

ACCESSIBILITY

in Urban Design and Architecture

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PREAMBULAR

French accessibility rules



PREAMBULAR / french texts of law

➤ 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 accomodations
- . Single houses built to bell rented ou sell



INTRODUCTION

From rules to use comfort...



INTRODUCTION / notion of « situation of handicap »

The space creates, limits or deletes the situation of handicap:

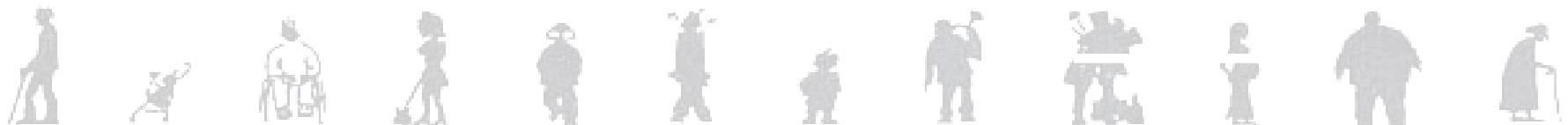
- . Every place imposes its constraint: physical, psychological, economic, ...
- . Every individual, every user has his own capacities: physical, psychological, economic, ...

Any gaps between the constraints of a place and the capacities of the user create a " **situation of handicap** " by hardness or impossibility.

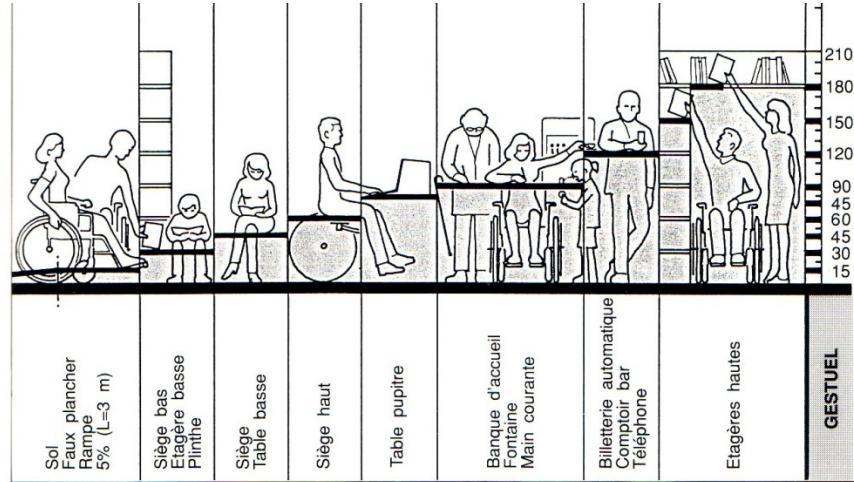


INTRODUCTION / notion of « situation of handicap »

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INTRODUCTION / about motor disability

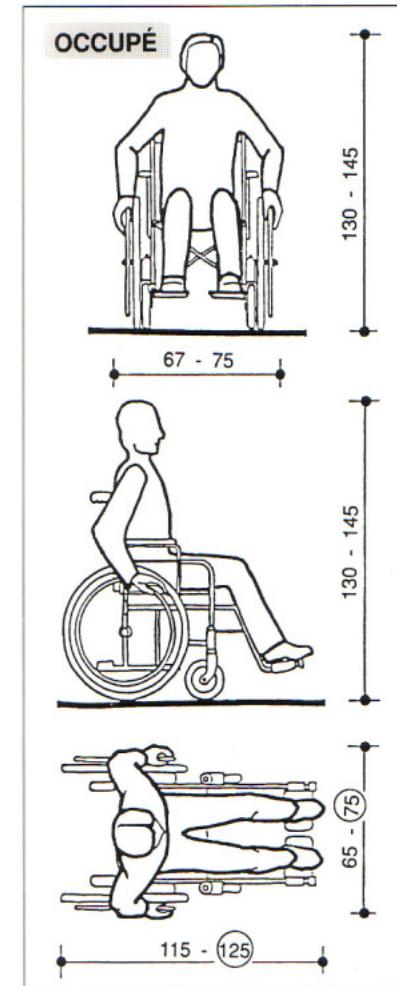


Dimension of a wheel chair : **0,80m x 1,30m**

Returning area of a wheel chair : **$\varnothing\ 1,50m$**

highness to catch something : **0,90m to 1,30m**

Highess under table for wheel chair : **0,70m min**



INTRODUCTION / about sight problems...



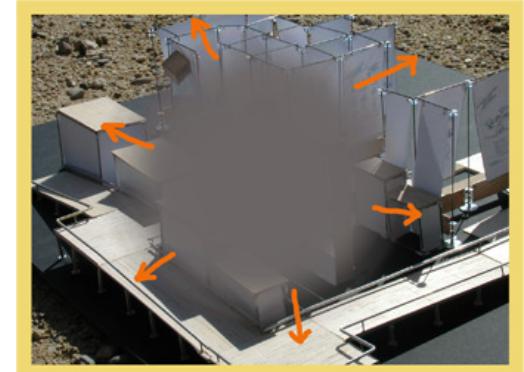
« valid » person sight



Vague vision



Central vision



Peripheral vision



INTRODUCTION / **about blindness...**

➤ **For the blind persons :**

- . Need of marks : tactile, sound, olfactive...
- . But which do not break the continuity of the chaine 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

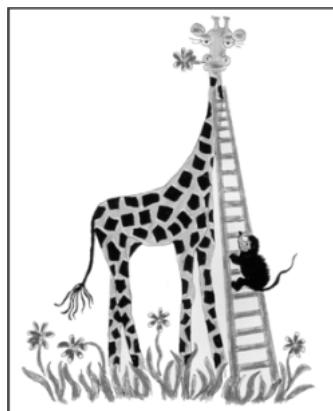
➤ For the hearing-impaired people :

- . 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



GENERALITIES / same access for all

- 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**

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LOCATION AND GUIDE / Signalling system

➤ LEGIBILITY OF INFORMATION :

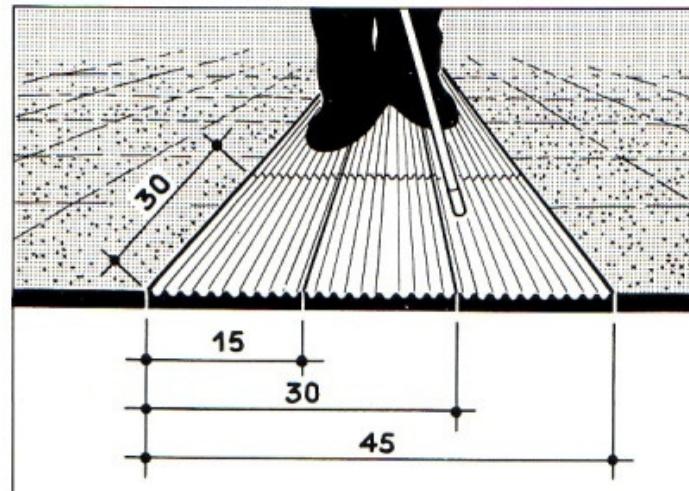
- . Be strongly contrasted with regard to the bottom of the support
- . Height of the characters of writing:
 - > 15 mm for the ÈLÈments of information relative to the orientation
 - > 45 mm otherwise
- . Resort as much as possible to icons or to pictograms (normalized if they exist)



LOCATION AND GUIDE / Guide ligns

➤ LOCATION :

. **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)



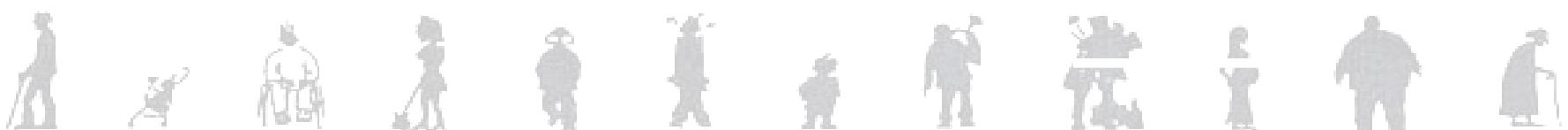
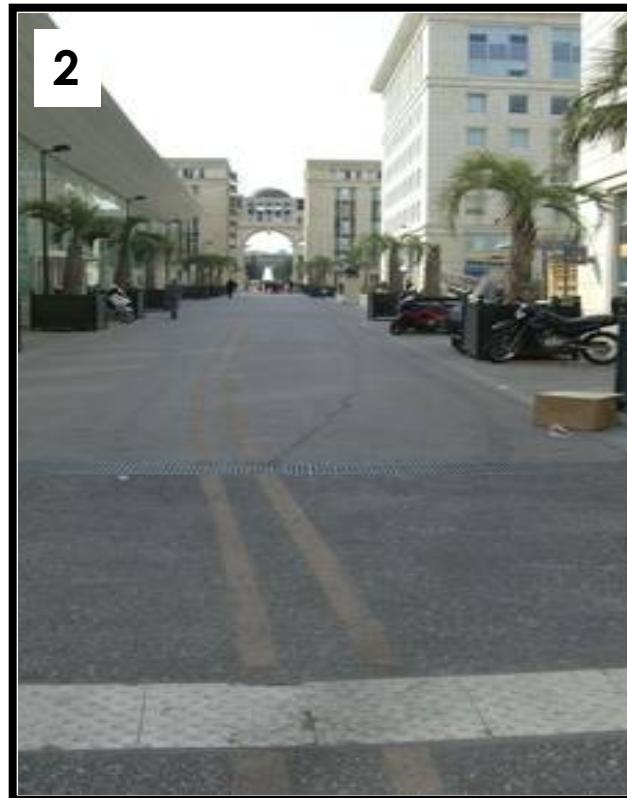
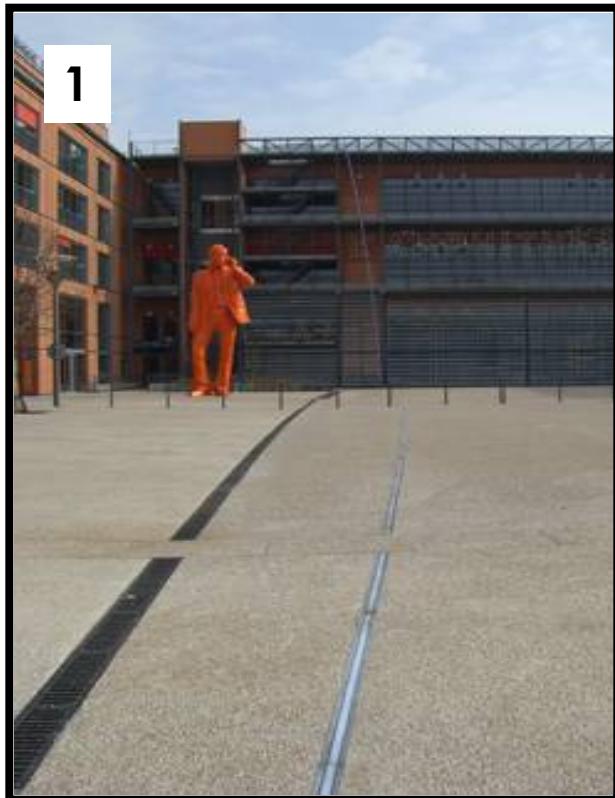
LOCATION AND GUIDE / Guide strip

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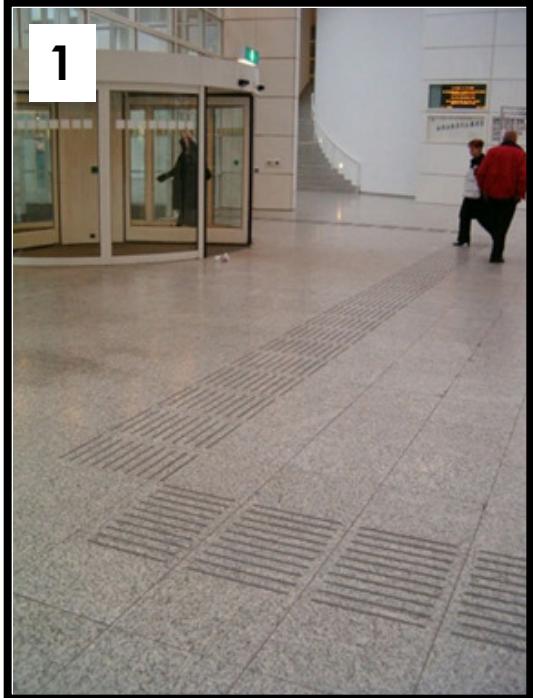
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LOCATION AND GUIDE / outside guide strips



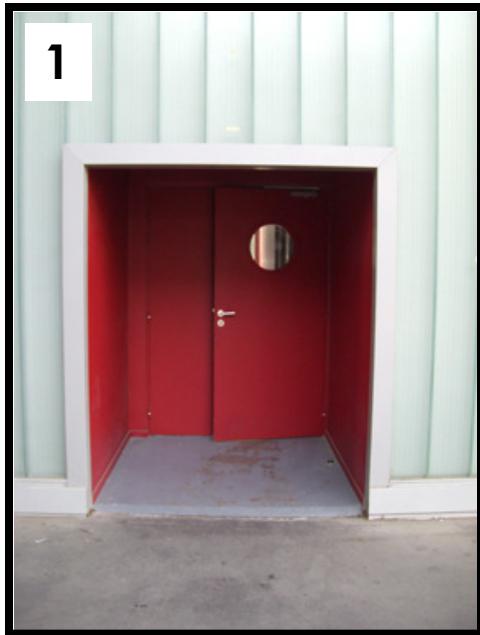
LOCATION AND GUIDE / inside guide strips



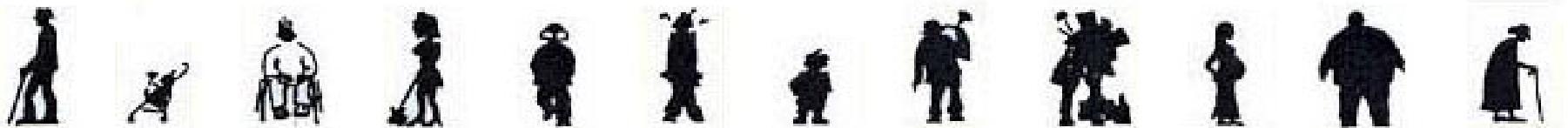
LOCATION AND GUIDE / entrance of equipments

➤ LOCATION :

- . Main entrances have to be ocatable as **architectural element** or **different materials or visually contrasted**



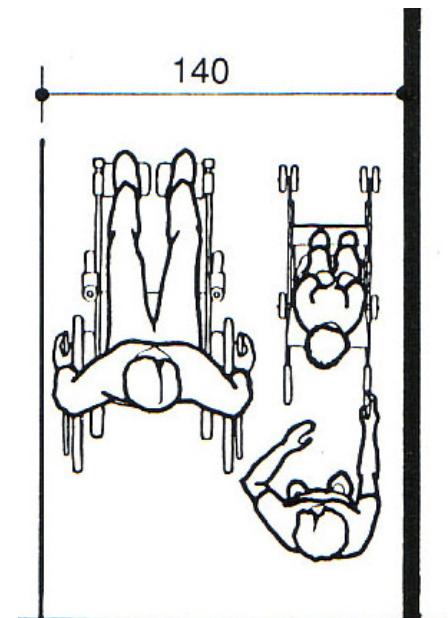
HORIZONTAL CIRCULATION



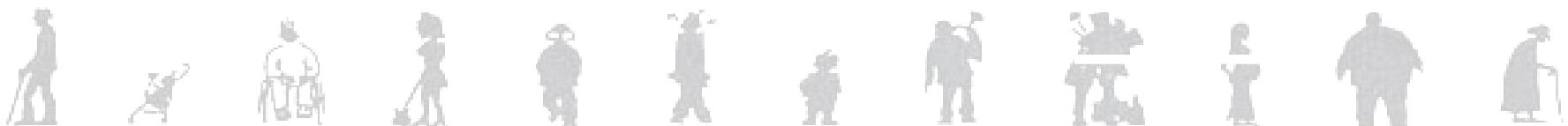
HORIZONTAL CIRCULATION / widths

➤ 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 fwheel chairs $\geq 1,60\text{ m to }1,80\text{ m}$
- . Horizontal in the slope near $\leq 2\%$



HORIZONTAL CIRCULATION / widths



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.

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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**

➤ PROJECTIONS :

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

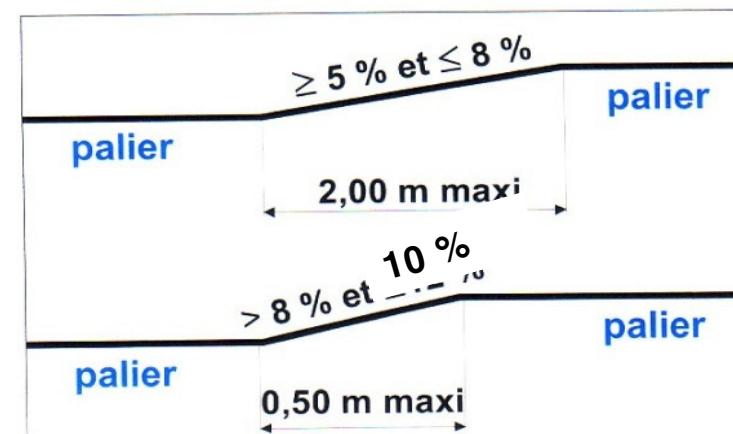
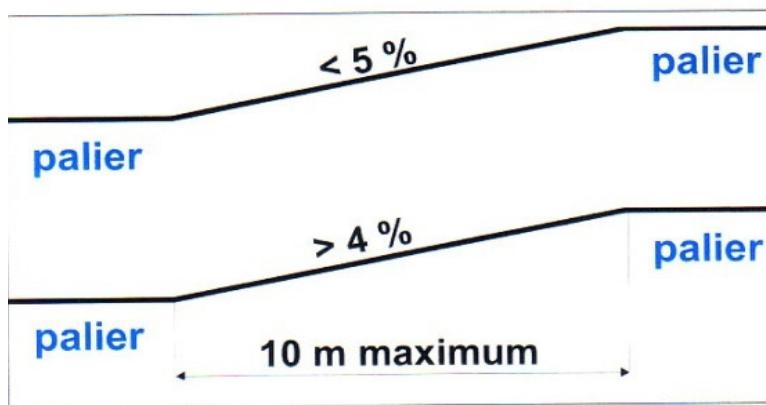
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HORIZONTAL CIRCULATION / slope

➤ PERCENTAGE :

- . Slope $\leq 5\%$
- . Slope $\leq 8\%$ on a length $\leq 2m$ (tolerance)
- . Slope $\leq 10\%$ on a length $\leq 0,50m$ (tolerance)
- . Slope $> 12\% = \text{danger !!}$**
- . 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**

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QuickTime™ et un décompresseur sont requis pour visionner cette image.



SAFETY OF USAGE / dangers



SAFETY OF USAGE / dangers

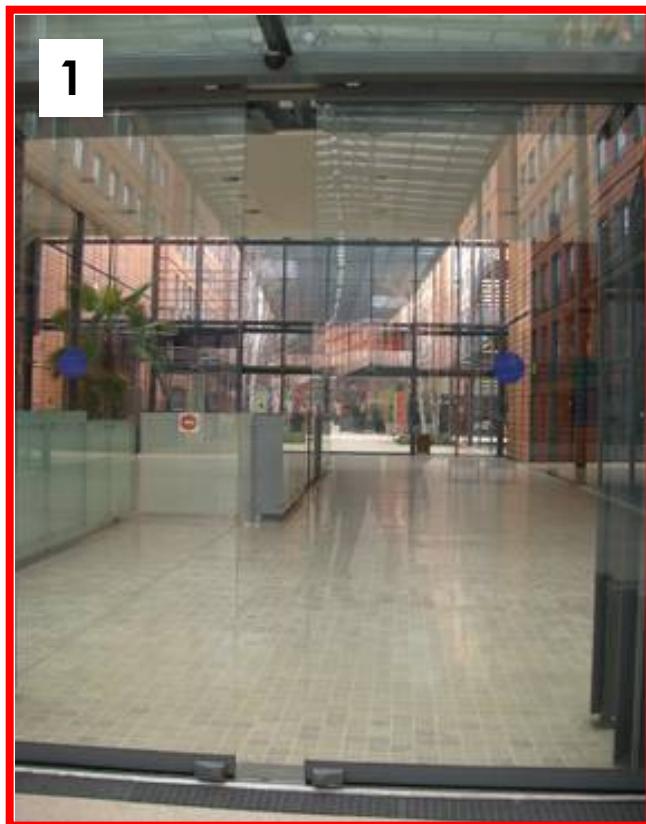
➤ GLAZED WALLS :

- . Locatable by **contrasted** visual elements

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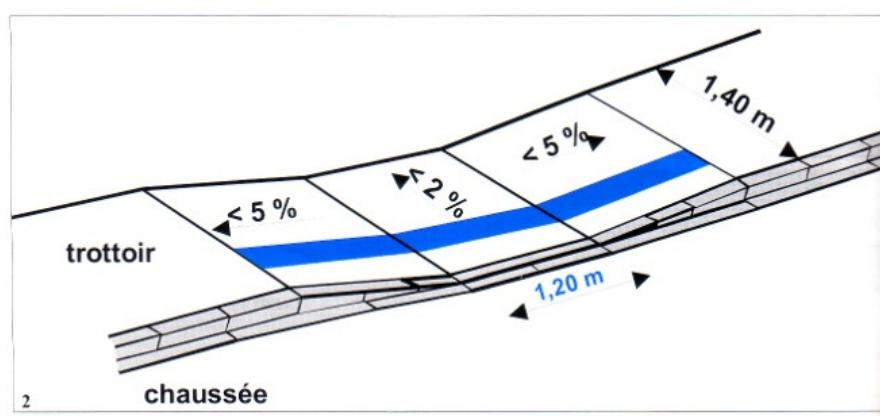
SAFETY OF USAGE / glazed walls



SAFETY OF USAGE / **pedestrians and cars**

➤ CROSSING PEDESTRIANS / CARS :

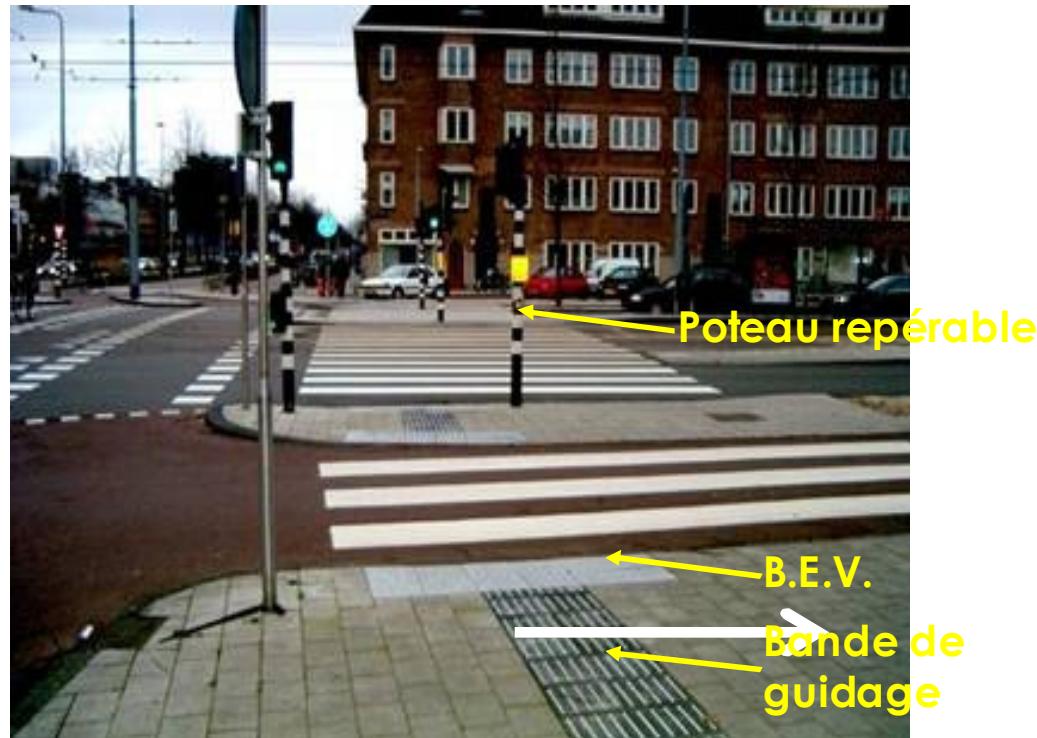
- . Strip of awakening of attentiveness for the pedestrians
- . Road marking of pedestrian crossing for cars
- . Marking on the ground



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 **3,30m**
- . Horizontal to the slope near **$\leq 2\%$**

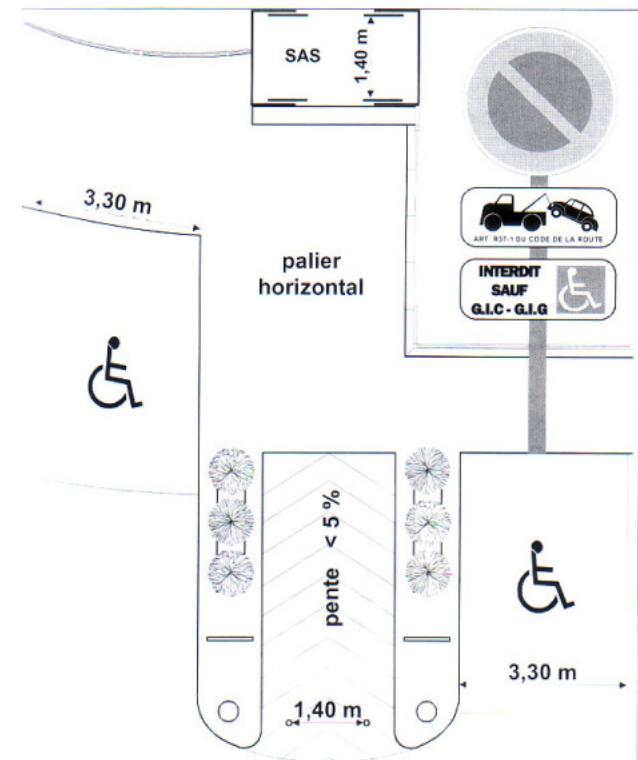
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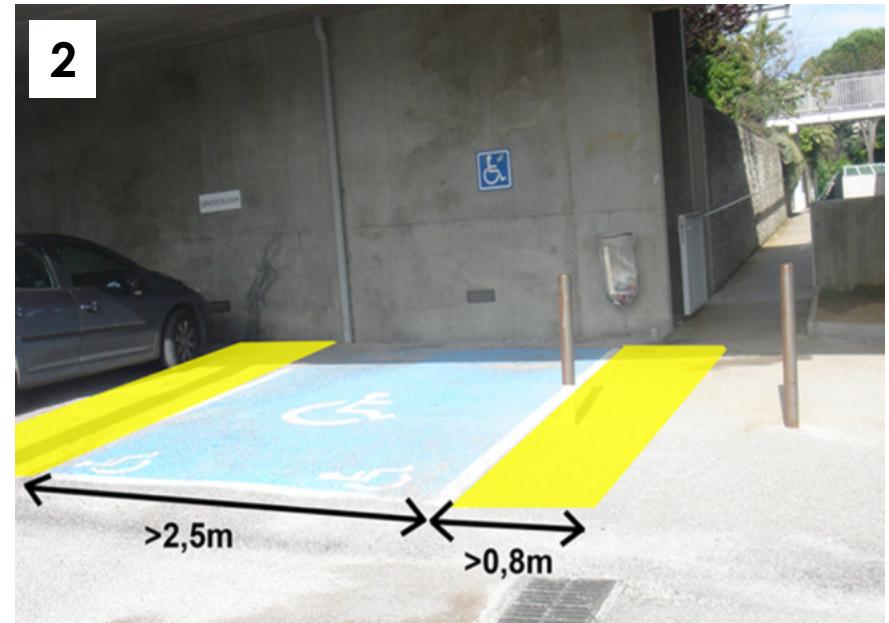
AUTOMOBILE CAR PARK / continuity in the way

➤ ACCESSIBLE WAY:

- . Connected with the entrance of the buildings or with the elevator by **an accessible way** without projection $\geq 2\text{cm}$
- . Horizontal on 1,40m minimum from the place



AUTOMOBILE CAR PARK / dimensions



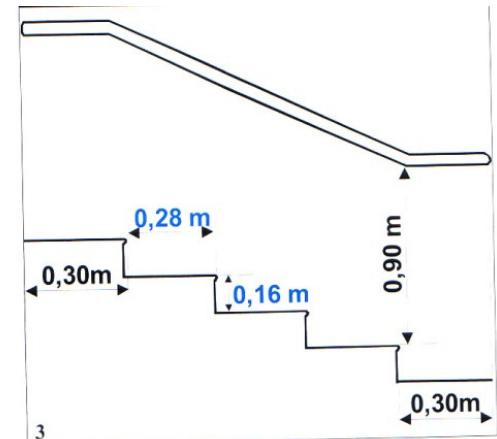
VERTICAL CIRCULATION



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 de **28 cm**



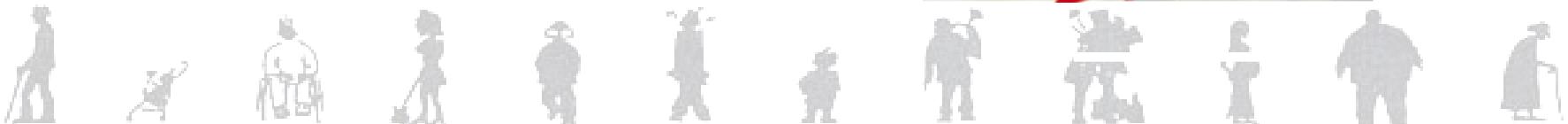
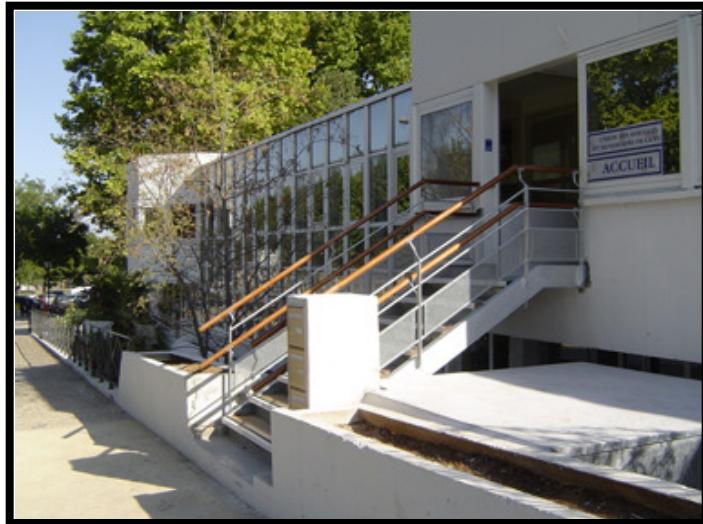
QuickTime™ et un décompresseur sont requis pour visionner cette image.



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

sont

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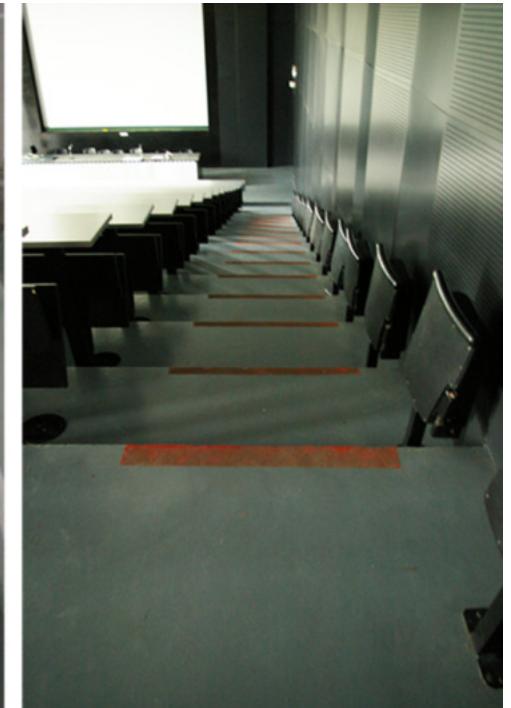
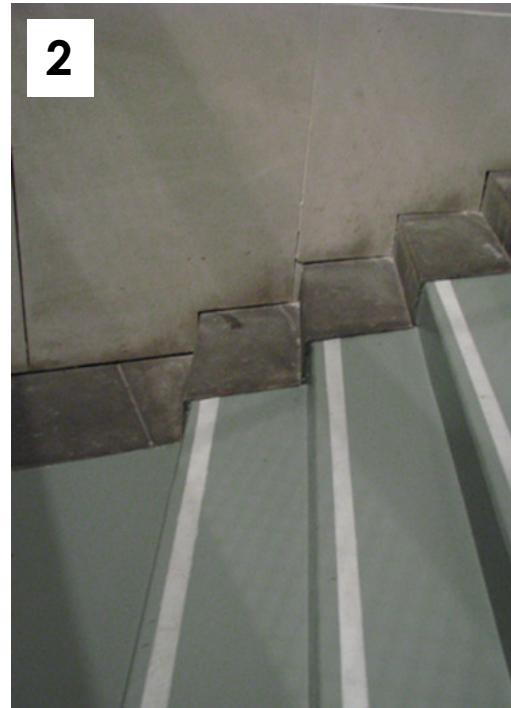
VERTICAL CIRCULATION / outside staircases

➤ 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



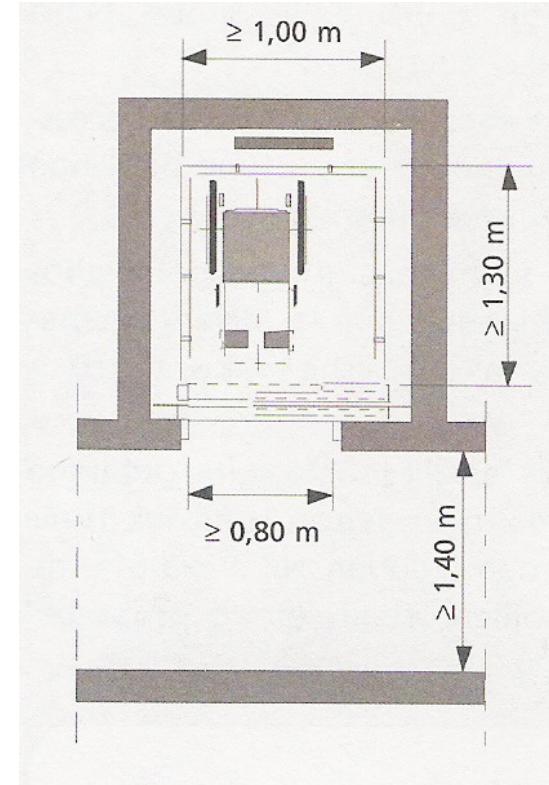
VERTICAL CIRCULATION / lifts

➤ CHARACTERISTICS OF THE ELEVATOR :

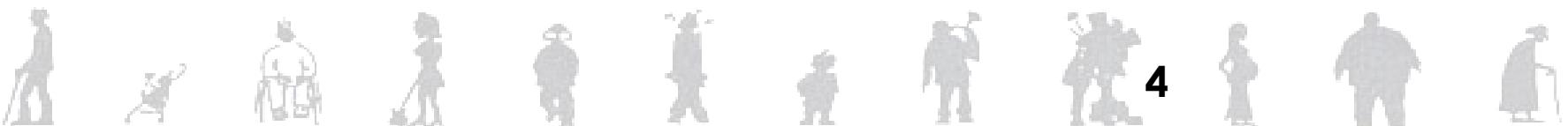
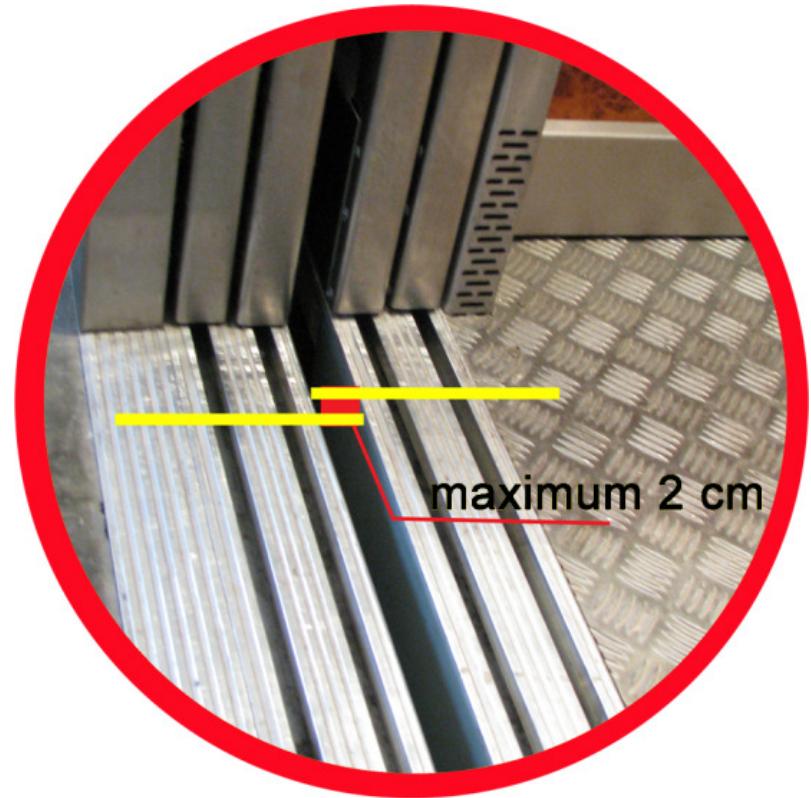
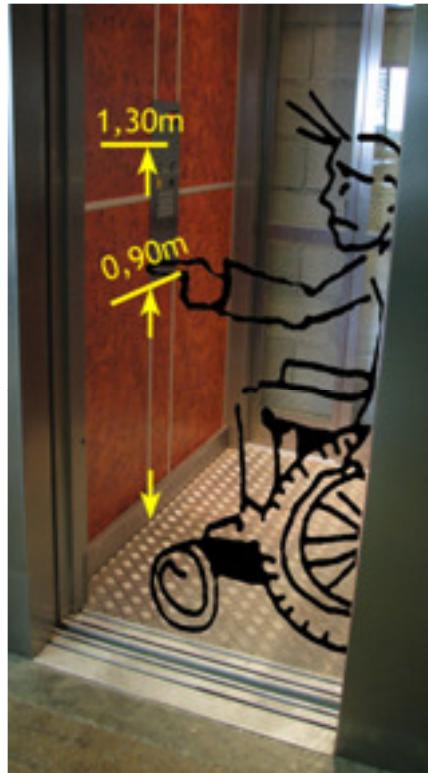
- . Entrance **80 cm**
- . Depth **130 cm**
- . Width **100 cm**
- . Sliding doors needed
- . Commands height between 0.90m and 1.30 m
- . Precision of stop 2cm maximum

➤ LOCATION :

- . Signals easily visible
- . Visual and sound information for the floors and the alarm



VERTICAL CIRCULATION / lifts



4

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

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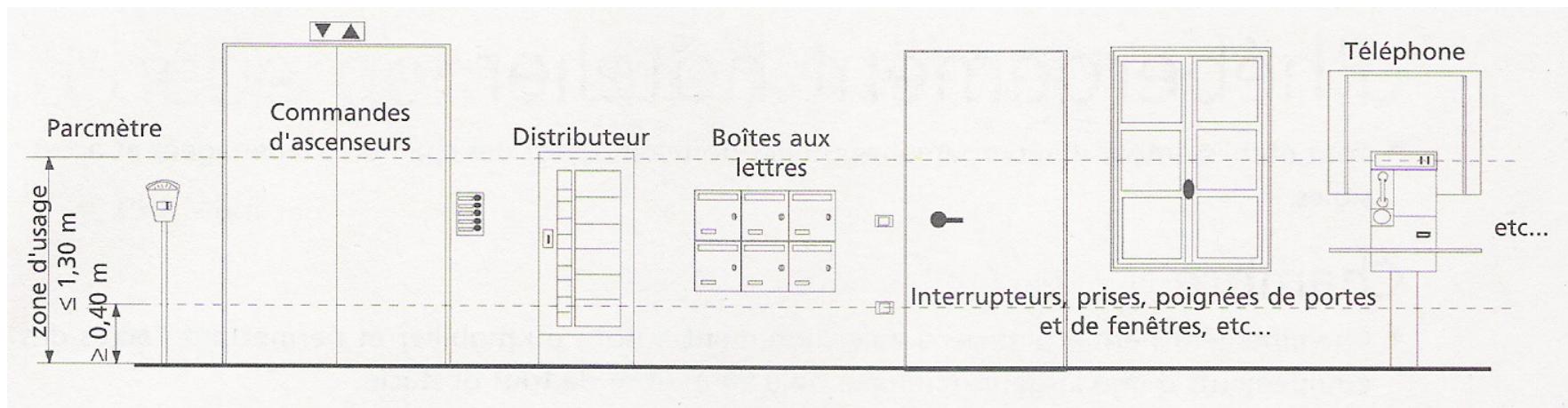
QuickTime™ et un décompresseur sont requis pour visionner cette image.



COMMANDS AND EQUIPMENTS / location

➤ 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



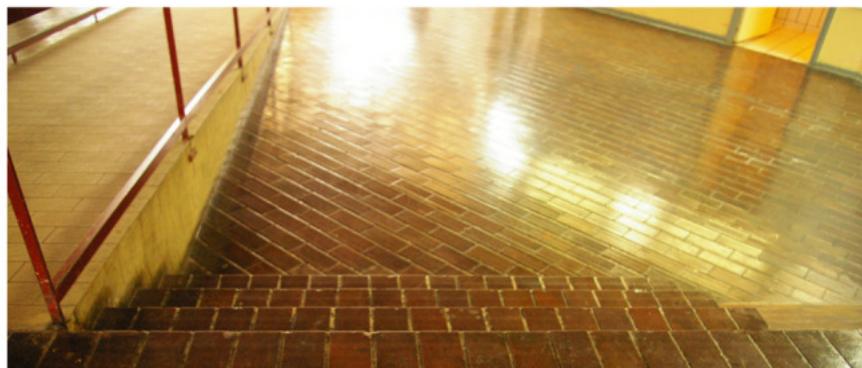
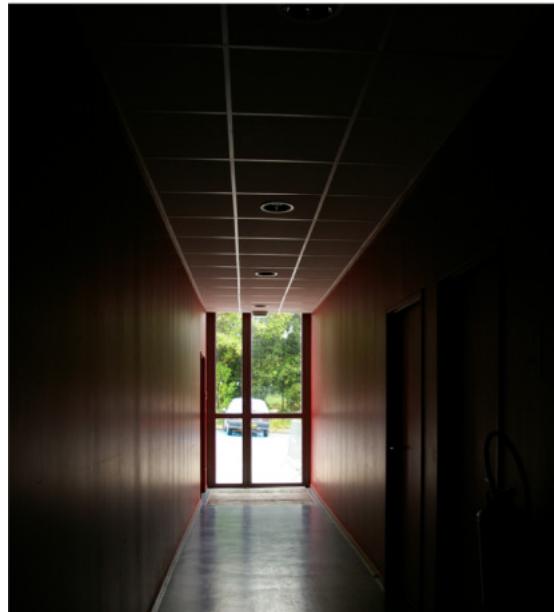
LIGHTNING / intensities

➤ 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 ...**

