

Design Manual for ID Architecture



Inclusive Design - Architecture for Everyone

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1. Seven principles of Inclusive Design

To achieve full Inclusive Design, the following principles must apply:

1. **Equitable use:** useful and marketable to people with diverse abilities;
2. **Flexibility in use:** accommodates a wide range of individual preferences and abilities;
3. **Simple and intuitive use:** easy to understand regardless of the user's experience, knowledge, language skills, or current concentration level;
4. **Perceptible information:** communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities;
5. **Tolerance for error:** minimizes hazards and adverse consequences of accidental or unintended actions;
6. **Low physical effort:** can be used effectively and comfortably and with a minimum of fatigue;
7. **Size and space:** appropriate size and space is provided for approach, reach, manipulation and use, regardless of the user's body size, posture

2. General considerations (examples):

House number to be lit, big lettering and visible clearly from the street.

Entrances to have no threshold, to be high in contrast though color material and light (all three!). Working inter phones, bells and post boxes; all clearly visible at first approach and tactually detectable. Canopy to entrance and ideally vibrating entrance notification system and camera at inter phone.

Steps, pedestals and further obstacles TO BE AVOIDED. **Planting, posts, sculptures** with min. 100 cm distance from each other.

Lobbies, stairs and corridors to be lit bright with clear arrangement and high contrast. Signage to be easy to read and understand. No emergency lighting in main staircases and corridors, but always fully lit

Floor and wall finishes to be of good contrast between floor and wall. Door frames clearly visible and tactile. Floor finishes to be sound proof.

Width of **corridor** to be min. 150 cm in case of doors opening into room min. 180 cm in case of doors opening into corridor.

Different areas to be organized through different finishes with high contrast; ideally add handrails

Reception to be without threshold on the way to and within the reception height of counter at 85 cm with wheelchair accessibility (free zone of min. 67 cm height and 30 cm depth under counter). Movement areas for wheelchairs to be min. 150 cm by 150 cm. Aids for hearing and communication (e.g. induction loops, text display) to be installed as well as display information in simple + short language. Information to be detectable for people with vision impairments.

Waiting areas with optical and acoustic call and appropriate seating. Ideally with fresh air and always with space for wheelchairs.

2. Systems for information and orientation

Visitor guidance system:

- clear and immediately visible signage
- high contrast
- help of orientation through hand rails + coherent signage

Emergency maps, schemes:

- mount at 120-130 cm height
- antiglare surfaces and signage with high contrast
- information accessible for blind people
- maps for orientation in Braille
- ideally tactile model of building in reception area

Visual identification:

- exterior: pictograms 40 x 40 cm in high contrast
- exterior: lettering 10-14 cm high
- interior: pictograms and letters smaller but high contrast

Signage:

- notifications and room numbers/ names in tactile letters (cross section is a prism) and in Braille
- logos lifted and tactile
- signage and pictograms to be seen easily by people with visual impairments (high contrast) and people in wheelchairs or children (height)
- signage for disabled toilets, lifts, etc.

Guidance system for blind people:

- easy to follow interior ways are supported through guidance system
- guidance system to be composed from guiding lines and fields of attention
- visually impaired people will be guided to from and to points of public transport to and from entrances and to information display (in Braille)
- guidance system for horizontal as well as vertical circulation
- functional areas (e.g. reception, meeting rooms, toilets) to be included in guidance system
- change of floor finish at crossings
- stairs, lifts and other obstacles (e.g. benches, plant buckets) are to be marked through fields of attention

Escape routes:

- to be integrated in guiding system for the blind
- marked through special lighting and through sound signals
- separate emergency routes for wheelchair users to be clearly marked

Fire alarm:

- installation of light flashes for people with hearing impairments
- sound signals for people with visual impairments
- ideally further visual or vibro-tactile alarms

3. Doors

Clear width:

- min. 90 cm

Clear height:

- 210-220 cm
- no threshold

Door frame:

- high contrast to wall
- tactile

Automatic doors::

- automatic sliding doors preferred
- heavy doors - especially entrance doors - to be opened automatically at approximation or are to be opened electronically with easy to reach button
- buttons to open are to be installed with min. 250 cm distance to the opening side of swing door at frontal approach and min. 150 cm at other side of door; post to be used if no wall available
- marking of automatic door
- buttons with high visual contrast
- time intervals with sufficient length for people with mobility impairments
- sensors and light barriers to be installed for automatic doors
- at permanently open doors with catching devices as allowed through building regulations (e.g. self closing in combination with magnets and fire alarms)

Fire doors:

- electronic button installed
- if opened permanently, catching devices necessary (according to building regulations)

Swinging and revolving doors:

- to be avoided (independently if automatic or not)

Swinging doors:

- attention to ease of running
- bars for closing in 85 cm height or extended door handle
- kick plate of 35 cm height

Door handles and openers:

- in 85 cm height with rounded down edges
- ease of running, extended on both sides
- high contrast
- distance to nearest corner min. 50 cm

Glass doors:

- safety marking
- high contrast of outer edges
- apply all principles as above

Windscreens:

- min. 250 cm depth and 200 cm width (ideally 300 cm width) at sliding doors at least 150 x 150 cm

Panic bars:

- on double swing doors along escape routes at height of door handles

Door mats and grating:

- small grate to allow rolling over and avoid "falling through" of walking frames

Office doors:

- as possible including glass for communication through door and for people with hearing impairments



Person having difficulties to enter the house due to inappropriate door opening system.

4. Lifts

Movement area in front of lifts:

- min. 150 x 150 cm
- min. 150 x 250 cm with stairs downwards located opposite lift

Control panel outside lift cabin (on floors):

- in 85 cm height and 50 cm distance to nearest corner
- size and handling simple (see point control panel)

Cabin doors:

- clear width min. 90 cm

Light barriers:

- in 50 cm height

Size of cabin:

- min. 110 x 140 cm (ideally 125 x 160 cm)

Equipment of cabin:

- handrail, top in 85 cm height, diameter 30 - 45 cm
- mirror from 40 cm above floor to 160 cm at full width opposite cabin door (help of orientation for wheelchair users)
- folding seat
- bright, non-dazzling light

Control panel:

- distance to (cabin) corner min. 50 cm
- tactile buttons ease in running and of high contrast in height of 85 cm; size 5 x 5 cm
- no touch keys
- size of lettering 25 mm, lifted by 1 mm (cross section is prism) and Braille
- panel to be protected from accidental use in crowded elevator
- ideally additional panel in eye height with Braille (in about 130 - 140 cm height)

Indication of floor:

- optical
- acoustic in elevators
- floor number included in room numbering

Alarm system (camera based):

- tactile and visually easy to grasp
- lettering in Braille and tactile letters
- emergency intercom with luminous display indicating availability to talk to somebody on the other side
- further luminous display and sound signal stating "help is arriving"

Signage for elevators:

- panels indicating lifts

5. Stairs (always have an alternative ramp or elevator)

General requirements:

- solid centre width min. 135 cm

Staircases:

- change of floor finish (color as well as surface) directly in front of the first and behind the last step (fields of attention)
- stairs and platforms to be lit brightly with anti-glare and of high contrast

Treads:

- at least first and last tread to be marked with high contrast
- marking in front and onto the tread
- no drip noses under treads
- no open steps
- non-slip floor finish
- ideally all treads marked with high contrast

Platforms:

- platform after max. 15 steps with length of at least 135 cm
- ideally including seating

Hand rails:

- on both sides in 85 cm height
- 30 - 45 cm diameter
- extended 30 cm over first / last tread
- 9 cm distance to wall
- fixed from below only
- skid-proof with good grip
- high contrast to background
- include guidance system along hand rail
- ideally 2nd handrail to be fixed 20 cm lower for children and persons of short stature

Lighting:

- bright, anti-glare light

6. Meeting rooms

General requirements:

- hearing and communication aids (e.g. induction loops, transportable aids, text panels, ...)
- continuously adjustable and anti-glare light with high luminous density
- good sound insulation
- curtains (also to avoid sound reflection) or other light protection
- minimal electrical interfering fields
- TV and video with headphones

Speaker's desk:

- wheelchair accessible
- adjustable in height
- good lighting of place for translator for sign language
- speaker and speaker's desk well lit for people with hearing impairments to read of
- microphones (also for translator of sign language)

Seating:

- with fixed seating central, flexible and integrative places for wheelchairs
- space for wheelchair 150 x 150 cm for central places and 150 x 100 for corridor places
- ideally chairs to be of different heights, formed ergonomic with seating
- moulds not too deep, to have an arm rest for aid to get up and folding seats easy to handle

7. Toilets

General requirements:

- ideally barrier free toilet in every floor; min. 1 barrier free toilet in central position in building
- barrier free toilet can be integrated in regular toilets
- one table for swaddling; size 200 x 90 cm and 150 x 150 free movement space in front of it
- all controls in 85 cm height and min. 50 cm distance to corner
- emergency rope in height of 20 cm
- toilet, basin, controls, bars, etc. with high contrast
- signs leading towards disabled toilet and baby change
- toilet door: add easy to read and tactile pictograms (sign for men's and women's toilets)

Lighting:

- bright anti-glare light

Movement area in front of toilet:

- must be min. 150 x 150 cm

Surface for Change from wheelchair to toilet:

- min. 95 cm left and right of the toilet and 70 deep movement area

WC door:

- to be openable towards the outside and to be open-able from outside in case of an emergency
- bars to close door in 85 cm height
- ideally automatic doors

Door locks:

- Lock with good sized handle with ease in running or automatic locking device and button
- good distance between door handle and lock

Emergency call system:

- tactile and visually easy to see
- signal easy to hear and easy to see
- emergency ropes next to basins and toilets from 20 cm above floor (labelled with "emergency" sign, easy to see)
- regular checks to ensure emergency equipment is fully functioning

Toilet seat:

- height of seating: 48 cm
- ideally to be adjustable in height
- free depth of min. 70 cm (elongated version)
- back rest; 55 cm behind front edge of toilet seat
- robust seat and fixing
- ideally integrated warm water shower and integrated warm air blow (for people with restrictions in use of arms)

In-wall wash-up system:

- ease in running with big button
- integrate wash-up system in front side of hand rails or automatic wash-up

Grab rails at WC:

- grab rails left and right of toilet
- mounted in 85 cm height with distance between rails of 70 cm
- going out over Wc by 15 cm
- anti-slip surface
- wall might need reinforcement at position of grab rails

Water tap connection including hose:

- in reach for wheelchair users
- min. 50 cm distance from corner
- include drain underneath tap connection
- always include tap connection for possible later use

Urinals:

- min. one urinal with front edge in height of 48 cm

Paper holder:

- on both sides with grab bars

Wash basin:

- wheelchair accessible (carcass, basin in 80 - 82 cm height; space for legs of min. 67 cm height and 30 cm depth)
- single-lever mixer with elongated arm
- ideally proximity sensors
- ideally grab bars left and right of basin

Towel + soap dispenser, hand dryer:

- one arm operable in 85 cm height
- sensor
- dispenser for single leaves
- liquid soap dispenser above or next to basin with dripping bowl
- circle of arm reach for wheelchair user to be considered

Mirror:

- 50 x 90 cm portrait from upper edge of basin
- ideally additional mirror 140 x 60 cm portrait (mounted low)

Waste bin

open paper waste bin and bin for hygiene with swivelling cover

120 cm movement area for side approach

opening in 85 cm height

ideally under or very near to towel dispenser

Coat hooks

- mounted in 85 cm height

Deposit board

- in 85 cm height (min. 30 cm width and 15 cm depth)

Light switch

in 85 cm height

high contrast

8. Shower

General requirements:

- all controls in 85 cm height and min distance of 50 cm to corner (apart from emergency rope: from 20 cm above floor)

Lighting:

- bright, anti-glare lighting

Movement area:

- min. 150 x 150 cm movement area

Shower tray:

- accessible for wheelchair users

Door:

- opening towards the outside or sliding doors
- closing bars in 85 cm height or automatic doors

Door lock:

- Lock with good sized handle with ease in running or automatic locking device and button
- good distance between door handle and lock

Emergency call system:

- tactile and visually easy to see
- signal easy to hear and easy to see
- emergency ropes next to basins and toilets from 20 cm above floor (labelled with "emergency" sign, easy to see)
- regular checks to ensure emergency equipment is fully functioning
- emergency rope clearly marked "emergency for disabled shower"

Grab bar:

- in 85 cm height, length on each wall 120 cm
- to be hang hand shower on vertical bar
- wall might need reinforcement at position of grab bars

Shower control + armature:

- elongated single-lever mixer directly over grab bars in 85 cm height
- 45°C temperature limit

Soap bowl:

in 85 cm height

Shower seat (folding seat):

- must be hanged
- min. depth of seat 45 cm, height of seat 50 cm and width 45 cm
- min. 50 cm from nearest corner
- ideally seat with foldable arm rest

Further equipment:

- deposit board (accessible for wheelchair 30 cm depth and 50 cm width)

In case of a both tub:

- must have a seat on one side (can be built-in or portable)



Elderly person having difficulties to coordinate movement in the bathroom due to inappropriate handle position.

9. Dressing cabin

Wheelchair accessible cabins:

- appropriate amount of cabins; at least one

Design:

- controls, buttons and bars of high contrast

Lighting:

- bright, anti-glare light

Movement area:

- min. 150 x 150 cm

Grab bars:

- from cabin to shower in 85 cm height along the wall

Cloth hooks:

- in 85 cm height at least 3 hooks

Further equipment:

- deposit board (accessible for wheelchair 30 cm depth and 50 cm width)

Lockers in sports halls and public baths:

- folding down cloth bar or in 100 cm height
- bar to be moved outwards and hangars to be able to take down
- lock in 85 cm height above ground
- additional handle

Functional seating or lying area:

- lounge in 50 cm height and of 190 cm length + 90 cm width
 - free standing on 3 sides or moveable
 - seating with back rest and arm rests near grab bars
10. Electrical Equipment

- Light switches, plugs, help button and automatic door opener, ...:
- in 85 cm height and distance of min. 50 cm from nearest corner
 - high contrast to wall
 - buttons with big surface and tactile advice

Emergency and alarms:

- optical and acoustic
- in all (disabled) toilets
- in all elevators

Light barriers in lifts:

- in 50 cm height

Hotel rooms:

- free of thresholds (also between restaurant, reception, ... and rooms)
in case of stairs ramp or lift to be added and equipped with clear signage
- 5% disabled parking or min. one space
- clear width of doors 90 cm
- bed to be free standing with distance between bed and wall of 120 cm for wheelchair approach (can be moveable bed)
- height of bed 50 cm (upper edge of mattress)
- ideally height of bed adjustable
- mirror from 50 cm above floor (for wheelchair user and standing person) can be mounted to door
- wardrobe with flexible bars (adjustable in height)
- 7 - 8 sqm bathroom
- no thresholds to room, terrace or balcony
- advise for people with impairments to be easily found in room