**Questionnaire References**

**Outline:**

1. Clarifications on some practical doubts regarding the cafeteria and library inspection.
2. Discussion of the simulation’s requirements and focus on disability groups.
3. Discussion of accessible alternative and equal treatment issue.
4. Discussion of information retrieval issue.

**Questionnaire:**

1. **Clarifications on the inspections**

* Are the cafeteria and the library considered accessible in terms of public/private transportation? [e.g., bus, car]
  + Guideline: Accessibility in Building Design, pag. 59 (When considering the needs of users who rely on public transport, a nearby public transport stop or station shall also be aimed for.)
  + Guideline: Accessibility in Building Design, pag. 59 (The buildings should have a barrier-free access to public transport facilities nearby. The instructions on barrier-free access apply. This means the following elements for access to public transport stops and stations: ground level entry, continuous visual and tactile routing, visual, and if applicable, acoustic information systems with enhanced contrasts, dropped kerbs at crossings and, if necessary, check implementation with municipality and public transport operators.)
  + Guideline: Accessibility in Building Design, pag. 59,60 (Implementation Rule on Parking Spaces (AV Stellplätze) Building Regulation Berlin, 2007 -> A distance of 100 meters from the parking area to the building is considered reasonable. […]A direct connection from the parking space to the main entrance of the building should be ensured, using shared routing if possible for all visitors and employees)
  + Guideline: Accessibility in Building Design, pag. 60 -> Protection target as defined by DIN 18040-1, Chapter 4.2.2 – Parking Spaces (Designated parking spaces for people with disabilities need to be marked accordingly and should be located in close proximity to barrier-free access points.)
* Is the bicycles’ positioning in the area around the cafeteria actually affecting the accessibility of the building? Can the walkways be considered free, or improvement would be necessary to provide better accessibility? [e.g., pathways around mensa to reach the cafeteria]
  + Guideline: Accessibility in Building Design, pag. 139 (In exterior spaces they [furniture and fixtures] comprise signs, seating, bicycle stands as well as posts and bollards, planters, and stand-up displays. As a general rule, these components must be usable accessibly. The function of movement and circulation areas may not be compromised by furniture and fixtures)
  + Guideline: Accessibility in Building Design, pag. 74 (DIN 32984:2011-10, Chapter 5.2.1 -> Guidance strips consist of ribbed slabs running in the direction of pedestrian travel; they serve as guidance along a path. The ribbed slabs should be 30 to 60 cm wide. A distance of 60 cm is to be maintained on both sides of the strip to the edge of roads or fixtures such as lampposts, sculptures, and such like. As an alternative to guidance strips, other guidance elements can be used to design guiding lines. Guidance strips should be installed at a distance of 120 cm to fixtures such as benches, as their use requires more space. At bicycle stands, a distance of 120 cm is to be ensured from the maximum parking position of the bicycle)
  + A white rectangular object with black text

    Description automatically generatedGuideline: Accessibility in Building Design, pag. 91 (Protection target as defined by DIN 18040-1, Chapter 4.2.1 – Walkways, Traffic Areas -> Walkways must be wide enough for wheelchair and walking-aid users, also in situations when they pass each other. […] A path width of at least 150 cm is sufficient if a passing spot measuring 180 × 180 cm is available after a stretch of 15 m. Passing spots with a 180 × 180 cm dimension suffice for two wheelchair users to pass each other. If space is not a problem, it is preferable to design paths with a width of 180 cm throughout their entire length. If wheelchair users are not likely to pass other wheelchair users but only other pedestrians, a minimum width of 150 cm is sufficient for the movement area. If no passing is likely, the necessary width can be reduced to 120 cm (e. g. for short paths up to a maximum length of 600 cm). In these cases, a movement area needs to be envisaged for changing directions or manoeuvring at the beginning and end of the path.)
* What about the bikes tied to the handrails? How is that an issue?
* Handrails should be installed seamlessly on both sides of a ramp (along the length of the ramp and on platforms).
* The handrails of stairs/ramps must be present on each side and free of any obstacle.
* Guideline: Accessibility in Building Design, pag. 101 (In a combination with stairs, the beginning and end of a ramp should be placed close to the beginning and end of stairs. […] The longitudinal gradient of ramps must not exceed 6%. The ramp should not be longer than 600 cm. The maximum height that can be overcome by a ramp without a platform is 36 cm.)
* Guideline: Accessibility in Building Design, pag. 102 (Movement areas measuring 150 × 150 cm are to be envisaged for the beginning and end of ramps)
* Guideline: Accessibility in Building Design, pag. 103 (Raised kerbs are to be placed at a height of 10 cm on both sides of a ramp’s length. If the ramp’s edge connects to a wall or stringers, raised kerbs are not necessary)
* Welage, N., Liu, K.P.Y (2011) Wheelchair accessibility of public buildings: a review of the literature, Disability and Rehabilitation: Assistive Technology, 6:1, 1-9, <https://doi.org/10.3109/17483107.2010.522680> (Ramps are an important element of building accessibility and their absence obviously makes it much harder for wheelchair users to enter buildings and perform required activities. A ramp slope should have a 1:12 gradient for independent wheelchair propelling, and a level landing area at both the top and bottom is essential)
* Is a ramp/slope considered accessible if it isn't steep, but it ends right at the door? [e.g., automatic sliding door at cafeteria entrance]
* Guideline: Accessibility in Building Design, pag. 102 (Movement areas measuring 150 × 150 cm are to be envisaged for the beginning and end of ramps)
* Guideline: Accessibility in Building Design, pag. 103 (Raised kerbs are to be placed at a height of 10 cm on both sides of a ramp’s length. If the ramp’s edge connects to a wall or stringers, raised kerbs are not necessary)
* Guideline: Accessibility in Building Design, pag. 103 (At ramp lengths of up to 100 cm, gradients of up to 10% are permissible provided that there is the possibility to call for assistance)
* When is the flooring material considered slippery and when is it instead just even and well levigated? What are the characteristics of an accessible floor material? [e.g., cafeteria paving]
* Guideline: Accessibility in Building Design, pag. 68 (DIN 32984:2011-10 -> The width comprises 3 to 4 ridges. According to DIN 32984, a difference of 2 to 3 mm in height is sufficient for smooth floor surfaces in the interior of buildings to be detected by a long cane.)
* Guideline: Accessibility in Building Design, pag. 80 (The surfaces of paths and circulation areas must be even and solid so that people with motor impairments (such as wheelchair users) can use them safely and without any problems in all weather conditions. The broad range of possible materials for interior and exterior spaces can be integrated into accessibility design concepts. The flooring should have surfaces boasting tactile and visual contrasts to surrounding structural components to improve orientation within a room)
* Guideline: Accessibility in Building Design, pag. 81 (Materials and tactile contrasts in interior spaces -> The broad range of possible materials for interior spaces is to be included in accessible design concepts. When used on floors, walls, handrails, and furnishings, the varying haptic qualities of the materials can be made detectable by long cane, hands, and feet. Even relatively small but well thought-through changes in material can contribute to a self-explanatory zoning of an interior space, e.g. varying floor constructions with the same upper material may be perceived as very different from each other. Areas exhibiting complex patterns can be confusing and should therefore be used only with caution.)
* Guideline: Accessibility in Building Design, pag. 82 (Skid resistance in interior spaces When designing the surface of floors, it is important to adhere to the Assessment Groups corresponding to the respective skid hazard. R 9 as stipulated by ASR A1.5/1.2 is for the most part sufficient in interior spaces. The requirements for sanitary rooms, kitchens, and specific work areas range between Assessment Groups R 10 and R 13. Specular reflections and blinding effects should be avoided. Floor surfaces that have a smooth and slippery appearance may be a hazard because of their psychological effect.)
* Ausschuss für Arbeitsstätten (ASTA-Geschäftsführung), Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (BAuA) (2014). Technische Regeln für Arbeitsstätten - Fußböden (ASR A1.5) [German]. <https://www.baua.de/DE/Angebote/Rechtstexte-und-Technische-Regeln/Regelwerk/ASR/ASR-A1-5.html> (Die Bewertungsgruppe dient als Maßstab für den Grad der Rutschhemmung, wobei Bodenbeläge mit der Bewertungsgruppe R 9 den geringsten und mit Bewertungsgruppe R 13 den höchsten Anforderungen an die Rutschhemmung genügen.) (Ausschuss für Arbeitsstätten, 2014) pag 11

Example of requirements table : pag 14

A screenshot of a menu

Description automatically generated

* What is the impact of high-contrast, non-slippery stripes on stairs’ steps for people with visual impairment and cognitive disabilities? Does their absence make indoor stairs inaccessible? [e.g., cafeteria stairs towards the mensa]
* Guideline: Accessibility in Building Design, pag. 109 (Stairs can be used accessibly by people with restricted mobility and by blind people and people with visual impairments if they exhibit the following properties. *DIN 18065:2011-06, Kapitel 3.5* -> A flight of stairs is an uninterrupted series of at least three steps as a connection between two different planes. A stairway cannot constitute an accessible, vertical connection on its own. It can, however, be safely used in part by people with motor impairments as well as blind people and people with visual impairments.
* A drawing of a person walking up stairs

  Description automatically generatedGuideline: Accessibility in Building Design, pag. 114 (Especially on stairs, the fall hazard is higher for blind people and people with visual impairments and during intense traffic volume. When planning accessible staircases, special care should be dedicated to visual and tactile design for these situations. Stairs and single steps that are located in an open space or that do not immediately result from a structural context, constitute an especially hazardous situation. To minimise the risk of hazards, hazard warning surfaces of a minimum depth of 60 cm are to be installed above the top tread and below the lowest tread along the entire width of the stairs. The design of hazard warning surfaces exhibits tactile contrasts to their surroundings. This can be accomplished by modifying the floor structures, for instance by using varying roughness or material and by means of tactilely perceivable changes of joint direction and/or width, and also by using ground surface indicators. A visually contrasting design is not to be used so as not to disturb the visual accentuation of the leading edge of the stairs. Should the location of stairs be evident through the structural context (staircases), or if the bottom point of a stairway is clearly detectable on the basis of other guidance elements, hazard warning surfaces are not necessary.)
* A diagram of a rectangular object

  Description automatically generatedGuideline: Accessibility in Building Design, pag. 115 (Step markings -> A marking of each step is required when the stairway has up to three steps and in case of free-standing stairs. In the case of staircases and not free-standing stairs, a marking of the first and last steps suffices. Markings on the leading edge of stairs constitute a visual contrast to both treads and risers as well as to landings. They should begin at the leading edge and be 4 to 5 cm on treads and 1 to 2 cm on risers. They thus form a visual contrast to both treads and risers and landings, and support the clear perception of edges when looked at from above and from below. When walking upwards a standing person should always be able to see the marking on both the tread and the riser. If both marking begin at the leading edge, it may become hard to see where the edge of each step is.)

1. **Simulation and disability types**

* Which common building in the KIT campus is, in your opinion, most suitable for the simulation?
* Which accessibility issues are most relevant for the simulation?
* Is there a time of the day and/or season during the year when said building is most inaccessible?
  + Guideline: Accessibility in Building Design, pag. 60 (The barrier-free parking spaces should be marked in such a way as to be visible even in difficult weather conditions (snow), also outside public road environments.)
  + Guideline: Accessibility in Building Design, pag. 75 (The contrasts need to be permanent and stable. Weathering and pollution are to be avoided and, where necessary, remedied)
  + Guideline: Accessibility in Building Design, pag. 76 (It is important to note that some surface materials in exterior spaces change their colour and brightness with moisture. Luminance contrasts should be ensured in all weather conditions.)
  + Guideline: Accessibility in Building Design, pag. 80 (The surfaces of paths and circulation areas must be even and solid so that people with motor impairments (such as wheelchair users) can use them safely and without any problems in all weather conditions.)
  + Guideline: Accessibility in Building Design, pag. 81 (There are no special instructions for measuring skid resistance in exterior spaces. As changing weather conditions can result in heightened hazards due to moisture)
  + Guideline: Accessibility in Building Design, pag. 87 (Consistent basic illumination is required for any time of day or night and all weather conditions to ensure safe detectability)
* What is the impact of crowds for different disabilities?
  + Mastrolembo Ventura, S., Hilfert, T., Archetti, M., Rizzi, M., Spezia, A., Tagliabue, L.C., Oliveri, E., Ciribini, A.L.C. (2018). Evaluation of Building Use Scenarios by Crowd Simulations and Immersive Virtual Environments: A Case Study. <https://core.ac.uk/download/pdf/162433282.pdf> (The combined use of crowd simulation and immersive VR, in fact, enables the users to perceive crowding in the occupancy evaluation and adds the user experience as a design input, representing an innovative approach that goes beyond traditional resources such as personal experience and regulations)
* Is accessibility for cognitive disabilities considered in a university environment?
* Nussbaum, M. (2009), The capabilities of people with cognitive disabilities. Metaphilosophy, 40: 331-351. <https://doi.org/10.1111/j.1467-9973.2009.01606.x> (The guiding idea of the Disabilities Education Act (IDEA) is that children with disabilities are individuals, equal in dignity to ‘‘normal’’ children, and that, in consequence, education should be based on a careful individualized consideration of a child’s educational needs. I’ve said that equal protection and equal respect do not require equality of educational outcomes. In that sense, the approach in education has a good deal in common with the approach in the area of mobility, and thus it might seem to be an adequacy approach, not an equality approach. The whole point of the approach, however, is to ensure that no special disadvantages accrue to children with disabilities in virtue of their disability. They are equally placed in the education process, and equally supported—which, in their case, requires a lot of affirmative measures and extra expense. After that, like all children, they will achieve at different rates and attain different levels.)
* What kind of accessibility issues and solutions can be beneficial for a given group of disabled people while being detrimental for others? [e.g., Adjusting lighting levels: Increasing lighting levels in public spaces can be beneficial for individuals with visual impairments, as it enhances visibility and reduces the risk of accidents. However, excessive lighting might cause discomfort or sensory overload for individuals with photosensitivity or certain neurological conditions.]
  + Guideline: Accessibility in Building Design, pag. 52 (The ability to see of visually impaired people is significantly restricted, but visual orientation and information are still possible. In contrast, blind people have no or almost no vision. They depend primarily on their tactile and auditory senses for orientation and information. If necessary, they use a cane or a guide dog. The structural needs of these two user groups mainly concern orientation and guidance systems, and avoiding dangerous situations and obstacles. In the case of visual impairments, the use of contrasts and light is essential, while haptic, tactile, and auditory measures can be employed for blind people.)
  + Guideline: Accessibility in Building Design, pag. 88 (The illumination of rooms depends on their use. Flexible and cost-efficient lighting systems are to be preferred. Illumination should be free of blinding effects and shadows. Illumination requirements vary greatly. Much higher nominal light intensity (greater than 1,000 lux) may be required for people with visual impairments, but also for those with auditory impairments. This is why it makes sense to enable more than one setting so that the light intensity can be adapted to the use at a given time.)
  + Sadia, T. (2020). Exploring the Design Preferences of Neurodivergent Populations for Quiet Spaces. <https://doi.org/10.31224/osf.io/fkaqj> Pag 6 (Lighting is one of the major design concerns for ASD. People with ASD who are sensitive to lighting conditions may find it difficult to cope with higher intensity bright lights, at times exhibiting a preference to being in darker spaces)
  + Sadia, T. (2020). Exploring the Design Preferences of Neurodivergent Populations for Quiet Spaces. <https://doi.org/10.31224/osf.io/fkaqj> Pag 7 (Certain color groups such as bright colors and vibrant colors (e.g. red), may cause stress or confusion in people with visual hypersensitivity. […] In contrast, people with visual hyposensitivity may be highly drawn to bright and vibrant colors, finding them highly fascinating . In the ‘Sensory Design Matrix’ Mostafa suggests that bright colors may be more stimulating while neutral colors may be more serene (2008), which implies that neutral colors may be more suitable for quiet spaces.)
  + Sadia, T. (2020). Exploring the Design Preferences of Neurodivergent Populations for Quiet Spaces. <https://doi.org/10.31224/osf.io/fkaqj> Pag 24 (The top preference for windows is ‘maybe, depending on potential views’ (39.3%), followed by windows facing outside (31.8%) and high windows only for sunlight and above eye level for avoidance of distracting views (17.8%))
  + Sadia, T. (2020). Exploring the Design Preferences of Neurodivergent Populations for Quiet Spaces. <https://doi.org/10.31224/osf.io/fkaqj> Pag 27 (Coloured walls were preferred (33.3%) above textured walls (25%) and white walls (21.7%))
  + Sadia, T. (2020). Exploring the Design Preferences of Neurodivergent Populations for Quiet Spaces. <https://doi.org/10.31224/osf.io/fkaqj> Pag 38 (Interviewees had contrasting perspectives regarding whether quiet spaces should be designed for the general public or exclusively for ND populations. One argument is that the only reason quiet spaces are necessary is due to the shortcoming of design which typically exclude the needs of ND populations, and as such quiet spaces should be offered as an accommodation for those who really need it. Others suggested refraining from labelling the users of the space and keeping it open for all.)
  + Sadia, T. (2020). Exploring the Design Preferences of Neurodivergent Populations for Quiet Spaces. <https://doi.org/10.31224/osf.io/fkaqj> Pag 40 (Sound and lighting are found to be the most important design features across all ND and SO groups, followed by space layout, color, furniture and decoration.)
  + Sadia, T. (2020). Exploring the Design Preferences of Neurodivergent Populations for Quiet Spaces. <https://doi.org/10.31224/osf.io/fkaqj> Pag 48 (While in some cases there is a clear design preference across all neurodivergent and sensory overload frequency groups, in other cases there are different and sometimes opposing preferences between people with lower frequency of sensory overload and people with higher frequency of sensory overload.)
* What are considered accessibility barriers for neurodivergent people?
  + Dwyer, P., Mineo, E., Mifsud, K., Lindholm, C., Gurba, A., Waisman, T.C. (2023). Building Neurodiversity-Inclusive Postsecondary Campuses: Recommendations for Leaders in Higher Education. Autism in Adulthood. 5:1, 1-14. <https://doi.org/10.1089/aut.2021.0042>. (Page 2, community brief -> Many neurodivergent people are, or want to be, students at college and university. However, neurodivergent people face many challenges and barriers at colleges and universities. […] (Among other suggestions, ) the authors recommend providing better mental health supports and providing accommodations for sensory distress and distraction)
  + Dwyer, P., Mineo, E., Mifsud, K., Lindholm, C., Gurba, A., Waisman, T.C. (2023). Building Neurodiversity-Inclusive Postsecondary Campuses: Recommendations for Leaders in Higher Education. Autism in Adulthood. 5:1, 1-14. <https://doi.org/10.1089/aut.2021.0042>. (page 6-7, Recommendation 7: recognize and accommodate sensory discomfort, distraction, distress, and overload -> Sensory issues can become serious barriers in the housing domain.69,70 We believe neurodivergent students vulnerable to sensory distress and overload need to be able to retreat to a space free from sensory bombardment, such as a single room with no roommate and/or a room in a ‘‘quiet’’ dormitory building with stringent noise limits. […] Other areas on campus, such as libraries, hallways, and lecture halls, could potentially be inaccessible due to sensory experiences, such as discomfort or excessive distraction. Considering sensory accessibility in new construction and renovations, including by providing sensory refuge spaces around busy overstimulating areas, could make campuses less stressful for many neurodivergent students. Moreover, the presence of distracting stimuli can disproportionately impact the test performance of ADHD students. This emphasizes the importance of distraction-free testing canters; however, such centers must be of high quality. For example, air conditioning and lighting should be carefully designed to minimize distraction.)
  + Sadia, T. (2020). Exploring the Design Preferences of Neurodivergent Populations for Quiet Spaces. <https://doi.org/10.31224/osf.io/fkaqj> Pag 8 (A quiet space provides a calm environment with lower stimulation where people can find relief from stress and sensory overload. The space does not necessarily have to be silent but rather create a mentally 'quiet' environment promoting relaxation. A quiet space may also be called a restorative, retreat, contemplation, meditation, silence, refuge, escape or calming space. Sometimes just knowing that there is an available quiet space to retreat to may be sufficient for the attainment of mental calm (Mostafa, 2008). In order to facilitate both types of sensory needs, it has been suggested to design the quiet space as a baseline neutral sensory environment for hypersensitive needs while incorporating the option to add temporary stimulating elements for hyposensitive needs (Mostafa, 2008). Low stimulation items may include soft furniture such as cushions, bean bags and blankets (Kravetz, 2017). High stimulation items may include fiber optic lights (Mostafa, 2014), weighted belts (Grandin, 2006; Kravetz, 2017), and ‘fidget toys’ (Friedlander, 2009). Sarrett (2018) suggests for the quiet space to have low lighting, low noise, and be devoid of strong smells. Patterns and color variations should be kept to a minimum (Khare and Mullick, 2009; McAllister, 2010). Recorded sounds may play an important role in facilitating relaxation and as a way to remove stress from the environment (Robertson and David, 2015). Nature sounds and music have been incorporated into the design of Snoezelen rooms for those purposes (Singh et al., 2004). For these reasons it may be beneficial to create opportunities to access optional sound in the quiet space. […])
  + Sadia, T. (2020). Exploring the Design Preferences of Neurodivergent Populations for Quiet Spaces. <https://doi.org/10.31224/osf.io/fkaqj> Pag 19 (‘No sound’ is the most preferred soundscape for a quiet space (34.7%), followed by nature sound (28.8%) and music (18.4%) (fig.21). A perfect positive correlation (ρ=1) is found between the SO frequency of respondents and the percentage of them who chose ‘no sound’, and a perfect negative correlation (ρ=-1) with the percentage of them who chose ‘music’ (fig.22). Differences in the preferred sound choices between ASD and LD are found to be significant at 95%, where ASD chose ‘no sound’ 7.8% more than LD, and LD chose ‘nature sound’ 8.4% more than ASD (fig.23). 13 people who chose ‘other’ expressed the importance of including sound controls)
* What measures would improve the accessibility of said building for people with hearing impairments?
* Guideline: Accessibility in Building Design, pag. 154 (People with hearing impairments should also be capable of engaging in voice communication. This objective entails increased structural requirements and room acoustics requirements. Optimised room acoustics are obligatory. Rooms larger than roughly 250 m³ usually require electro-acoustic enhancement systems for voice speech. Separate transmission systems, such as audio induction loops, must be installed for people with hearing impairments)
* Guideline: Accessibility in Building Design, pag. 83 (Acoustic information and voice communication must be provided in such a way as to be perceived by people with auditory impairments. For this to be the case, it is necessary to fulfil basic acoustics prerequisites. Optimum room acoustics are the result of the interaction among room geometry, room size, room characteristics, and the total background noise level. Taking into account the size of rooms and the distance from where voice communication or other acoustic signals originate, rooms are divided into:
* rooms with auditory communication over medium and greater distances (conference halls, court rooms, council chambers, banqueting halls, classrooms, seminar and meeting rooms, university lecture halls, group activity rooms, sports and swimming halls). Small rooms with a volume of about 250 m³ usually do not require additional sound systems, whereas these are necessary for medium-sized and small rooms with volumes of about 250 to 5,000 m³.
* rooms with auditory communication over small distances, such as restaurants, cellular offices, offices for use by more than one person, open-plan offices, reading rooms and circulation counters in libraries, lobbies, exhibition halls, and staircases.)
* Guideline: Accessibility in Building Design, pag. 132 (Special requirements for people with impairments can be taken into account by applying the following, specific measures in addition to a range of structural, in-house, and organisational precautions: • continuous compliance with the bi-sensory principle)
* Guideline: Accessibility in Building Design, pag. 137 (Service counters, cash registers, controls, assistance centres, waiting halls -> Important information must be conveyed using two senses (bi-sensory principle))
* Guideline: Accessibility in Building Design, pag. 144 (As a general rule, the bi-sensory principle is to be applied)

1. **Alternative or different treatment**

* How is it considered, when an accessible option is available, but it does not correspond to the most used option? [e.g., cafeteria indoor connection to the mensa area]
  + Guideline: Accessibility in Building Design, pag. 64 (As a general principle for federal buildings, shared routing for all users is to be aimed for.)
  + Guideline: Accessibility in Building Design, pag. 101 (The aim should be to offer identical routing for all users to as great an extent as possible.)
  + Basic Law for the Federal Republic of Germany in the revised version published in the Federal Law Gazette Part III, classification number 100-1, as last amended by the Act of 28 June 2022 (Federal Law Gazette I p. 968). -> Basic Law for the Federal Republic of Germany, Article 3, paragraph 3, sentence 2 (No person shall be favoured or disfavoured because of sex, parentage, race, language, homeland and origin, faith or religious or political opinions. No person shall be disfavoured because of disability)
* How is the restricted access to disabled bathrooms considered? [e.g., need of a key to access]
* How is it considered if variations of the same service are provided to grant more flexibility, but not all of them are accessible? [e.g., different seating configurations and tables design at the cafeteria, but rectangular tables are less accessible to wheelchair users than the round ones]
  + Guideline: Accessibility in Building Design, pag. 160 (Flexible seating is to be preferred. Clear spaces below tables and counters necessary for wheelchair approach need to measure 90×55 cm. In fixed seating surroundings, spaces need to be reserved for wheelchair users. Rooms for catering should not be equipped solely with stand-up tables and bar stools. A side-by-side use by people with and without impairments can be supported by furniture design)
* To which extent should accessibility be facilitated, when conflicting with the common use of a space? [e.g., the tables with 6 chairs in the cafeteria can accommodate a wheelchair only if a chair is removed, but that is not the default configuration]
  + Guideline: Accessibility in Building Design, pag. 160 (Flexible seating is to be preferred. Clear spaces below tables and counters necessary for wheelchair approach need to measure 90×55 cm. In fixed seating surroundings, spaces need to be reserved for wheelchair users. Rooms for catering should not be equipped solely with stand-up tables and bar stools. A side-by-side use by people with and without impairments can be supported by furniture design)

1. **Information retrieval and orientation**

* What kind of indication system would help people with visual impairment navigate an unknown building without requiring any assistance? [e.g., tactile indications, indication of room purpose at the entrance, no unified system to find locations from current position]
* Guideline: Accessibility in Building Design, pag. 67 (Advance information – website \_ Important information on the building and access routes, including public transport, should be made available on an accessible website for people with sensory impairments so that they can inform themselves before they visit a public building. Advance information – tactile plans and models \_ Advance information is the starting point of any orientation system. This can be provided, for instance, in the form of a tactile layout plan. Written information for tactile perception should always be provided both in an embossed pyramid writing style and in Braille. A sans-serif style is to be used for embossed texts. The information is to be installed according to the provisions of the guidelines for tactile writing systems by the German association for visually impaired and blind people (Deutscher Blinden- und Sehbehindertenverband, DBSV). […] Developing orientation and guidance systems is a complex process which needs to be adapted to the specific circumstances. They consist not only of special guidance elements forming a closed system: in the interior space of buildings walls, room dimensions, acoustic conditions, lighting, boundaries such as skirting boards and change of surface material, or readily noticeable pieces of furniture can also serve as guidance elements. In the exterior space, guidance systems can consist of exterior walls, low copings and brick ledges, fences, or drainage elements. Most importantly, the elements need to be easy to comprehend and clearly identifiable.)
* Guideline: Accessibility in Building Design, pag. 68 (Interior guidance elements -> In interior spaces, the guidance character of the elements can be ensured via tactile or visual information and contrasts. High-contrast design in interior spaces -> The boundaries of rooms are easier to be perceived by visually impaired people when contrasts are used in designing interior spaces. High-contrast skirting boards and doorframes may also be useful. Tactile information on balustrades and handrails -> Tactile information (in Braille, embossed letters, or easy-to-understand symbols) can be incorporated into handrails for the purpose of orientation. Interior zoning -> A range of floor materials with different tactile and visual surfaces can be used for interior zoning as they can for exterior zoning. They can help to delineate obstacle-free movement areas from areas for furniture and opening doors. The wall design can be included as an additional aid.)
* Guideline: Accessibility in Building Design, pag. 68 -> DIN 32984:2011-10, Chapter 5.9.4 (Exterior guidance elements -> In exterior spaces, guidance elements can be employed as guiding lines, offering orientation for people with sensory impairments and ensuring consistent tactile detection of paths. Continuous ledges along walls, brick benches, lawn edges, drainage channels, as well as changes in surface materials that are clearly discernible for tactile, visual, and, where appropriate, auditory perception can fulfil that function. […] The consistency of guiding lines must not be harmed by fixtures or temporary utilisation, such as temporary furnishing or signage.)
* Guideline: Accessibility in Building Design, pag. 75 (Visual contrasts play a crucial role for detecting elements in interior and exterior spaces. The detectability of stairs, fixtures, parking spaces, and orientation systems for people with sensory impairments is based mainly on visual and tactile contrasts. Elements envisaged for providing guidance should feature a visual contrast to their surrounding environment. The element fulfilling a guidance function should be of a light colour material because light colours can be recognised better by people with poor eyesight. Detectability usually increases with the intensity of the contrast. However, maximising contrasts does not automatically generate better recognition as it becomes harder to distinguish between important and unimportant information. The contrasts should be appropriate for the individual situation and the specific application. Specular reflection is to be avoided. Warnings should always be marked more prominently than guidance elements)
* Guideline: Accessibility in Building Design, pag. 116 (Handrails should include tactile information (e.g. in Braille) to support orientation such as information on the floor of a building and what routing to follow. This information should be applied at the beginning and end of a flight of stairs to the part of the handrail that does not face the stairs. It is important to ensure that the information can always be found in the same spot on the handrail, preferably on the slanted part of the handrail on the right side, directly above the first and last treads.)
* Guideline: Accessibility in Building Design, pag. 57 (People with sensory impairments will be able to find the entrance cations systems. and get their orientation if tactile and visual guidance aids are placed in the circulation areas for them to use. These should be embedded into existing barrier-free systems and be part of an overall concept. Furthermore, the distances to be covered should be kept small. In addition to floors with a tactile structure, ground surface indicators can be used (see » chapter 2 on orientation and guidance systems). Acoustic or electronic information may be employed as guidance elements in individual cases.)
* Guideline: Accessibility in Building Design, pag. 64 (Information on building use, such as warnings or orientation or guidance information, needs to be appropriate for use by people with sensory impairments. […] Orientation and guidance systems may be designed differently depending on whether people with visual impairments frequent a building on a regular basis or rarely or just on a one-off basis and how familiar they are with the building’s structure. If visually impaired members of staff are familiar with the premises, they may require only little support for their orientation. In contrast, for visitor traffic a consistent orientation system should be installed. […] A bi-sensory approach is the basis for conveying information to people with sensory impairments. […] Designing orientation and guidance systems with high-contrast tactile or visual elements helps people with sensory impairments to notice and use them. Important information and warnings need to be especially prominent and easy to find.)
* Is it difficult to find the alternative accessible pathway in case of inaccessible doorways/thresholds for disabled people, or does it get easier with practice? [e.g., disabled bathroom at cafeteria or accessible entrance at library]
* How would a person with visual impairment face the problem of choosing goods in the cafeteria/library without someone else’s support if there are no tactile labels? What would be necessary to eliminate the problem?
* Would it be an accessibility improvement if tactile paths where available by default in every part of the building, or would it be unnecessary?
* Guideline: Accessibility in Building Design, pag. 65 (Additional sources of information, such as tactile systems, are also to be included. The transition from the exterior to the interior should be a particular focus. In general, an interruption of orientation systems (e.g. in the vestibule area) is to be avoided. […] Exterior guidance systems can consist of so-called other guidance elements and/or ground surface indicators. The guidance element of choice needs to be integrated into an overarching orientation and guidance system, should one be in place already (e.g. on a university campus). When developing a guidance system, it is important to use guidance elements in a recurring, comprehensible, and unambiguous way, thus facilitating orientation.)
* Guideline: Accessibility in Building Design, pag. 73 (Exterior ground surface indicators Ground surface indicators can be used as guidance systems if no consistent orientation and guidance system can be implemented using the guidance elements for exterior spaces described in this chapter. They can also be used in cases of hazardous or poorly visible locations. Ground surface indicators consist of a standardised sequence of structural ground elements with a high tactile, visual, and where appropriate, acoustic contrast to the surrounding flooring.)
* How can blind people recognize a room’s purpose if no tactile description is available? Is the lack of that kind of information considered a barrier?