

Part D – Reference project

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Introduction to Part D

The example of a fictitious project is used to illustrate how the Guideline Accessibility in Building Design can be applied in the different procedural phases of the RBBau Guidelines.

The starting point is the construction of a visitors centre for a federal foundation as an idealised and typical Federal Government building project. The building project is located in a topographically uneven plot in the city centre and its space allocation plan envisages public areas and workplaces as well as utilising the exterior surroundings. It thus affects a number of the areas of action outlined in Part C of the Guideline, and comprehensively illustrates the requirements for accessibility in building design.

In accordance with Part B of the Guideline, reference excerpts of the CONCEPT and PROOF to confirm ACCESSIBILITY will be presented as text and graphically describing the procedural steps of requirements planning, ES-Bau, and EW-Bau. The samples given in Part B of the Guideline will be used to structure textual explanations and are plotted to scale as a basis for the legends of the graphical illustrations.

The reference project described below provides orientation for developing an ACCESSIBILITY CONCEPT to qualify for ES-Bau at a level of detail that corresponds to a completed pre-draft planning process (LP 2 on the HOAI scale).

The ACCESSIBILITY CONCEPT is developed on the basis of the planning status established for the individual planning task. The level of detail needs to be adapted to the scope of services agreed upon. Should, for example, only part of the services necessary for a pre-draft be commissioned, the level of presentation detail may be reduced accordingly.

The reference project described below provides orientation for compiling an ACCESSIBILITY PROOF in the context of preparing EW-Bau at the level of detail that corresponds to the preparation of planning application documents extended to include parts of the detailed planning phase (EW-Bau, LP 4, and in some cases LP 5 on the HOAI scale).

The ACCESSIBILITY PROOF is compiled on the basis of the planning status established for the individual planning task. The level of detail needs to be adapted to the services agreed upon.



Visualisation of reference project

Requirements planning

Building plot, topography

Because of the public impact intended with the building's function, a building plot in the city of Z should be chosen that is close to its centre and makes the building easy to find. It is important to ensure that at least access routes to the main entrance and the planned catering area can be barrier-free.

Exterior access routes

Accessible connections need to be ensured for public transport and private transport options.

One accessible parking space should be available each for publicly accessible areas and workplaces.

Publicly accessible area

The entire publicly accessible area needs to be designed barrier-free.

Access routes

Horizontal as well as vertical access needs to be designed accessibly. Particular emphasis should be placed on the needs of precautionary fire protection (widths of rescue routes).

Space requirements

Festlegung von Räumen mit besonderen Anforderungen an die barrierefreie Gestaltung:

- **Lobby, information counter (35 m²)**, no additional space needed
The lobby and the information counter need to be designed accessibly. The aim is to position the information counter where visual contact to the main entrance, vertical access routes, and the entrance to the multi-purpose hall and the library can be ensured. Sitting areas need to be integrated. The lobby needs to have an accessible reception counter equipped with a mobile audio induction loop system and a tactile plan.
- **Multi-purpose hall (110 m²)**, no additional space needed
Room acoustics comply with the requirements of DIN 18041 concerning voice communication over medium distances. At least one quarter of the potential audience space needs to be equipped with an audio induction loop system or comparable technology. An illumination intensity of 1000 lux must be possible. Stages need to be easy to reach accessibly.
- **Cloakroom (15 m²)**, no additional space needed
The cloakroom must be fit for accessible use.
- **Library (100 m²)**, no additional space needed
The outline of the library should enable the use of daylight as much as possible. Illumination intensity of 1000 lux must be possible. Room acoustics comply with the requirements of DIN 18041 concerning voice communication over short distances.

- **Reading garden (150 m²)**, no additional space needed
A nearby, accessible reading garden is to be added to the library.
- **Sanitary rooms (5.1 m²)**, 70% additional space needed
In public areas, one accessible toilet, approachable from both sides for wheelchair users and including a washbasin, is to be envisaged in accordance with the Ordinance on Places of Assembly (*Versammlungsstättenverordnung*) and VDI 6000 Part 3 (up to 300 visitor seats). This sanitary room needs to be installed at a central location within the building, preferably close to the multi-purpose hall. All quality requirements are obligatory. The requirements with regard to emergency alarms for visitors with auditory impairments need to be taken into account.
- **Guest apartment (45 m²)**, 29% additional space needed
The guest apartment is to be designed accessibly and fit for wheelchair use.
- **Catering and restaurant area (55 m²)**, no additional space needed
needs to be accessible. Specific measures for people with sensory impairments need to be taken into account.
- **Accessible terrace (50 m²)**, no additional space needed
can be used for small receptions with direct access from the library or restaurant area.

A total of 3.4% additional space is required for the building's interior; no additional space is needed for its exterior.

Workplaces

On the basis of Integration Agreement XX, there needs to be a 15% share of people with disabilities the staff working at the foundation. The catering area is not expected to have employees with special requirements for the built environment.

All workplaces at the foundation need to have an accessible design to enable recruitment flexibility. The additional space needed for usable floor areas (*Nutzfläche*, NF) (*) needs to be based on the function of each room. The additional space needed for gross floor areas (*Bruttogrundfläche*, BGF) amounts to 5.8%. Additional adaptations can be implemented by deploying suitable furnishings and fittings in individual cases.

- **single room, management (19.80 m²)** * 10%
- **single room, secretariat (18 m²)** * 20%
- **office for four to five employees (40 m²)** * 11%
- **archive (20 m²)**, no additional space needed
- **meeting room (10 m²)**, no additional space needed
- **storage room (6 m²)**, no additional space needed
- **kitchenette (15 m²)**, * 10%

Horizontal and vertical access routes need to be designed accessibly. Special importance is to be attached to issues of precautionary fire protection. Traffic areas are to be designed as communication zones to the extent possible. The width of circulation areas may not fall below 1.50 m.

Sanitary rooms (9 m²), 70% additional space needed
According to VDI 6000 Part 2, an accessible sanitary installation including a toilet approachable from both sides for wheelchair users and a washbasin are to be envisaged for areas designated for workplaces. To enable retrofitting, this room needs to be planned to provide sufficient space for a stretcher bed. Moreover, the possibility to retrofit a shower to be reachable from the toilet seat needs to be reviewed. The spaces for the shower and the stretcher bed may overlap. Integration Agreement XX does not specify requirements for kitchen personnel rooms.

Overall concept

Integration into the urban environment

» Chapters 1.1, 1.2, 1.3, 1.4, and 1.5

The foundation is located in the centre of Z on the edge of its pedestrian zone. The entrance to the foundation will be positioned to be clearly visible from the pedestrian zone as a place of welcome.

There is an accessible bus stop at a distance of 130 m. As the public street environment is also designed accessibly, from there people with motor and sensory impairments can reach the library without impediments. Moreover, the accessible design of a path leading through the garden to the basement of the building offers the foundation staff a short and comfortable walk from the bus stop to their place of work.

Private transport connections are ensured from the south through Z Lane, which, according to the local development plan, allows access to residents and for deliveries. Accordingly, two accessible parking spaces are available in the courtyard as envisaged in requirements planning. The topography at the outset is characterised by uneven terrain and these topographic starting conditions have been used to provide an even-ground entry into the garden from the basement floor, and to slightly raise the ground floor. As a result, the main entrance can be reached via an accessible stairs-ramp combination.

Orientation and guidance systems

» Chapters 2.1, 2.2, 2.3

The centre of city Z already has a consistent orientation and guidance system in place, taking into account the needs of people with sensory and cognitive impairments.

It has been planned that the foundation's courtyard will be open to the public, and this is why

its design is based on the public orientation and guidance system. The existing orientation and guidance system follows a clear zoning approach and separates zones for movement/access from those for furnishings and fittings and installations.

This zoning principle is picked up again in the newly built "city courtyard" by walkways establishing links to the main entrance, the café, and the accessible parking spaces. In analogy to the existing materials, a visually contrasting design is envisaged to differentiate between walkways and common areas. This enables a clear delineation of areas that need to be kept clear of temporary furniture for outdoor cafeteria dining.

Shared routing is also continued in the building's interior spaces. A clear layout structure significantly facilitates intuitive orientation. The components of vertical access (stairs, lift) are positioned next to each other. The starting and destination points are the same on every floor. The colours and materials used and appropriate illumination are additional factors supporting orientation, thus making it possible to dispense with a separate guidance system for people with visual impairments. A tactile floor plan of the building including information on escape routes is integrated into the structure of the information counter.

Visitors are guided from the main entrance, which is located on the ground floor of the square, to the information counter and from here to vertical access points and to the multi-purpose hall. The guidance system for the garden floor includes the route from the vertical access to the library. Visitors to the café can also use the café entrance. The employees of the foundation may enter the building through the main entrance on the square or through the garden.

Floor plan, garden floor, ACCESSIBILITY CONCEPT, scale 1:200



Exterior spaces

Walkways and exterior circulation areas

» Chapters 3.1 and 3.2

The concept for access is simple and easy to follow and leads directly to the entrances. As a matter of principle, shared routing is offered to all users of the building. Additionally, there is the option to access the building through the garden where there is a separate, staff-only entrance that is also designed accessibly.

The width of the walkways in the courtyard is 1.20 m and has been chosen as a comfortable width for pedestrians as well as for users of wheelchairs and walking frames. There is a sufficient amount of space wide enough for them to pass each other. In the garden, a width of 1.50 m to 2.00 m has been provided on the main path and all side paths and terraces. This ensures comfortable manoeuvring space for wheelchair users. Because of the topography of the building plot, path gradients can consistently be kept below 3% or in some stretches below 4% in the “city courtyard”. The main entrance requires a ramp as described below.

The main garden path providing alternative routing from the bus stop can be designed as an inclined walkway with gradients of up to 6% (including, for instance, resting platforms every 10 m). This is justifiable, as this path is not the primary access route to the main entrance.

Exterior ramps

» Chapters 5.1 and 5.2

A straight ramp length at a width of 1.50 m is envisaged for barrier-free access to the main entrance. It compensates for a difference in elevation of 24 cm. A minimum distance of 3 m is maintained to the stairs opposite the ramp leading downwards.

Exterior stairs

» Chapters 6.1 and 6.2

An accessible stairway is envisaged opposite the ramp. The elevation of the “city courtyard” is 3.30 m higher than the garden. This difference is compensated with an accessibly designed stairway. Additional ramp access has not been considered because of the great difference in elevation. During opening hours, the lift inside the building may also be used.

Exterior fixtures

» Chapter 11.1

Illumination is envisaged for the exterior space, especially the publicly accessible courtyard. Accessible seating is provided in the exterior space in both the courtyard and the garden.

Special-purpose exterior spaces

» Chapters 15.1 and 15.2

An accessible reading garden is to be added to the library as stipulated by requirements planning. This garden is positioned directly in front of the library located on the basement floor. The geometric outline of the garden consists of cut hedges where sitting niches have been integrated in some places. According to the planning concept, these sitting areas will be designed so as to be comfortably usable for wheelchair users as well. The basic geometry takes into account necessary manoeuvring and movement areas.

Floor plan, ground floor, ACCESSIBILITY CONCEPT, scale: 1:200



Interior spaces

The access route concept is simple and readily understandable. The idea of shared routing is implemented in the building's interior by giving the elements of vertical access (stairs, lift) identical starting and destination points on every floor. Horizontal circulation areas have a generous design and overlap with resting and communication areas.

Corridors and interior circulation areas

» Chapters 4.1 and 4.2

Horizontal circulation areas are adequately sized. The main traffic routes have a width of at least 1.80 m. Usable clear heights of 2.20 m are not reduced by any fixtures.

Interior ramps

» Chapters 5.1 and 5.2

The multi-purpose hall has been designed to comprise two levels as an adaptation to the surrounding terrain. The two levels have a difference in elevation of 57 cm, and are connected by an accessible ramp.

Interior stairs

» Chapters 6.1 and 6.2

A continuous staircase connects all three floors. The clear width of passage is 120 cm. Each flight of stairs is to have an accessible design. It is not possible to walk beneath the stairs on the garden floor. The free-standing stairway leading into the event hall is designed in clear visual and haptic contrasts to the surrounding surfaces, enabling a clear marking of the stairs as free-standing components of the room.

Lifts

» Chapters 7.1 and 7.2

A lift designed as Type 2 in accordance with DIN 80-71 connects all three floors. The lift is equipped with a system for acoustic announcements.

Doors

» Chapters 8.1, 8.2, and 8.4

As a general rule, the clear passage width of doors is 90 cm. The only exceptions are doors in areas for catering personnel (see requirements planning decision) and the technical room on the garden floor. The heights of doors depend on their design and vary between 205 cm and 235 cm. As the reveal depths of doors to the outside exceed 26 cm, technical compensation measures are used, and a 50 cm-wide lateral movement area is kept clear for manually operated doors.

All doors along the sketched-out routing are equipped with automatic door systems, activation buttons, or hold-open devices. The doors on each floor leading to the staircase can be an exception as it can be assumed that people with motor impairments will use the lift instead.

Transitions between interior and exterior spaces need to be designed without thresholds. This applies to both the ground floor area and the connection to the garden.

Emergency alarm and evacuation

» Chapters 9.1 and 9.2

Alarm systems for people with auditory impairments are based on the bi-sensory principle. Employees can be alerted through their mobile devices. Publicly accessible toilets are equipped with optical alarm systems. Specific organisational measures need to be taken for the evacuation of employees from the first floor. A safe area has been installed within the staircase as a temporary waiting area for people using walking aids or wheelchairs.

Floor plan, upper floor, ACCESSIBILITY CONCEPT, scale: 1:200



Service counters, cash registers, controls, assistance centres, and waiting rooms

» Chapters 10.1, 10.2, and 10.3

An accessible information counter is located in the entrance lobby. An audio induction loop system is available for visitors with auditory impairments.

Operational elements and communications systems

» Chapter 12.2

Intercom systems have been installed at the main entrance door on the ground floor and on the garden floor (exit: information counter and secretariat, first floor)

Windows and glass surfaces

» Chapters 13.1 and 13.2

Window parapets are 120 cm high in workplaces. The garden floor has wall-length windows in the library and the guest apartment.

Entrance and lobby

» Chapters 15.1 and 15.2

Publicly accessible areas: the entrance area is generously sized as it also serves as the lobby of the multi-purpose hall. Visitors using mobility aids have sufficient movement areas. Moreover, the lobby is fitted with an accessible information counter.

The materials and colours used support the concept for guiding guests from the entrance to the information counter, and from here to the event room and to vertical access points.

Wheelchair parking spaces and cloakrooms

» Chapters 16.1 and 16.2

Publicly accessible areas: an appropriately sized cloakroom is located on the garden floor.

Workplaces: Employees using wheelchairs can decide themselves whether to switch from their street wheelchair to another for indoor use. A flexible area has been planned within the open access zone in front of the workplaces, which may be used, for instance, for switching wheelchairs, if necessary, or as a small meeting corner.

Event halls

» Chapters 17.1, 17.2, and 17.3

Publicly accessible areas: the small event and exhibition hall with flexible functions has been designed accessibly. Reachability has been ensured by an accessible ramp connecting the two levels. The seating is not fixed but flexible; the position of the stage is variable.

This results in the possibility to offer a number of seats as needed for wheelchair users, their accompanying persons, and for people with walking aids. Room acoustics allow for a reduced reverberation time of 20% to improve audio quality for a better understanding. In the middle of the room, an area measuring 4.50 × 4.50 m is equipped with an audio induction loop.






















Hospitality

» Chapters 19.1 and 19.2

Publicly accessible areas: All rooms belonging to the café have been designed with sufficient movement areas. The counter has an integrated section that is lower and offers a clear space below it so that it can be used by sitting people and wheelchair users.

Workplaces: The kitchenettes have been designed accessibly.

Legend ACCESSIBILITY CONCEPT, scale: 1:200

	publicly accessible areas		accessible information counter
	workplaces		communication aid
	shared routing visitors		accessible toilets
	separate routing visitors with impairments		accessible bathrooms
	separate routing visitors without impairments		special requirements TBS (technical building services)
	shared routing staff		accessible workplace (A for <i>Arbeitsstätte</i>)
	separate routing staff with impairments		
	separate routing staff without impairments		
	accessible public transport stop or station		
	accessible parking space		
	accessible ramp		
	accessible staircase		
	accessible lift		
	threshold-free transition exterior/interior		
	special requirements for fire prevention		

Sanitary installations

» Chapters 20.1 and 20.2

Publicly accessible areas: in accordance with requirements planning, one accessible sanitary room has been envisaged including a toilet approachable from both sides for wheelchair users. The gender-neutral solution has been preferred.

Space requirements: 220 × 220 cm.

Workplaces: in accordance with requirements planning, one gender-neutral, accessible toilet approachable from both sides for wheelchair users and space for a stretcher bed has been envisaged. The toilet was positioned close to the accessible workplaces.

Minimum space requirements: 220 × 320 cm.

Office workplaces

» Chapters 21.1 and 21.2

Workplaces: in accordance with requirements planning, every workplace can be used by employees with mobility impairments. Circulation areas are intended to serve as communication zones and accordingly, have been sized generously and designed flexibly.

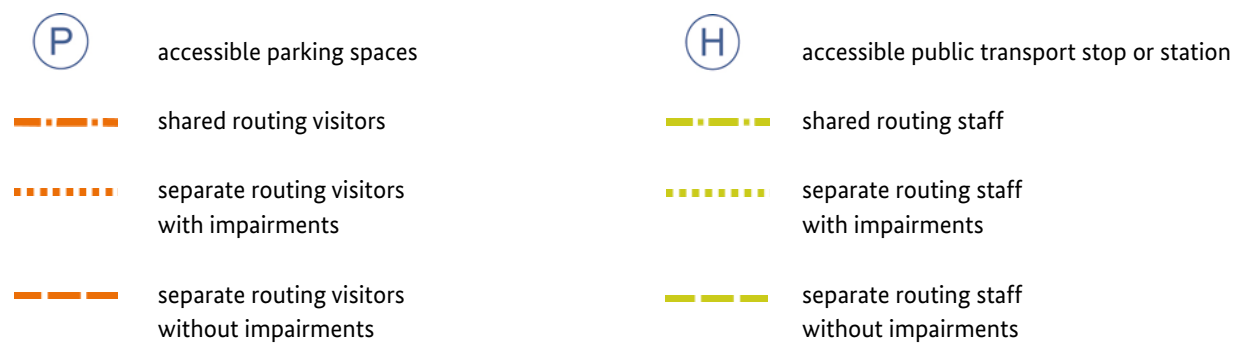
Accommodation

» Chapters 22.1 and 22.2

The guest apartment on the garden floor is fit for accessible use. Space requirements and suitable furnishings and fittings have been taken into account.

EW-Bau ACCESSIBILITY PROOF

Layout plan, ACCESSIBILITY PROOF, scale: 1:750



Overall concept

Integration into the urban environment

» Chapters 1.1, 1.2, 1.3, 1.4, and 1.5

cf. ACCESSIBILITY CONCEPT

Orientation and guidance systems

» Chapter 2.1

cf. ACCESSIBILITY CONCEPT

The centre of city Z already has a consistent orientation and guidance system in place, taking into account the needs of people with sensory and cognitive impairments.

As the courtyard belonging to the foundation is envisaged to be open to the public, its design has been based on the public orientation and guidance system.

The existing orientation and guidance system follows a clear zoning approach and separates zones for movement/access from those for furnishings and fittings and installations.

This zoning principle is picked up again in the newly built “city courtyard” by walkways establishing links to the main entrance, the café, and to the accessible parking spaces. In analogy to the existing materials, a visually contrasting design is envisaged to differentiate between walkways and common areas. This enables a clear delineation of areas that need to be kept clear of temporary furniture for outdoor cafeteria dining.

Guidance elements

» Chapter 2.4

The change in materials used for walkways and other areas on the square is designed with visual and tactile contrasts and is developed as a consistent guiding line in the “city courtyard” for people with sensory and cognitive impairments. The guiding lines connect with those in the pedestrian

zone that are of analogous design, and thus make up a continuous and consistent guidance system.

In the garden square, the transition between the path surface and lawn and hedge areas has been developed as a continuous guiding line.

Visual perception, materials, and visual contrasts

» Chapter 2.5

In the “city courtyard” the walkways have been designed in a light-coloured granite material while anthracite-coloured granite was used for outdoor dining areas and installations.

In the garden, there is a clearly perceivable visual contrast between planted areas and the light-coloured surface of the garden path.

Tactile perception, materials, and tactile contrasts

» Chapter 2.6

The walkways have been planned as large-format granite slabs with relatively narrow joints. Common areas have been designed with small cobblestones with naturally rough surfaces as a clear tactile contrast to the slabs.

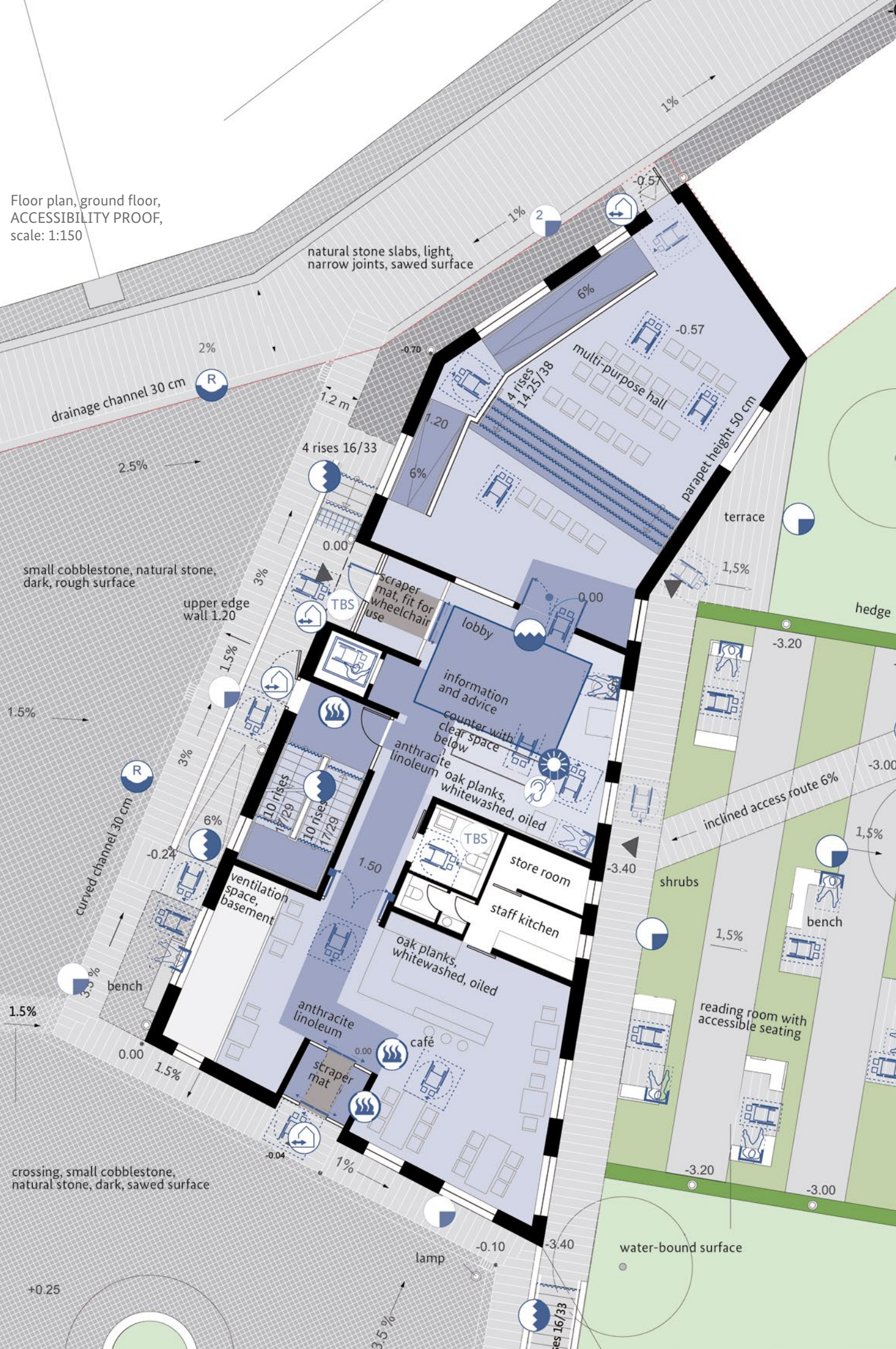
A line of sawed small cobblestones has been integrated into the square to link the accessible parking spaces to the main entrance. In the garden, the structural difference between planted areas and the garden paths made of smooth, enzyme-bound granite can be perceived tactilely.

Exterior illumination

» Chapter 2.8

The illumination of walkways is provided by wall-mounted lamps at a height of 3.50 m. With the selection of LED bulbs, the light intensity can be adapted to actual lighting conditions at any given time.

Floor plan, ground floor,
ACCESSIBILITY PROOF,
scale: 1:150



Transition exterior/interior

» Chapters 1.1 and 8.4

The entrance doors are an important element of the guidance system. They have been accentuated in their shapes and frames by the light-coloured natural stone, and can be detected intuitively. The main entrance door is controlled by a motion sensor, which supports finding the direction towards the building. In the vestibule area, the scraper mat is integrated into the material and colour concept and part of the guidance system. All thresholds are designed to enable even access. To avoid rainwater from being swept through the door by wind, the threshold and scraper zones have been combined with even drainage channels.

Interior guidance system

» Chapter 2.3

cf. ACCESSIBILITY CONCEPT

Interior guidance elements

» Chapter 2.4

• Floor surfaces concept

The most important elements of the guidance system are the zoning of the floor materials, their colours and luminance. The oak parquet flooring (luminance ...) has been combined with an anthracite-coloured linoleum flooring (luminance ...). The wood stairs are made of massive oak of the same colour as the oak flooring. The difference in the flooring can be perceived not only visually but also tactilely. A brass profile has been used for the transition between the two materials, which can be detected by a long cane (see detail 05.01.19).

• High-contrast wall design

refers to the following elements supporting guidance:
the colours have been chosen for the wall design as follows: (RAL colour ...), door frames and skirting boards almost white (RAL ...), door leave differentiated on the basis of their significance: important doors (RAL...), secondary doors (RAL...).

• Markings on handrails of stairs

are part of the orientation system and indicate the specific floor of the building.

• Tactile floor plans

have been integrated into the information counter at a scale of 1:100.

Interior illumination

» Chapter 2.9

The illumination concept supports the structuring of rooms. The changes of flooring materials are marked with spot lighting. The lobby area has consistent lighting encompassing its entire space. The information counter uses 1,000 lux and is perceived as the brightest area in the lobby. Shadow formation and blinding effects have been minimised accordingly.

Exterior spaces (excerpt)

Walkways and exterior circulation areas

The concept for access is simple and easy to follow and leads directly to the entrances. As a matter of principle, shared routing is offered to all users of the building. Additionally, there is the option to access the building through the garden where there is a separate, staff-only entrance that is also designed accessibly.


Basic geometry and space requirements

» Chapter 3.1

The width of the walkways in the courtyard is 1.20 m and has been chosen as a comfortable width for pedestrians as well as for users of wheelchairs and walking frames. There is a sufficient amount of space wide enough for them to pass each other.

In the garden, a width of 1.50 m to 2.00 m has been provided on the main path and all side paths and terraces. This ensures comfortable manoeuvring space for wheelchair users.

Legend ACCESSIBILITY PROOF, scale 1:150

	space requirement 150 × 150 cm and space requirement 130 × 90 cm (plotted to scale)		ground materials, exterior, contrasts, tactile and visual
	passage width 90 cm (plotted to scale)		stair marking
	accessible lift Type 2 110 × 140 cm (plotted to scale)		hazard warning surfaces
	special requirements for fire prevention		accessible drains/drainage
	threshold-free transition exterior/interior		other guidance elements
	special requirements TBS (technical building services)		tactile guidance system, floor
	accessible information counter		tactile guidance system, wall or handrails
	communication aids		guidance system, lighting
	automatic sliding door or hinged and pivoted door (plotted to scale)		
	hinged and pivoted door with pushbutton system (plotted to scale)		
	door with hold-open device (plotted to scale)		
	accessible seat (plotted to scale)		
	flooring materials, interior, surface contrasts, interior, tactile and visual		
	surface contrasts, exterior: tactile		
	ground materials, exterior: accessible		

Gradients of walkways and access routes

» Chapter 3.2

Because of the topography of the building plot, path gradients can consistently be kept below 3% or in some stretches below 4% in the “city courtyard”. A ramp is required for the main entrance.

Because of the even surface of the used sawed granite slabs, the crossfall can be reduced to 1.5% on one side, enabling comfortable use with wheelchairs and walking frames.

An accessible profile was used for the curved drainage channel. The main garden path providing alternative routing from the bus stop can be designed as an inclined walkway with gradients of up to 6%. This is justifiable, as it is not the primary access route to the main entrance. Resting platforms have been placed at 10 m intervals. The crossfall needed for drainage has been provided with a concave profile with a 2% gradient enabling drainage into the vegetation.

Exterior skid-resistance

» Chapter 2.6

Skid resistance can be ensured for the proposed surfaces in both the “city courtyard” and the garden.

Exterior ramps

» Chapters 5.1, 5.2, 5.3, and 5.4

A straight ramp length at a width of 1.50 m is envisaged for barrier-free access to the main entrance. It compensates for a difference in elevation of 24 cm over a length of 4.10 m at a gradient of 6%. On both sides of the ramp, handrails have been placed at grip height. Upstands can be dispensed with as this function is taken over by the house wall, or more precisely a wall segment. The criteria for accessible ramps have been fulfilled. A minimum distance of 3 m is maintained to the stairs opposite the ramp leading downwards.

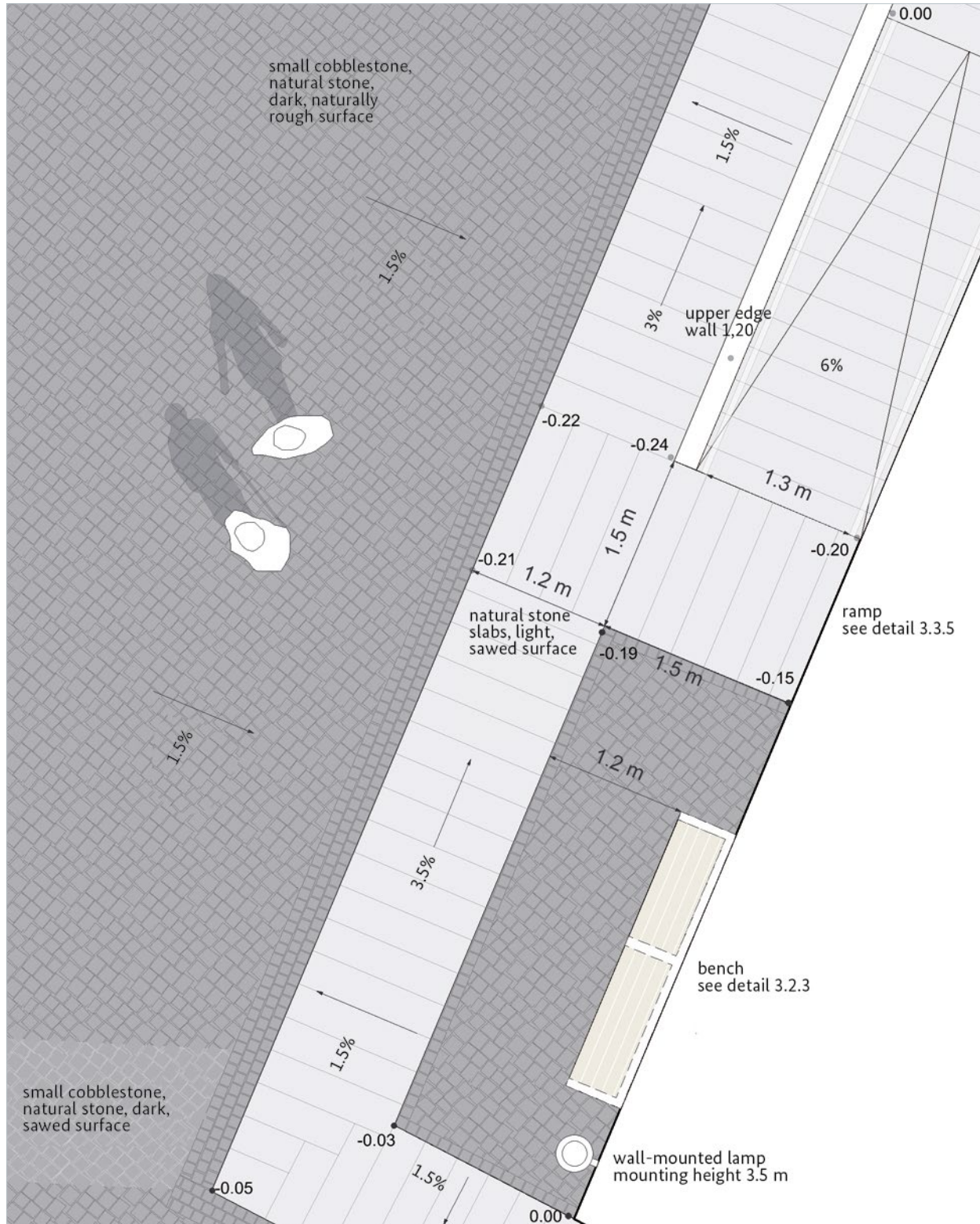
Exterior stairs

» Chapters 6.1, 6.2, 6.3, 6.4, and 6.5

An accessible stairway has been placed opposite the ramp. The treads have been designed with contrasting marking on their upper side. As the four steps can be seen well from below, markings on the risers are not necessary. Handrails have been installed on both sides. As the stairway connects with walls on both sides, there are no open ends requiring anti-slip safety measures. A tactilely contrasting hazard warning surface has been installed at the top of the stairway. There is a difference in elevation of 3.30 m between the “city courtyard” and the garden. This difference has been compensated for by an accessible stairway. For more comfortable use, a landing has been integrated into the stairs comprising 22 steps in total. In analogy to the stairs at the main entrance, the top and bottom steps have been equipped with a tread marking. Handrails have been installed on both sides of the stairway; a tactilely contrasting hazard warning surface has been placed at the end of the stairway.

Additional ramp access has not been considered because of the great difference in elevation. During opening hours, the lift inside the building may also be used.

Guidance detail ACCESSIBILITY PROOF, scale 1:20



Exterior fixtures

» Chapters 11.1, 11.2, 11.4, and 11.4

Accessible seating is provided in the exterior spaces in both the courtyard and the garden. Comfortable benches with backrests and armrests have been chosen for the “city courtyard”. The model developed for the pedestrian zones is picked up again here.

Along the paths in the reading garden, the hedges have tactilely and visually perceivable sitting niches integrated into them. Seating is provided for very diverse user groups. This is why some of the offered possibilities for sitting or lying have backrests and some do not, some are positioned opposite each other, others in a line. The niches also provide space for one or two wheelchairs.

Special-purpose exterior spaces

» Chapters 15.1, 15.2, and 15.3

An accessible reading garden is to be added to the library as stipulated by requirements planning. This garden is positioned directly in front of terrace of the library located on the basement floor. The geometric outline of the garden consists of cut hedges where sitting niches have been integrated in some places. According to the planning concept, these sitting areas have been designed so as to be comfortably usable for wheelchair users as well. The basic geometry takes into account necessary manoeuvring and movement areas.

Interior spaces (excerpt)

Sanitary installation, ground floor

Need and structure

» Chapter 20.1

An accessible sanitary installation has been placed centrally on the ground floor between the lobby and the café area.

Basic geometry and space requirements

» Chapter 20.2

cf. ACCESSIBILITY CONCEPT

The door is designed as a sliding door with a clear width of passage of 90 cm. In accordance with DIN 4109, the R_w value for sound insulation is 27 dB.

Toilets

» Chapter 20.3

The toilet is approachable from both sides for wheelchair users and equipped with foldable support rails, backrest, and an integrated flushing system. The holder for toilet paper is reachable from a sitting position.

Wash area

» Chapter 20.5

The washbasin has a clear space below for wheelchair approach. All other fittings are also accessible. A mirror has been placed directly above the washstand, and it is 100 cm high.

Emergency call and emergency alarm systems

» Chapter 20.8

It is possible to activate the emergency call from the toilets or from the floor. An additional possibility to activate the emergency call is provided by a pull cord located next to the washbasins. The activation of the signal is indicated optically and acoustically. An alarm notification light is located on the outside of the toilet installation next to the door and another on the lobby wall, where it can be seen from the information counter. An optical alarm by strobe light has been ensured for people with auditory impairments.

Location and detection

» Chapter 20.9

In compliance with the design concept, the visual marking of doors is placed on the door leaves. Information for blind users is integrated into the door handle (vertical handlebar) (see detail X).



Photo by Stefan Müller

Annex

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Glossary

access routes/circulation areas	movement areas in interior and exterior spaces
anthropometry	determination and application of measurements of the human body
architectural acoustics	the transmission of sound among adjacent spaces or between interior and exterior spaces
audio induction loop	technical installation enabling users of hearing aids to receive noise-free audio signals by wireless means
auditory	stimuli perceived using the sense of hearing
auditory perception	perception of sound using the sense of hearing
balustrade	protective railing designed to prevent falls
Baukultur	taking into consideration aesthetic requirements at the same time as ecological and economic qualities aligned with specific socio-cultural requirements
bi-sensory principle	conveying information by using at least two senses; information can be conveyed tactilely, visually, and/or acoustically, such as optical and acoustic alarms activated at the same time
Braille	a system of writing for blind people in which characters are represented by patterns of raised dots that are felt with the fingertips
checklist	list to review completeness of qualitative and quantitative requirements
cognitive impairment	deficit in cognitive abilities
common areas	areas outside access routes in interior and exterior spaces where people spend time
ES-Bau	construction-related decision-making document pursuant to the Guidelines for Federal Construction Measures (RBBau Guidelines)
escape routes	traffic routes on which special requirements are to be imposed, to be followed for escape from potentially hazardous locations, and usually also used for rescuing personnel; rescue routes lead outdoors or towards a safe area
EW-Bau	construction-related draft document pursuant to the Guidelines for Federal Construction Measures (RBBau Guidelines)

exterior space	undeveloped part of the building to which staff and/or visitors have access
ground surface indicators	ground element with a high tactile, visual, and, where appropriate acoustic contrast to surrounding surfaces (DIN 32984)
guidance strip	tactilely detectable strip for guidance on access routes made of ribbed slabs running in longitudinal direction
guiding line	orientation line consisting of other guidance elements used by blind and visually impaired people for routing purposes, such as the delineation of walkways facing away from roads (inner guiding line) and facing towards roads (outer guiding line)
handrail	rail to be grasped for support and guidance located at grip height
hazard warning surface	warning surface indicating changes of ground level, hazards, and obstacles, and conveying the message “proceed with caution”
integration agreement	agreement to control in-company integration pursuant to § 83 SGB IX, which in accordance with German law is adopted by the employer and the representative body of employees with severe disabilities and the works or staff council
interior space	area in a building’s interior, accessible to staff and/or visitors depending on its function
light intensity	coefficient of amount of light falling on a certain area and the size of this area
location strip	an area of ground surface indicators covering the width of a walkway or path to indicate lateral destinations (DIN 32984)
long cane	also white cane – mobility tool used by blind people to tactilely detect obstacles in their immediate surroundings
lower strip	section on one side of a walkway with a different surface; lower strips are on the edge facing towards the road
luminance contrast	an object’s difference in brightness from its surroundings as perceived by the human eye
macro-roughness	comprises roughness components with a horizontal expansion greater than 0.50 mm; roughness components of up to 10 mm have a positive influence on the friction between shoe sole and floor surface

micro-roughness	comprises roughness components with a horizontal expansion below 0.50 mm; up to 0.01 mm it has a strong influence on the friction between shoe sole and floor surface
Model Building Regulation	framework regulations as a basis for <i>Länder</i> -specific building regulations, published by the Standing Conference of the 16 Federal State Ministers and Senators responsible for Urban Development, Building and Housing (<i>Konferenz der für Städtebau, Bau- und Wohnungswesen zuständigen Minister und Senatoren der Länder, ARGEBAU</i>)
motor impairments	restricted physical movement, especially in using arms, legs, and hands; use of mobility aids or wheelchairs may be necessary
movement area	area needed to use buildings and structures in accordance with space requirements, e.g., by wheelchairs, walking aids, walking frames
necessary stairway	stairway required as part of rescue routes pursuant to official regulations (such as <i>Länder</i> -specific building regulations) (DIN 18065)
open stairway	stairway without risers in contrast to closed stairway (with risers) pursuant to DIN 18065-1
operating force	effort necessary to use operational elements and doors as well as engage/release and lock/unlock fittings with a key or a pushbutton
operating height	height at which an operational element can be reached accessibly
operational elements	handles, pushbuttons, switches, keyboards, buttons, coin and card slots, to be operated primarily by hand
orientation aid	information supporting everyone, especially people with sensory impairments in using the built environment
other guidance element	component of the built environment that can be perceived clearly by blind and visually impaired people and is suitable for routing and orientation purposes as well as for delineating walkways (DIN 32984)
passing spot	area wide enough for two wheelchair users to pass each other
places of assembly	pursuant to § 2 MVStättV structural installations or part of structural installations designated for the simultaneous presence of a number of people during events
PPP procedure	public private partnership procedure

protection target	defines the minimum level to which requirements for any measure need to be fulfilled; protection targets may be achieved differently than stipulated by the standard in question
RBBau Guidelines	Guidelines for Federal Construction Measures
reflection ratio	ratio of reflected light compared to incident light
reveal	the side between a window frame or a doorframe and the outer surface of a wall
reverberation	persistence of the reflected sound after a sound is produced in a closed room
reverberation time	the time it takes for a sound produced in a closed room to be reduced by 60 dB
ribbed slab	surface with ribbed, oblong raised parts running parallel to ground surface indicators
risers	vertical or nearly vertical part of stairs between individual steps/treads (DIN 18065-1)
room acoustics	acoustic properties within a room
sensory impairment	restricted use of senses, e.g., sense of hearing or seeing
skid prevention/skid resistance	combination of adhesive and tribological characteristics to effect resistance against slipping on floor surfaces
special installations	special-design or special-purpose installations pursuant to § 51 Model Building Regulation
stamina	physical capability
studded slab	surface with a regular sequence of raised studs
tactile	perception of mechanical impressions with the sense of touch
tactile model	three-dimensional, simplified reproduction at a reduced scale of structures and parts of structures to improve orientation on the basis of tactile perception
tread	horizontal or nearly horizontal part of stairs/steps (DIN 18065-1)

upper strip	section on one side of a walkway with a different surface; upper strip is on the edge facing away from the road
upstands	component installed on both sides of a ramp (e.g. raised kerbs) to prevent wheelchair or walking frame users from driving onto it
visual	stimuli perceived with the eye (sense of seeing)
workplace	work rooms and other places within a building or outside, located on the premises of a firm or on a construction site, envisaged as places of work or places accessed by staff during their work (Ordinance on Workplaces, <i>Arbeitsstättenverordnung</i> , ArbStättVO)

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Entrance at the Regensburg Institute for the Blind
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