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, tram, underground, car]

  Buildings like the KIT cafeteria and library should be reachable by means of both public and private transportation. When considering the needs of users who rely on public transport, a stop or station should be present nearby and connected to the facility by means of a barrier-free access route.

  The following niceties should also be guaranteed: a continuous visual and tactile routing system to connect the station or stop to the facility, dropped kerbs at road crossings, a level entrance to the building, without stairs or thresholds, and a visual, and if applicable, acoustic information system with enhanced contrasts *(Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) p. 59).*

  To allow reaching the facilities by means of private transportation, designated parking spaces for people with disabilities need to be present in close proximity to barrier-free access points and marked in such a way as to be visible even in difficult weather conditions. "A distance of 100 meters from the parking area to the building is considered reasonable" *(BMUB p. 59)* and "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" *(BMUB p. 60)*

  The KIT cafeteria and library buildings are close to each other and in the proximity of a bus stop and an underground and tram station, but the closest parking lot is 650m from the facilities. Other more reachable parking spaces might be present, but they are not easy to spot, and they are not indicated on Google Maps, even in accessible mode.

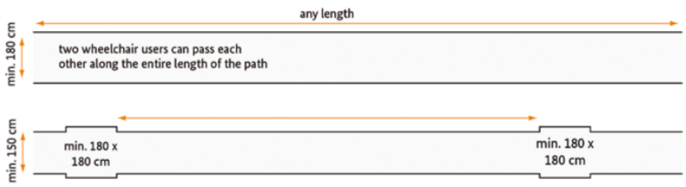
  The connection with the bus stop and the underground and tram station is free from stairs or thresholds, dropped kerbs at road crossings are present, but the most intuitive access points require climbing stairs. A level entrance for the cafeteria can be found and is shared with the pathways used by most students, but the absence of a tactile routing and acoustic information systems make it difficult, for people with visual impairments, to spot it. For the library I couldn't find a level entrance at all.

- 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]

To discuss whether the bicycles positioning around the cafeteria and library buildings affect the accessibility of the facility, both walkways width and bicycles designated areas delimitation must be considered.

According to the guidelines on “Interior and exterior furniture and fixtures” and “Orientation and guidance systems” presented by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB), the function of movement and circulation areas may not be compromised by furniture and fixtures which, in exterior spaces, comprise: signs, seatings, bicycle stands as well as posts and bollards, planters, and stand-up displays *(BMUB p. 139).* Guidance strips, that consist of ribbed slabs running in the direction of pedestrian travel, serve as guidance along a path. The ribbed slabs should be 30 to 60 cm wide and a distance of 60 cm is to be maintained on both sides of the strip to the edge of roads or fixtures. For bicycle stands, guidance strips should be installed at a distance of 120 cm from the maximum parking position of the bicycles *(BMUB p. 74).*

Moreover, considering suggestions of the ministry concerning “Walkways and exterior circulation areas”, walkways must be wide enough to be used by 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 at most 15 m. 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 *(BMUB p. 74).*



Analysing the area surrounding the KIT cafeteria and library, the areas dedicated to bicycles’ parking, delimited by guidance strips, are too small for the number of bikes present during rush hours, meaning that the distance of 120 cm from the maximum parking position is not respected. Despite the designated areas being too small, the walkways width in the exterior circulation areas always have a width larger or equal to 150 cm, which is acceptable because wheelchair users are not likely to pass each other.

- What about the bikes tied to the handrails? How is that an issue?

A handrail is a rail with the purpose of being grasped for support and guidance *(BMUB p. 203)* and its presence is to be expected on both sides of a ramp *(BMUB p. 104)* at a height of 75 cm and 90 cm, parallel to the surface *(Rawski p. 48).*

In addition, in exterior spaces, furniture and fixtures must be usable accessibly and should not compromise the function of movement and the circulation areas *(BMUB p. 139).*

In conclusion, handrails should not be used improperly and should remain free to ensure the accessibility of ramps or slopes.

- 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]

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 *(Welage and Liu p. 6)*, in fact “movement areas measuring 150 × 150 cm are to be envisaged for the beginning and end of ramps" *(BMUB p. 102)*.

According to what stated above, the slope that leads to the cafeteria through the automatic sliding door is not accessible because a level landing area is not present between the slope and the entrance door.

- 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]

  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" *(BMUB p. 80)*.

  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 *(BMUB p. 81)*.

  If a hight difference on a smooth floor needs to be detected by a long cane, a difference of 2 to 3 mm in height is sufficient *(BMUB p. 68)*.

  When designing skid resistant floor's surfaces in interior spaces, it is important to adhere to the Assessment Groups corresponding to the respective skid hazard.

  The rating group serves as a benchmark for the degree of slip resistance, whereby floor coverings with rating group R 9 meet the lowest and with rating group R 13 the highest requirements for slip resistance *(Ausschuss für Arbeitsstätten p. 11).*

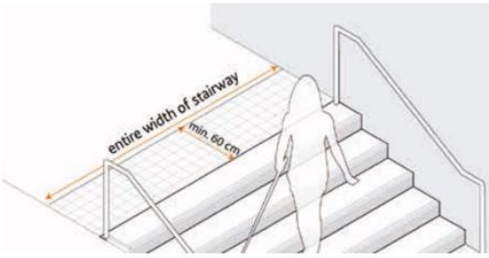
  R 9 is for the most part sufficient in interior spaces, while the requirements for sanitary rooms, kitchens, and specific work areas range between Assessment Groups R 10 and R 13. Additionally, specular reflections and blinding effects should be avoided and floor surfaces that have a smooth and slippery appearance may be a hazard because of their psychological effect. *(BMUB p. 82)*.

  Regardless of the guidelines reported above, I couldn't classify the cafeteria flooring material with absolute certainty.

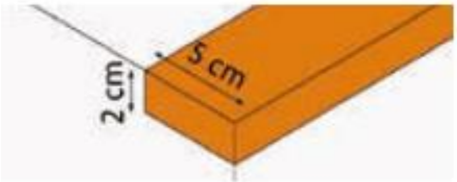
- What is the impact of high-contrast, non-slippery stripes on stairs' steps for people with visual impairment and cognitive disabilities? Does their absence make indoor stairs inaccessible? [e.g., cafeteria stairs towards the mensa]

  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. *(BMUB p. 109)*.

  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. To minimise the risk of hazards, two warning signals should be used: hazard warning surfaces and step markings.



Hazard warning surfaces exhibit tactile contrasts to their surroundings (for instance by using varying roughness or material), should have minimum depth of 60 cm, and 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. A visually contrasting design is not to be used so as not to disturb the visual accentuation of the leading edge of the stairs *(BMUB p. 114)*.



Step markings are 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. When walking upwards a standing person should always be able to see the marking on both the tread and the riser *(BMUB p. 115).*

According to the guidelines related to stairs and steps, the staircase connecting the cafeteria with the mensa building is not accessible because of the lack of an accessible ramp nearby (the external connection between the two areas needs to be used instead), and of the absence of both hazard warning surfaces and step markings in correspondence of the first and last steps.

2. 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?

Bad weather conditions can negatively affect buildings accessibility and their effect should be considered during the design phase of external areas. Snow can influence signals visibility, while moisture level can modify some surface materials' contrast, colour rendering and brightness *(BMUB p. 75, 76).* 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, but skid resistance in exterior spaces is difficult to evaluate due to changing weather conditions that can result in heightened hazards *(BMUB p. 80, 81).* Accurate water draining is also to be provided and crucial is the consistency of basic illumination for any time of day or night and for all weather conditions to ensure safe detectability *(BMUB p. 87).*

The areas surrounding the KIT cafeteria and library seem to respect the guidelines concerning bad weather precautions, but I'd still like to receive some input from an expert that is familiar with the area because I believe some hazards were not mentioned in the guidelines and documents I found, in particular water draining and snow shovelling where not discussed.

- What is the impact of crowds for different disabilities?

From my research on crowds' effects on accessibility, scarce results came up. In particular, the analysis of flows seems to be carried out on each building singularly and, possibly, using *simulations. Virtual Environments simulations can be used to include as a design input the feedback of different users' groups in an innovative approach that goes beyond traditional resources such as personal experience and regulations as demonstrated by the case study at Policlinico Sant'Orsola-Malpighi of Bologna (Mastrolembo Venturaet al. p. 7).*

- Is accessibility for cognitive disabilities considered in a university environment?

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 *(Nussbaum p. 11).* Even if equal protection and equal respect do not require equality of educational outcomes. Children with disabilities should not incur in special disadvantages in virtue of their disability, and should be 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 *(Nussbaum p. 12, 13)*

At least where primary and secondary education are concerned, adequacy does appear to require something close to equality, or at least a very high minimum (perhaps allowing for divergences in aspects of education that are not firmly linked to basic opportunity and political participation). Whether higher education we may accept unequal shares as compatible with the threshold of adequacy, remains a question that societies will have to hammer out *(Nussbaum p. 7).*

Even thought the document "The capabilities of people with cognitive disabilities" (2009) of philosophical orientation suggests that no limitation should prevent an individual with cognitive disabilities from accessing education, university education was not explicitly mentioned. Moreover, I couldn't find a description of the measures that apply to Germany on the topic of inclusion of students with cognitive disabilities in university environment.

- 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.]

It is possible that the measures required to grant a building's accessibility to one group of users are detrimental for another. Examples of this situations can be found comparing literature and guidelines that are specific for given disability groups.

One example is the illumination of rooms; flexible and cost-efficient lighting systems are to be preferred and would be a reasonable compromise *(BMUB p. 88)*, but multiple light intensity settings are not always possible.

Illumination requirements can vary greatly, and much higher nominal light intensity (greater than 1,000 lux) may be required for people with visual impairments, since their ability to see is significantly restricted, but visual orientation and information are still possible *(BMUB p. 52)* and for those with auditory impairments *(BMUB p. 88)*, because visual information is fundamental for orientation and surroundings' understanding. In the opposite direction, however, lies the preference for people with ASD (Autism Spectrum Disorder), who are sensitive to lighting conditions and may find it difficult to cope with higher intensity bright lights, at times exhibiting a preference to being in darker spaces *(Sadia p. 6).*

A second example is used to show how there can be different, and sometimes even opposing, preferences between people with lower frequency of sensory overload and people with higher frequency of sensory overload among people with ASD. Contrasting measures in this case concern the use of specific colour groups, in fact, bright and vibrant colours (e.g., red), may cause stress or confusion in people with visual hypersensitivity, while people with visual hyposensitivity may be drawn to them, finding them highly fascinating *(Sadia p. 7).* In particular, coloured walls were preferred in 33.3% of cases, above textured walls (25%) and white walls (21.7%) *(Sadia p. 27).*

Since the previous results were obtained by comparing different papers and guidelines, an expert's opinion on the matter could highlight other conflicting situations that would be interesting to explore.

- What are considered accessibility barriers for neurodivergent people?

Many neurodivergent people are, or want to be, students at college and university. However, they face many challenges and barriers in the process. Among other suggestions, the neurodivergent students and researchers, authors of the paper "Building Neurodiversity-Inclusive Postsecondary Campuses: Recommendations for Leaders in Higher Education", recommended providing better mental health supports and supplying accommodations for sensory distress and distraction *(Dwyer p. 2)*.

To recognize and accommodate sensory discomfort, distraction, distress, and overload, the possibility of retreating to a space free from sensory bombardment should be guaranteed. In this direction, single rooms in a ''quiet'' dormitory building with stringent noise limits should be available as accommodation during the studying period, but quiet areas on campus would have a positive influence on making campuses less stressful for many neurodivergent students.
Places like libraries, hallways, and lecture halls, may be considered inaccessible due to sensory experiences, such as discomfort or excessive distraction suggesting that the inclusion of sensory refuge spaces would be a positive addition around busy overstimulating areas. *(Dwyer p. 6, 7)*.

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. To facilitate both hypersensitive and hyposensitive sensory needs, it has been suggested to design the quiet space as a baseline neutral sensory environment, while incorporating the option of adding temporary stimulations. Low stimulation items may include soft furniture such as cushions, bean bags and blankets while high stimulation items may include fiber optic lights, weighted belts, and 'fidget toys'. Low lighting, low noise, and absence of strong smells are also suggested for quiet spaces, while patterns and colour variations are discouraged. Recorded sounds may play an important role in facilitating relaxation and to remove stress from the environment *(Sadia p. 8)*. With this in mind, nature sounds or music may be incorporated but should remain optional, in fact, 'No sound' is the most preferred soundscape for a quiet space, followed by nature sounds and music. To be noted that differences in the preferred sound choices between ASD and LD (Learning Disabilities) 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 *(Sadia p. 19)*.

I'm unsure if the break space in the cafeteria can be considered a quiet space to retreat in case of sensory overload and I was interested in other solutions that KIT might provide and I might have overlooked, because the "Guideline on Accessibility in Building Design", published by the German

Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) in 2015, didn't include measures or suggestions to care for neurodivergent people's needs.

- What measures would improve the accessibility of said building for people with hearing impairments?

  People with hearing impairments should also be capable of engaging in voice communication. This objective entails increased structural requirements and room acoustics requirements. *(BMUB p. 154).* Optimised room acoustics are obligatory and are the result of the interaction among room geometry, room size, room characteristics, and the total background noise level.

  Rooms with auditory communication over medium and greater distances, but with a volume below 250 m³, and 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) do not require electro-acoustic enhancement systems for voice speech. *(BMUB p. 83)*

  Ensuring a room acoustics quality appropriate for the specific type of utilisation is fundamental and mandatory, but continuous compliance with the bi-sensory principle should also be guaranteed, to compensate for noisy situations and to provide an alternative for information retrieval *(BMUB p. 132)*.

  Since both the KIT cafeteria and library fall in the category of rooms with auditory communication over small distances, no electro-acoustic enhancement systems for voice speech are to be expected.

  Moreover, even though the cafeteria is loud during rush hours with elevated background noise at lunchtime, the bi-sensory principle is always respected and the needed information on goods prices and charged amount are displayed on paper and screen. Along with a simple paying procedure that only allows the use of the KIT card as payment method, no speech interaction with the cashiers is necessary and the autonomy of people with hearing impairments is guaranteed also during the more crowded times of the day.

3. 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]

  Since "*No person shall be disfavoured because of disability*" (Federal Law Gazette I p. 968) and "*As a general principle for federal buildings, shared routing for all users is to be aimed for*" *(BMUB p. 64)*., identical routing should be offered to all user to as great an extent as possible *(BMUB p. 101)*.

  Even if the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) suggests that a shared path for all users is to be preferred, that is not always the case for the KIT library and cafeteria.

  In fact, the accessible entrance to the library is not among the ones normally used (and I couldn't locate it) and the cafeteria requires different routing among users for example to reach the mensa building, where an external connection must be used to avoid an inaccessible staircase.

  I'm wondering if the forced use of a secondary routing path, different than the one followed by most, might increase the challenges posed by orientation and/or contribute to a segregation feeling when being forced to use different routes w.r.t other users.

- How is the restricted access to disabled bathrooms considered? [e.g., need of a key to access]

  I couldn't find any paper to compare different options of disabled bathroom access and no indications were provided by the *"Guideline on Accessibility in Building Design", published by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) in 2015.*

- 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]

  According to the *"Guideline on Accessibility in Building Design", published by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) in 2015, "*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." and "Rooms for catering should not be equipped solely with stand-up tables and bar stools" implying that the use of a common area shared by people with and without impairments can and should be supported by furniture design.

  As indicated by the guideline, at least an accessible option must be provided and flexibility is to be considered an added value, but an expert evaluation of the furniture disposition in the cafeteria building might highlight missing options that I overlooked.

- 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]

  As suggested by the *"Guideline on Accessibility in Building Design", published by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) in 2015, "*A side-by-side use by people with and without impairments can be supported by furniture design" (BMUB p. 160), meaning that the needs of all groups of users need to be taken into account, but the equilibrium point when going beyond minimal requirements is still unclear to me.

4. 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]

  While an accessible website for people with sensory impairments allows them to inform themselves before visiting a building, the provided onsite information is the starting point of any orientation system.

  People with sensory impairments will be able to find the entrance 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. Acoustic or electronic information may be employed as guidance elements in individual cases *(BMUB p. 57).*

  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 *(BMUB p. 64).*

For orientation, a tactile layout plan, provided both in an embossed pyramid writing style and in Braille, placed in correspondence of access points could help people with visual impairments in the task of understanding disposition and purpose of a building's area. Tactile information (in Braille, embossed letters, or easy-to-understand symbols) can also be incorporated into handrails informing the user on the floor of the building or what routing to follow. To be noted that handrails can also be employed at horizontal levels such as in corridors. *(BMUB p. 68).*
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 *(BMUB p. 116).*

For guidance, both special elements forming a closed system, and common elements designed to serve also as guidance tools can be used.
In interior spaces, the guidance character of the elements can be ensured via tactile or visual information and contrasts. Elements that serve as internal guidance tools can be buildings walls, high-contrast skirting boards, changes of surface material, and readily noticeable pieces of furniture. The boundaries of rooms are easier to be perceived by visually impaired people when contrasts, for example on doorframes.
In exterior spaces, guidance elements can be employed as guiding lines, ensuring consistent tactile detection of paths. Elements that serve as external guidance tools can be 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.

Zoning is another requirement for buildings' accessibility; 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. Movement areas, free of fixtures and obstacles, and common areas, where furniture is placed, should be clearly discernible from one another *(BMUB p. 67-69).*

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 and their use is to be avoided in interior spaces and acceptable in exterior ones. They should be used as guidance systems in external spaces if no consistent orientation and guidance system can be implemented using the guidance elements for exterior spaces described before. Ground surface indicators should also be used in cases of hazardous or poorly visible locations *(BMUB p. 73).*

Another orientation and guidance tool in interior and exterior spaces is contrast. 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, a light colour material is to be preferred because easier to detect by people with poor eyesight. 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 and warnings should always be marked more prominently than guidance elements. Specular reflection is to be avoided *(BMUB p. 75).*

To be noted that a bi-sensory approach is the basis for conveying information to people with sensory impairments, i.e., information is conveyed using at least two senses. Information may be conveyed in tactile, visual and/ or acoustic ways *(BMUB p. 64).*

Given the availability of many guidance and orientations tools and the variety of possible options, it is difficult to evaluate the accessibility of the KIT cafeteria and library buildings without the input of an expert or first-hand experience.

In my opinion though, the connection between the public transportation endpoints and the entrances of the buildings is poorly signalled, especially because of the presence of bicycles that limit the number of surfaces that can be used for guidance and because of the uniform flooring material used in the external areas of the facilities. To be noted that ground surface indicators are used at crossroads and up to the limit of campus area, but not between the buildings.

In addition, the absence of a tactile layout plan at the access points and the missing indications in braille or embossed letters at path crossings constitute, in my opinion, a severe limitation to orientation within the facility and inside the buildings. I wander, in fact, how a room's purpose can be guessed by blind users when no tactile information is provided at the entrance and how information available in small writing is accessible to people with visual impairments.

An auditory alternative should not be necessary if the tactile alternative to the visual conveying of information was present.

- 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]

This question aims to address my personal doubt of how inaccessible the entrance to the library is, given the fact that I couldn't find it.

- 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?

I couldn't find sufficient literature to address this specific issue.

The purchase of goods and relative labels was not mentioned in *"Guideline on Accessibility in Building Design"(2015)* and both *"*Wheelchair accessibility of public buildings: a review of the literature*" (2011) and* "Architectural Barriers to Persons With Disabilities in Businesses in an Urban Community" (1994) discussed the width of the aisles and the height of the shelves in stores, but not how products can be recognized by people with visual impairments.

- 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?

According to the *"Guideline on Accessibility in Building Design"(2015), "*Operational elements and communications systems that are necessary for the public's use of the building in accordance with its intended purpose need to be detectable, reachable, and usable accessibly. […] In order to make operational elements easy to find, they should always be installed at the same spots. The elements themselves need to be designed in accordance with the bi-sensory principle. They should boast optical contrasts and, in addition, must be detectable tactilely or acoustically. Spot lighting can be used for additional support.*"*

Considering that the goods sold at the KIT cafeteria are operational elements that are necessary for the public's use of the building in accordance with its intended purpose, they should always be installed in the same place and a bi-sensory indication system should be adopted to provide information and both criteria are not respected, implying that the goods disposition and signalling is not accessible to people with visual impairments.

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