Adapting Shelter Design for Improved Accessibility

From the emergency phase to durable solutions, shelter is critical to survival - providing security and personal safety from the climate and from ill health and disease, as well as supporting human dignity and family and community life1. However, while shelter is a basic need of all, **some individuals with specific needs may have different requirements**, particularly in its design due to factors such as disability, age, and health situation.

The prevailing perception of accessible design is that it is difficult and costly, needing specialized features and micro-solutions. But in reality, **minimal changes can already improve accessibility** and can cost as little as **only 2% more than the original cost**.

The use of Universal Design principles, for instance, creates **functional environments that can be used by anyone**, regardless of age, gender or disability, without the need for specialized design or adaptation2; while **promoting self-reliance, independence and ease of living for persons with specific needs**.

Following are some technical recommendations which can be used to improve accessibility for emergency shelters (including evacuation centers), transitional and permanent structures, as well as other public facilities (i.e. camp offices, health services and other communal areas):

1. Assessments should include the identification of vulnerable groups and their specific needs to ensure their inclusion in the overall response.

2. Surfaces both leading to and inside structures should be made **stable, firm, even and slip-resistant**, with **pathways at least 90 cm wide**. Where surfaces are made of planks of wood, make sure that there are **no gaps in between planks** large enough for the wheels of the wheelchairs, canes or crutches to go through.

3. As much as possible, structures should be **single-level**.

4. Where structures are raised or are split-level, ramps should be used. Ramps should have a **gradient of 1:10, a non-slippery surface, and a minimum width of 90 cm.** Note that ramps that do not meet these measurements may pose safety risk to all users.

5. In cases where stairs are necessary, **stairs need to have a maximum height of 16 cm, a minimum length of 28 cm and minimum width of 90 cm.** These measurements make it easier and safer for all users, including those with limited physical mobility. More than just for structures used by those with specific needs, **stairs in all structures should be built with this step size**.

Accessible houses with stairs and handrails facilitating movement of persons with physical disabilities or with assistive devices.

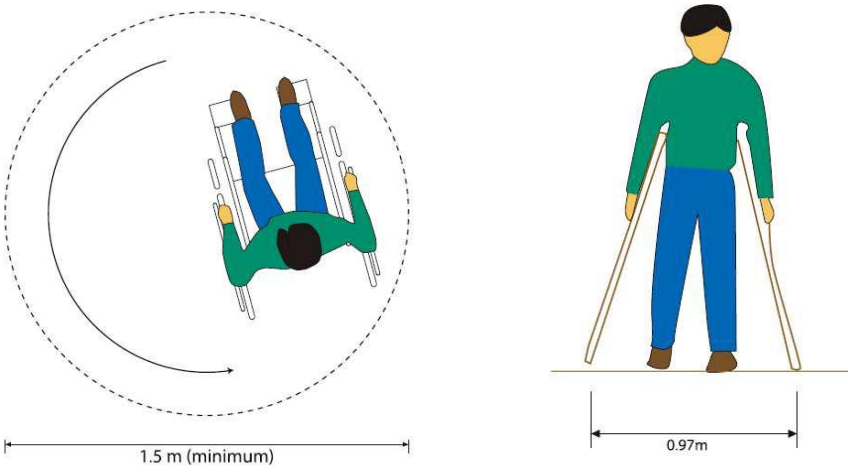
6. **Color contrasts help people with visual impairments to differentiate their environment, providing them with important information for their orientation.** Color contrast can be used by placing a strip of bright (yellow) paint in steps to signal change in height, and using colors for handrails and doors to distinguish them from surroundings.

7. All ramps and stairs should have **handrails at both sides**. Ideally, handrails should be **round for a better grip**, and **between 50 and 70 cm in height**. Ropes can also be used as handrails.

8. Doors should be large enough for a wheelchair or crutch-user to enter – at least **90 cm in width**. If possible, doors should be double-hinged, making it easier to enter by opening inwards, while also not limiting space inside by opening outwards.

9. Where there are persons with assistive devices, **area space should consider the size of the persons with their equipment** to gauge what size of space best facilitates ease of movement. See examples below.

10. Persons with specific needs should ideally be located near public facilities to reduce accessibility barriers that other members of the population may not face.



The required space of wheelchair and crutch users.
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Handicap International - Inclusion Technical Unit (ITU)
Handicap International can provide organizations and other stakeholders' additional technical guidance on shelter accessibility on-site. In cases where shelters are to be provided for individuals with additional very specific needs, HI can also assist in applying individual modifications depending on the person's needs and/or advise teams on how these can be done.

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