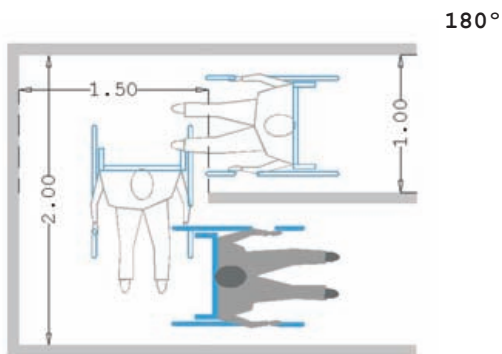
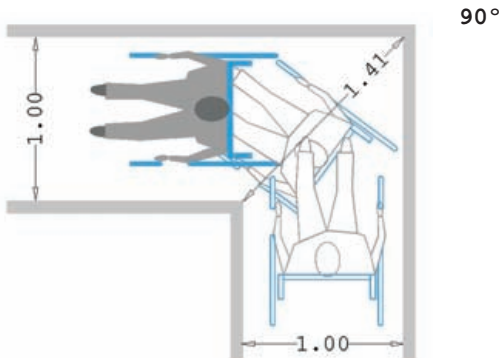




## 2.3 Corridors



## 2.4 Rotation in corridors



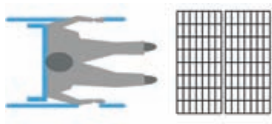
### 3. Urban accessibility

#### 3.1 Sidewalks

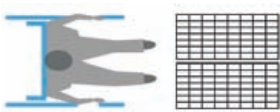
- ✗ Smooth and non-slippery intersections for pedestrians.
- ✗ Audible traffic light for crossing, speed 1m/sec.
- ✗ Smooth central sidewalk 1.50 m wide at street level.
- ✗ Smooth and non-slippery paths with slight slope in parks and gardens.
- ✗ Paths with arches or posts to prevent motorcycles getting through must have enough space for the wheelchair.

#### 3.2 Drainage grille

Smooth sidewalks with horizontal drainage grille to prevent the front wheels of the chair to brake sharply and so the person does not fall forwards.



Safe crossing - Perpendicular grille



Dangerous crossing - Parallel grille

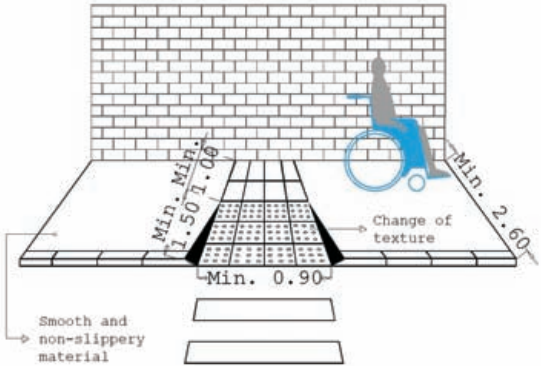
#### 3.3 Ramps

##### 3.3.1 Slope according to ramp length

Length in meters	Slope percentage
Less than 3 m	10% - 12%
Between 3 m and 10 m	8% - 10%
Greater than 10 m	6% - 8%

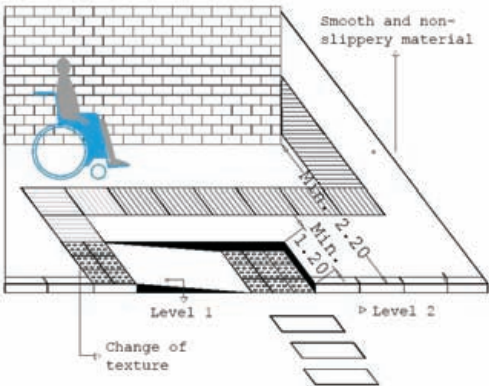
Minimum ramp width 0.90 m

### 3.3.2 Type 1 ramp



If a sidewalk is 0.15 m high the ideal ramp slope is 10% with a minimum length of 1.50m. The ramps must be at the corners or as dividing elements of sidewalks. The end of the ramp **MUST BE LEVELED TO THE GROUND.**

### 3.3.3 Type 2 ramp



Slope must not exceed 6%. It must be parallel to the sidewalk. The end of the ramp **MUST BE LEVELED TO THE GROUND.**

### 3.3.4 Sidewalk height and ramp slope



Sidewalk height 0.15 m, 10% slope



Sidewalk height 0.25 m, 10% slope

### 3.4 Ramp ascent

The greater the slope the greater the effort



Own drive below 10%



Possible help 12%



With help and effort greater than 12%

### 3.5 Rest on long ramp

When the length of the ramp is greater than 6 m.

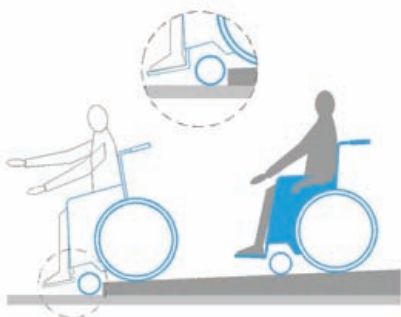


### 3.6 Ramp descent



**End of the ramp leveled to the ground**

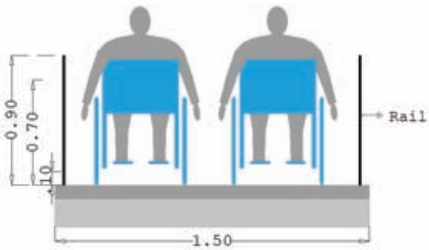
The wheelchair is designed to carry the body weight on the back wheels. When descending the ramp in a wheelchair the body weight shifts to the front wheels reason why the end of the ramp must be completely leveled with the street to avoid that the wheelchair brakes sharply and the person falls forward.



**Dangerous if uneven**

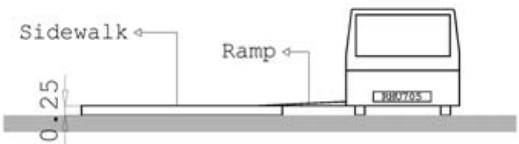
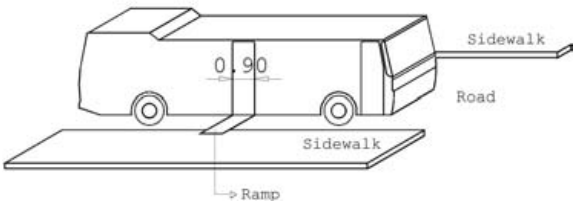
### 3.7 Rails

Rail kerb 0.10 m high to prevent the front wheel of the wheelchair from falling from the ramp and as guidance for blind persons.



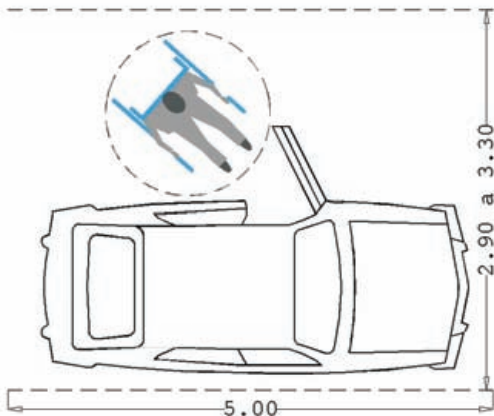
### 3.8 Buses

The bus ramp must be next to the sidewalk and at the level thereof for the movement of the wheelchair.



### 3.9 Parking lots

The parking space must be next to the entrance of the building and as near the ramp as possible.

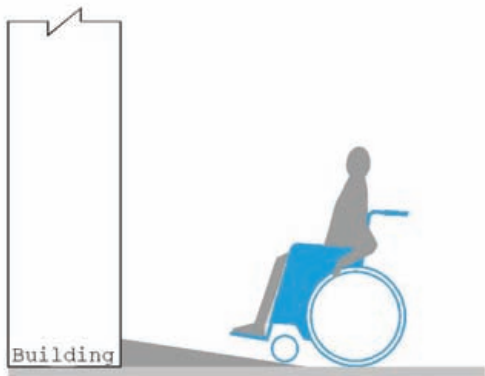


## 4. Architectonic accessibility in common spaces

### 4.1 Building entrance

Entrance ramp to the building with 10% slope and 0.90 m wide. The end of the ramp **MUST BE LEVELED TO THE GROUND.**

Building door width 0.90 m.



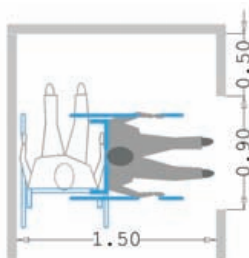
## 4.2 Doors

Minimum width 0.90 m.

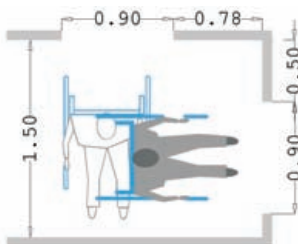
The doors must open outwards.



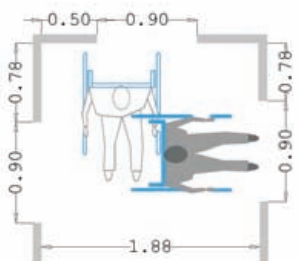
### 4.2.1 Width of corridor with door



With  
1 door



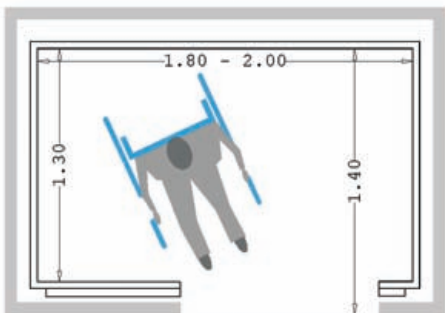
With  
2 doors



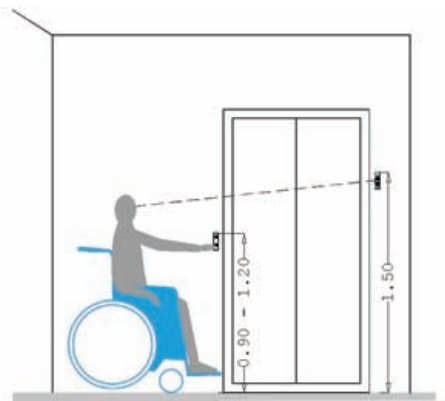
With  
3 doors



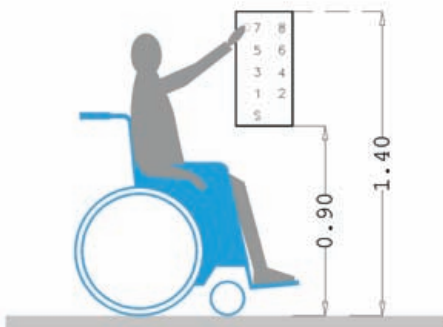
## 4.3 Elevator



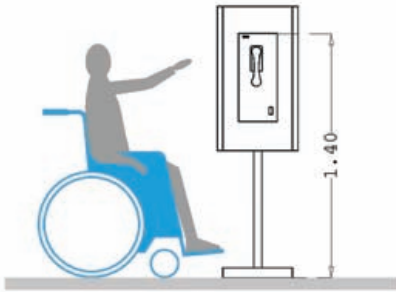
### Outside elevator



### Inside elevator



## 4.4 Telephone



## 4.5 Counters

### Banking entities:

Corridor width 0.90 m.

Minimum width 0.80 m.

Table border 0.77 m from ground to slide knees.

### Supermarkets:

∕ Ancho de pasillo 0.90 mt.

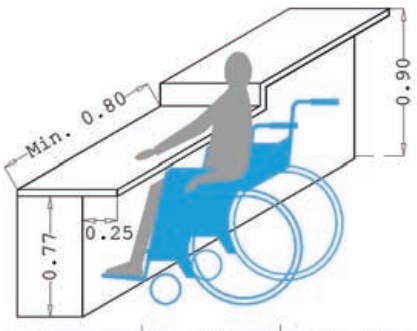
∕ Cash register 0.90 m to 1.00 m from the ground.

### Restaurants:

Table height 0.85 - 0.90 m from the ground.

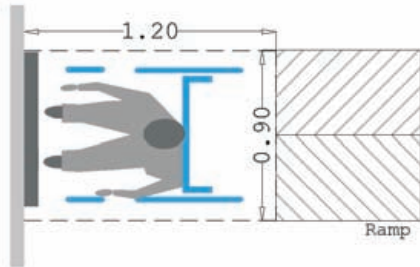
Table border 0.77 m from ground to slide knees.

Table depth 0.50 m to slide feet.



## 4.6 Tellers

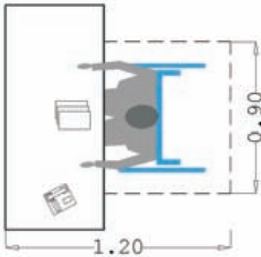
Arrival ramp to the teller with 10% slope and 0.90 m width. The end of the ramp **MUST BE LEVELED TO THE GROUND**.



## 4.7 Desks

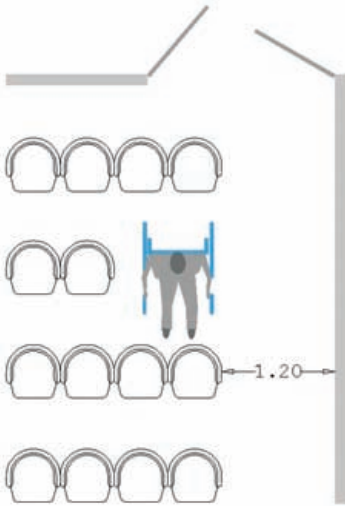
Border of the desk 0.77 m from the ground to slide knees.

0.60 m deep to slide knees.



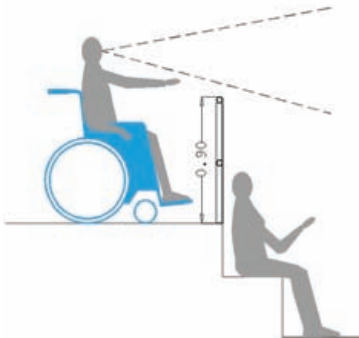
## 4.8 Theaters

- ✗ Entrance ramp with 10% slope and 0.90 m width. The end of the ramp **MUST BE LEVELED TO THE GROUND.**
- ✗ Accessible rest rooms.



## 4.9 Stadiums

- In stadiums, theaters, coliseums, ramp or elevator access must be foreseen for people in wheelchairs.  
Accessible rest rooms.



## 4.10 Public rest rooms

**MY RECOMMENDATION** is sliding door.

1.50 m inside diameter for maneuver.

Toilet/urinal 0.45 to 0.50 m from the ground.

Toilet paper support 0.50 to 1.00 m from the ground.

Horizontal bar 0.70 m from the ground on next wall.

Distance of the wall to the bar 0.03 to 0.04 m.

Washbasin 0.70 m from the ground

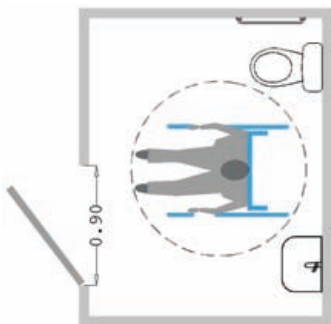
Washbasin width 0.80 m.

Washbasin depth 0.70 m to slide knees and come closer to washbasin.

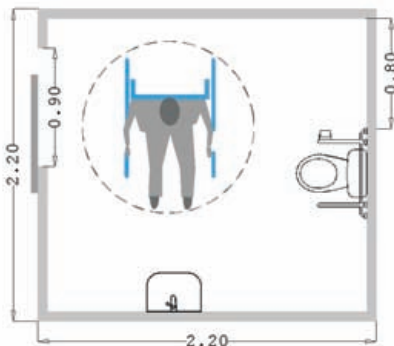
Light switch / accessories 1.20 m from the ground.

Lower part of mirror 0.80 m from the ground.

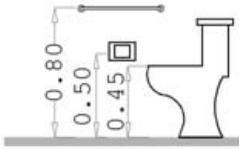
### 4.10.1 Type 1 bar to wall



### 4.10.2 Type 2 bar to floor



## Toilet



## Washbasin



### 4.11 Hotel restrooms

Restroom measurements same as public restroom.

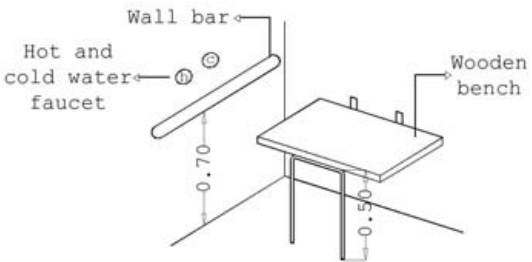
Rectangular shower; hot and cold water faucets at one end.

Hand shower, long hose with hand shower.

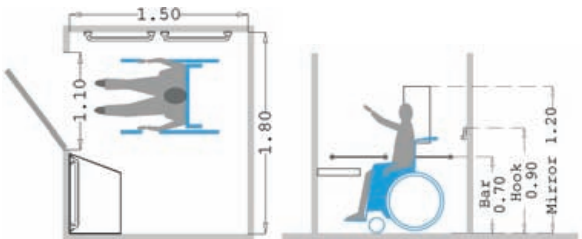
Wooden bench width 0.60 m to 0.80 m against the wall 0.50 m from the ground.

Hot and cold water faucets at the side and above the bar of the wall 0.70 m from the ground.

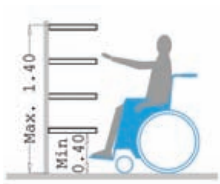
Wall bar on the bench side 0.70 m from the ground.



### 4.12 Dressing rooms



## 4.13 Shelves



## 4.14 Lockers

Locker depth 0.20 m to slide knees



## 5. Architectonic accessibility in private spaces

### 5.1 Kitchen

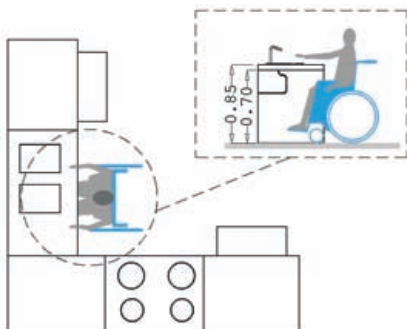
Space 1.50 m by 1.50 m.

Stove / sink 0.80 m wide.

Stove / sink height 0.85 m from the ground.

Stove / sink edge 0.70 m from the ground to slide knees.

- ✗ Stove / sink depth 0.25 m to slide knees.
- ✗ Light switch and accessories 1.20 m from the ground.
- ✗ Pipes must be covered in fabric so that the person does not hurt his/her knees.



## 5.2 Home bathrooms

1.50 m inside diameter for maneuver.

Toilet/urinal 0.45 to 0.50m from the ground

Toilet paper support 0.50 to 1.00 m from the ground.

Horizontal bar 0.70 m from the ground on next wall.

Distance from the wall to the bar 0.03 to 0.04 m.

Washbasin 0.70 m from the ground

Washbasin width 0.80 m.

Washbasin depth 0.70 m to slide knees and come closer.

Shower / bathtub 0.70 to 0.80 m from the ground on next wall.

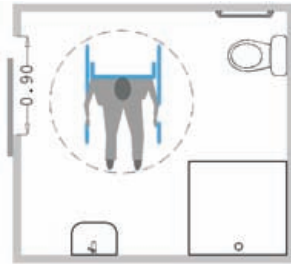
Hand shower in shower or bathtub, hose 1.50 m long.

Shower area 0.90 by 0.90 m.

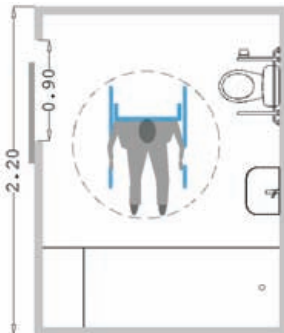
Lower part of mirror 0.80 m from the ground

Light switch / accessories 1.20 m from the ground.

### 5.2.1 Type 1 bar to shower wall

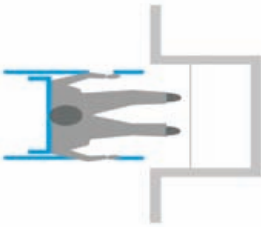


### 5.2.2 Type 2 bar to shower / bathtub ground





### 5.3 Wardrobe / Closet



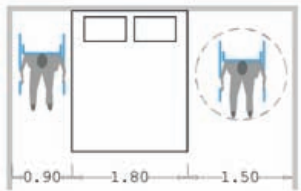
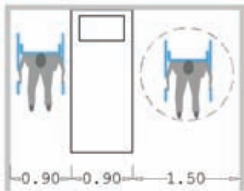
### 5.4 Bedroom

1.50 m free space for maneuver.

Bed from wall 1.20 m.

Sockets 0.90 m from the ground.

Light switch / accessories 1.20 m from the ground.



## 6. Basic recommendations for elimination of sensory barriers

Do not see us as different persons.

Enough lighting.

Instructions and characters in relief and Braille always on the same side of the door.

Light switch, accessories 1.20 m from the ground always on the same side of the door  
Elevators with characters in relief and Braille.

Non-slippery grounds.

Sidewalks and ramps with change of texture to know when the street or entrance of buildings is near

Signals on the street 2.10 m from the ground.

Traffic lights with sound system.

Avoid columns and posters badly placed.

Posts with covered corners.

Projecting objects 2.10 m from the ground.