ACCESSIBILITY
in Urban Design and Architecture

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PREAMBULAR

French accessibility rules
It relate to every disabilities:

- Motor disability (wheel chair, ...)
- Senses disability (blindness, deafness, hearing-impaired, ...)
- Mental or psychic disease (autism, trichomy, schizophrenia, ...)

The accessibility rules concern:

- Outside and public spaces
- Common transports
- Public and private equipments everywhere public can go (shops, museums, schools, universities, hotels, restaurants, ...)
- Collective accommodations
- Single houses built to bell rented ou sell
INTRODUCTION

From rules to use comfort...
The space creates, limits or deletes the situation of handicap:

. Every place imposes its constraint: physical, psychological, economic, ...

. Every individual, every user has his own capacities: physical, psychological, economic, ...

Any gaps between the constraints of a place and the capacities of the user create a "situation of handicap" by hardness or impossibility.
INTRODUCTION / notion of « situation of handicap »
INTRODUCTION / about motor disability

Dimension of a wheel chair: **0.80m x 1.30m**
Returning area of a wheel chair: **Ø 1.50m**
Highness to catch something: **0.90m to 1.30m**
Highness under table for wheel chair: **0.70m min**
INTRODUCTION / about sight problems...

«valid» person sight

Vague vision
Central vision
Peripheral vision
INTRODUCTION / about blindness...

➢ For the bling persons:
  . Need of marks: tactile, sound, olfactive...
  . But which do not break the continuity of the chain of movement

➢ For the partially-sighted persons:
  . Need of contrast
  . Of clear information
  . Good lighting

Blindness
INTRODUCTION / needs of hearing-impaired person...

➢ For deaf people:
  . Need to feel reassured (in case of fire)
  . Need to have access to the information, in particular sound:
    . Sound information doubled by visual information (sound alarm)
  . Need of a good lighting

➢ For the hearing-impaired people:
  . Need of audio systems (like magnetic buckle) to have access to the sound information
  . Need of acoustic quality treatment so that spaces are not too noisy
INTRODUCTION / to communicate with a deaf or hearing-impaired person...

- Stand in front of him
- Don’t talk to him since an other room
- Minimize the back noises
- Don’t dazzle him!
- ...
INTRODUCTION / think about old people...

- Everyone is going to be old
- Important problem of the ageing of the population in Europe
- An old person is representative because multiply handicapped person:
  - Motor problems
  - Sight problems
  - Hearing problems
  - Demency problems (Alzheimer disease, ...)

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RECOMMENDATIONS FOR CONCEPTION OF SPACES
Everyone should be able to take the same way

Continuity in the chain of movement:

If the accessibility is hard to obtain everywhere, a reserved adapted car park must be planned near the equipment and connected with this one by an accessible progress.
LOCATION AND GUIDE
LOCATION AND GUIDE / Signalling system

Localization of signals:

- Signals adapted at the enter of public equipment
- Signals adapted near to car parks
- Signals adapted to each intersection
LOCATION AND GUIDE / Signalling system

➤ Legibility of information:

. Be strongly contrasted with regard to the bottom of the support

. Height of the characters of writing:
  > 15 mm for the ÉlÈments of information relative to the orientation
  > 45 mm otherwise

. Resort as much as possible to icons or to pictograms (normalized if they exist)
LOCATION AND GUIDE / Guide ligns

- **Location**: Location

  Visual and tactile contrast of the cover of the progress with regard to the environment, to the defect a continuous and tactile mark, contrasted (band of guide)
QuickTime™ et un décompresseur sont requis pour visionner cette image.
LOCATION AND GUIDE / outside guide strips
LOCATION AND GUIDE / inside guide strips
LOCATION AND GUIDE / entrance of equipments

Location:

Main entrances have to be noticeable as architectural element or different materials or visually contrasted.
HORIZONTAL CIRCULATION
HORIZONTAL CIRCULATION / widths

- **Width except any obstacle**:
  - Width mini $\geq 0.90 \text{ m}$
  - Good width $\geq 1.20 \text{ m to } 1.40 \text{ m}$
  - Width for 2 wheelchairs $\geq 1.60 \text{ m to } 1.80 \text{ m}$
  - Horizontal in the slope near $\leq 2\%$
HORIZONTAL CIRCULATION / widths

1. Mobilier hors cheminement

140 min.

120 min.

140 min.
HORIZONTAL CIRCULATION / widths

Rotation space:

Area Ø 1.50m in every choice of direction as well as in front of entrances by an accessible way which contain a system of access control.
HORIZONTAL CIRCULATION / projections

- Dimensions allowed:
  - Projections ≤ 2 cm round or with chamfer
  - Projections ≤ 4 cm with chamfer with a slope ≤ 33% (tolerance)

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HORIZONTAL CIRCULATION / projections

- Minimal distance between two projections is 2,50 m.
- Successive projections forbidden (tile paths)

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HORIZONTAL CIRCULATION / slope

- Percentage:
  - Slope \(\leq 5\%\)
  - Slope \(\leq 8\%\) on a length \(\leq 2\) m (tolerance)
  - Slope \(\leq 10\%\) on a length \(\leq 0,50\) m (tolerance)
  - Slope \(> 12\%\) = danger !!
- Width of the access ramp 1,20 m minimum
- Horizontal in the slope near \(\leq 2\%\)
HORIZONTAL CIRCULATION / slope

- **Half landings:**
  - Slope 4%<x<5% with half landings **all 10 m**
  - Dimensions **1,40m x 1,20m**
  - Landing at the bottom of the access ramp
  - Landing at the top of the access ramp

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HORIZONTAL CIRCULATION / slope
SAFETY OF USAGE
SAFETY OF USAGE / dangers

- **Equipment in projection:**

  . If obstacle to the ground or in projection furthermore of **15cm** on the way, the element of **visual contrast and tactile reminder** or continuation of the obstacle to the ground is needed.

  . If suspended obstacle, to leave passage free in at least **2.20m of the ground**
SAFETY OF USAGE / dangers
SAFETY OF USAGE / dangers

Glazed walls:

Locatable by contrasted visual elements

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SAFETY OF USAGE / glazed walls
SAFETY OF USAGE / pedestrians and cars

- Crossing pedestrians / cars:
  - Strip of awakening of attentiveness for the pedestrians
  - Road marking of pedestrian crossing for cars
  - Marking on the ground
SAFETY OF USAGE / pedestrians and cars
SAFETY OF USAGE / pedestrians and cars
AUTOMOBILE
CAR PARK
AUTOMOBILE CAR PARK / number and signals

- **Number:**
  - 5% of the number of places for the occupants (rounded off in the superior unit)
  - 5% of the number of places for the visitors (rounded off in the superior unit)

- **Road marking:**
  - Marking on the ground of the adapted places intended for the visitors
AUTOMOBILE CAR PARK / dimensions

- Dimensions:
  - Width $\geq 3.30\text{m}$
  - Horizontal to the slope near $\leq 2\%$
Accessible way:

- Connected with the entrance of the buildings or with the elevator by an accessible way without projection ≥ 2cm
- Horizontal on 1.40m minimum from the place
AUTOMOBILE CAR PARK / dimensions

1

2

>2,5m

>0,8m
VERTICAL CIRCULATION
VERTICAL CIRCULATION / outside staircases

- At least 3 steps:
  - Width **1.40 m** minimum between 2 banisters
  - Maximal height of the steps: **16 cm**
  - Minimal width of the step: **28 cm**
VERTICAL CIRCULATION / outside staircases

➤ At least 3 steps:

- Continuous, stiff banister, easily to take from part and the others between 0.80m and 1m of highness
- Contrasted banister overtaking horizontally of the 1st and the last step
VERTICAL CIRCULATION / outside staircases
VERTICAL CIRCULATION / outside staircases

- Location:

  - Floor covering contrasted visually and tactilement (Strip of awakening of attentiveness) **in 50cm of the first step** at the top of the staircase

  - Not slippery contrasted nose of step
VERTICAL CIRCULATION / outside staircases

1. Nez de marche contrasté et antidérapant
2. Double main courante
VERTICAL CIRCULATION / lifts

Characteristics of the elevator:

- Entrance 80 cm
- Depth 130 cm
- Width 100 cm
- Sliding doors needed
- Commands height between 0.90m and 1.30 m
- Precision of stop 2cm maximum

Location:

- Signals easily visible
- Visual and sound information for the floors and the alarm
VERTICAL CIRCULATION / lifts

- Maximum 2 cm
COMMAND SYSTEMS AND EQUIPMENTS
COMMANDS AND EQUIPMENTS / dimensions

Spaces for use:

- Space of usage **0,80m x 1,30m** in front of every equipment
- Height between **0,90m and 1,30m** for manual commands
LOCATION:

- Locatable equipment and furniture by visual contrast or particular lighting
- Command of visible lighting in the daytime and at night
- Sound and visual signal connected to the functioning
LIGHTING
LIGHTNING / intensities

Illumination measured on the ground:

- **20 lux** min on each point of the accessible outside way
- **100 lux** on each point of the horizontal inside circulations
- **150 lux** on each point of every staircase
- **50 lux** on each point of the pedestrian circulations in car parks
- **20 lux** in quite other point of car parks
REGLEMENTATION / Eclairage
Let’s Open Cities for US!

Let’s integrate « design for all » concept ...