Contact Michael Morris – Consultant by email: mmorrisconsultant@gmail.com

https://uk.rs-online.com/web/generalDisplay.html?id=/home-safety-checklist-wheelchair-users

A Home Safety Checklist for Wheelchair Users

THE PHYSICAL HOME ENVIRONMENT

As part of any home safety checklist for wheelchair users, it's crucial to understand and anticipate the sorts of challenges that may be presented in and around the home. To this end, a major wheelchair user housing study was carried out by the Northern Ireland Housing Executive in 2006

Wheelchair users who participated in the study revealed that, besides general locomotion, areas of common concern or particular difficulties frequently experienced in people's own homes included:

- personal care, such as getting in and out of bed, washing or dressing
- food preparation and eating
- reaching up or down to access cupboards, shelves, washing lines etc
- difficulties relating to loss of sensation(s)
- handling and manipulating items such as knobs, levers, standalone objects or heavy/bulky equipment

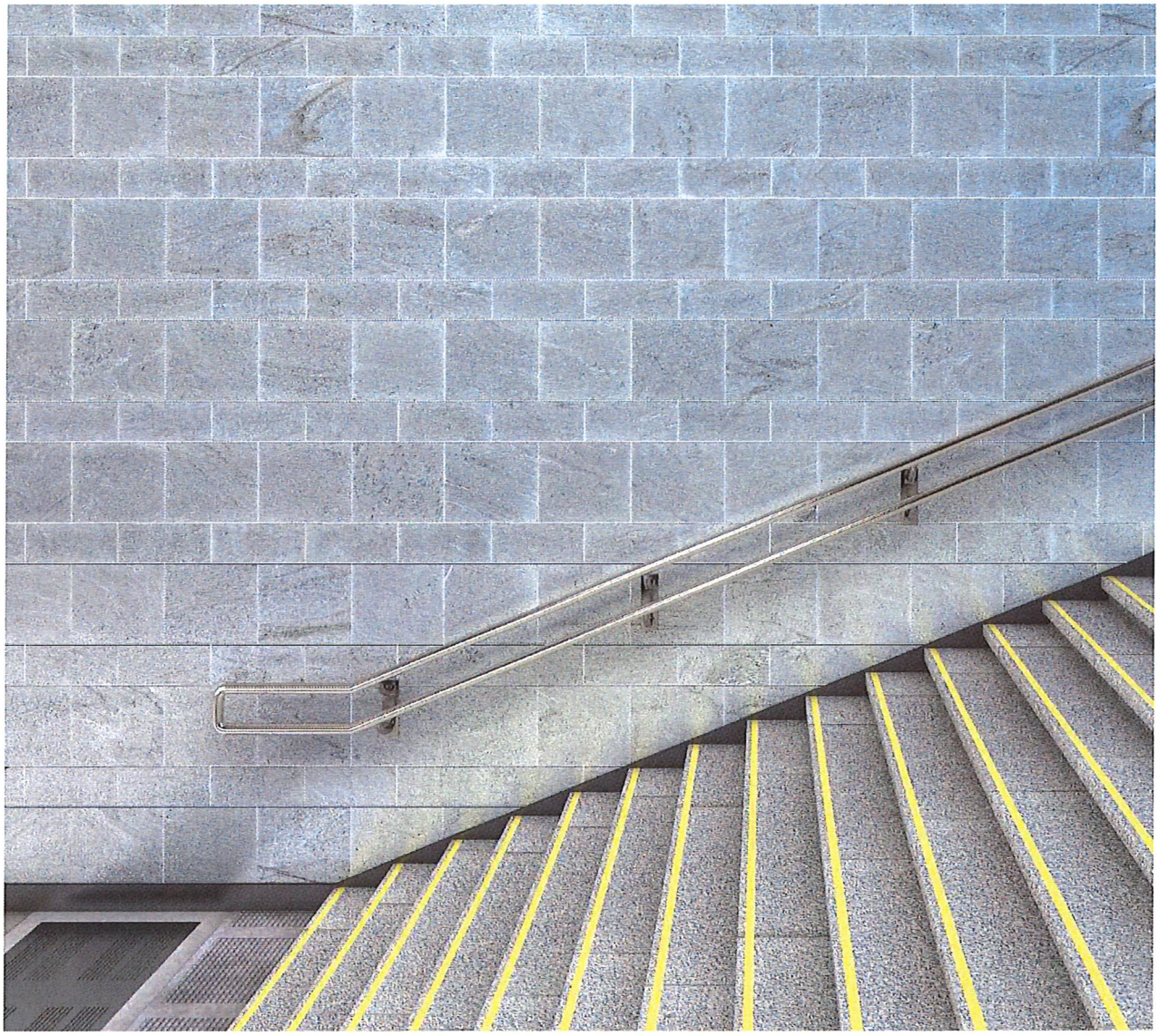
It's important to consider and address all these sorts of challenges - and most importantly, to listen to the experiences of the wheelchair user - when putting together any detailed checklist for improved home safety.

General home layout

- Doorways may need to be wider than standard in order to make access easier for wheelchair or walker users - a width of at least 32" is considered suitable in most cases
- Turning circles inside rooms need to be considered, and suitable floor space left open for users to comfortably turn around and exit the space
- The following figures provide recommended min/max measurements for various areas of the home and grounds:
    - Standard wheelchair footprint: 30x48"
    - Minimum space to manoeuvre a standard wheelchair on the spot: 60x60"
    - Corridors and access routes: 36"

- Interior openings for all doors: 32”
- Table/work surface height: 28-32”
- Typical knee clearance height for underside of desks and tables: 27-29”
- Maximum access ramp slope: 1:12
- Maximum general ground slope (parking spaces, driveways, aisles etc): 1:48

- **Stairways and corridors**



- Handrails must be installed correctly, and comfortably able to support the full weight of the user
- This means they should never be bolted or screwed into any wall covering or plasterwork that cannot itself support this weight, and the fixtures themselves must also come up to standard

- Leave enough space between handrails and walls to allow for a full and firm grip around the entire circumference of the rail at all points
- On staircases, allow additional length of handrails beyond the first and last step, to provide support once the user reaches the top and bottom of the steps
- Pay particular attention to lighting in stairways and corridors; both must be brightly lit in all areas, and any excessive glare or shadowing created by decor should be avoided
- Always keep stairways and corridors clear at floor level along their entire length
- Stair treads and risers should be of an appropriate height/width to accommodate a full footprint without having to stretch or overextend
- Avoid placing mats, rugs, runners or other loose textiles at the top and bottom of staircases or along corridors, where they could cause slips or tripping hazards

Kitchens

- Kitchens can be especially problematic areas of the home for people who use wheelchairs or walkers; the layout and design of a wheelchair-friendly kitchen should always prioritise safety and mobility
- Countertops, including ovens and burners, must be placed at an appropriate height; most wheelchair armrests are around 29" from the ground, while standard kitchen counter height can be anywhere from 28-36"
- Remember that countertops with cupboards beneath them don't allow most wheelchairs to get close enough to the work surface
- Where height-adjustable work surfaces aren't available, recesses for knee space (30-32" wide) below worktops may be necessary in various areas of the kitchen

- Be aware of burner placement when installing, including where rings and controls are situated
- Ensure the user does not have to reach across flames or hot areas to access various areas of the oven or controls, either during or after cooking
- Wall ovens can be far easier to access than standard floor units
- Strategically placed mirrors can help a wheelchair user to view the contents of pots and pans while cooking
- Consider how easy or difficult the user finds it to transfer hot or heavy items (particularly fluids) to and from the oven area; counter-level ceramic rings can enable sliding pots and pans onto the heat, rather than lifting them
- Additional taps or filling stations can help reduce the need to transfer items from oven to sink; failing this, a hose attachment for sink taps can also be useful
- Sinks themselves should be shallow enough for the user to reach the bottom of them from a seated position
- Install lever-operated mixer taps for easier operation
- Adjust the height of other equipment to a suitable level from the ground; remember that the lower racks of dishwashers and fridges may need to be raised up
- Extendable or pull-out shelving, including lazy susans, are useful for accessing deeper cupboards
- Drawer runners should be sufficiently sturdy to allow for complete extension even when full
- Ensure floor coverings are non-slip
- Ensure there is always a suitable fire extinguisher available within easy reach

Bathrooms

- Spacious and convenient access to baths, showers, sinks and toilets is key to any wheelchair-friendly bathroom setup

    - Always consider the height of any fixtures such as toilets, sinks and shelving, and adjust accordingly
    - Install roll-in showers without a kerb or lip at ground level

- Handrails, transfer seats, benches and grab bars should be sturdy, and secured such that they will comfortably support a person's full weight
- Again, be equally mindful of the strength of fixtures, fittings and wall areas when attaching support structures
- Choose surface coverings carefully to eliminate obvious sources of slipping or tripping on entry and exit to baths and showers, particularly on floors likely to get wet (or where mats and rugs are involved)
- Flushes, taps and other fittings can be difficult to operate from a seated position, particularly if the user has any difficulty manipulating items with their hands; use sensor flushes and lever taps wherever possible
- Check for any exposed plumbing or fittings that should be boxed in, to reduce the risk of scalding or burns when reaching across from various angles
- Always check whether or not the user requires anti-scald controls on taps and showers to mitigate any reduction in limb sensation

Outdoor areas and access points

- Check for suitable gradients on any access ramps, both inside and outside the home; about 1" height per foot of length is close to the safe limit
- Apply the same rigour when installing handrails on ramps and access points as you would with a staircase
- Slipping or skidding is a significant hazard on all ramps and sloped areas; use non-slip finishes or coverings if working with wooden ramps, or lateral striations (a

broom/rake finish running side-to-side across the slope) on concrete to increase grip

- Never use loose coverings such as gravel, sand or textiles on ramps and sloped areas; they can dramatically reduce wheelchair manoeuvrability and cause skids, tips or falls
- Ensure that suitable drainage is installed to help any wet surfaces dry quickly and effectively
- Regularly inspect ramps for any uneven areas, cracks, dirt build-up or other obstacles, and perform appropriate maintenance as required
- Keep access points free from accumulated clutter such as mail, litter, bicycles, pushchairs or any other blockages and obstacles (see fire safety)
- Be aware of clearance heights on barriers, gates and other obstacles

Fire safety

- Fire safety is a hugely important consideration for people who use wheelchairs or walkers
- A personal fire evacuation plan should be drawn up for every disabled person or group of disabled people in a building, and all should receive a copy of it
- The personal evacuation plan should explain the precise method and route of evacuation, taking into account both the person's location and their individual requirements, and assigning a designated refuge point from which to safely await assistance
- Evacuation plans should not rely on the emergency services being present in order to be carried out effectively
- A suitable fire exit should always be located as close as possible to any areas where wheelchair users spend significant amounts of their time in the home

- Keep emergency exits and all relevant evacuation routes, including corridors, access ramps and doorways, clear of any clutter or obstacles at all times
- Bear in mind that lifts will not be accessible in the event of fire, unless they meet specific special requirements and safety standards
- Helpers and emergency services should always be informed when accessing a building where there is a wheelchair user present
- Homeowners and/or building managers must install and regularly inspect all necessary fire safety equipment to assist in a successful evacuation, including fire alarms, fire safety signs and emergency lighting
- Ensure all emergency scenario responsibilities are clearly designated and understood by all parties wherever applicable

BASIC WHEELCHAIR CHECKS AND MAINTENANCE

- Regular wheelchair maintenance is key to preventing many common types of malfunctions and accidents, as well as for improving the longevity of the equipment and its various components

- In terms of general cleaning and upkeep, all wheelchairs should come with a guide; in most cases, a wipe down with a damp sponge followed by a dry cloth will be sufficient for daily accumulations of dust and mud (avoid harsh chemicals or abrasive scourers)
- Similarly, all wheelchairs should come with a detailed maintenance guide
- Some basic checks and upkeep duties can be done entirely by the user, such as tyre pressure adjustment and wheel lubrication; other repairs should only be carried out by a qualified equipment engineer
- Perform frequent parking brake checks, and always have your chair serviced promptly if any braking issues are suspected or encountered
- Regularly check that the wheelchair folds and unfolds properly when using a relevant model; it's good practice to exercise these folding/unfolding mechanisms often in order to keep them functioning smoothly
- Check while seated that the adjustable footplate height set by your wheelchair specialist is still comfortable and secure; thighs should be resting on the seat cushion while your feet are in place, with a ground clearance of at least 2" (ideally 4") below the footplates
- Any detachable, replaceable or independently serviceable parts (arm rests, seat belts and straps, leg guards, batteries, support cushions, wheel assemblies, motors) should be inspected regularly, with a set schedule of maintenance checks and repair cycles
- Don't allow non-users, especially children, to use, alter or ride on a wheelchair - particularly where any adjustable controls or settings are involved
- Check that all removable parts, such as arm or leg rests, are firmly attached and secured before setting out
- Check and replace casters regularly; side-to-side wobbling motions when moving at speed are sometimes referred to as 'caster flutter', and are a good indication it's time to replace them - ignoring this sign can be dangerous
- Never remove anti-tip wheels or bars, except for immediate maintenance and replacement
- Anti-tipping levers or wheels should have a ground clearance of 2"
- For electric wheelchairs, always ensure the power is switched off before entering or exiting the chair
- Always have a personal emergency plan in place, including any necessary contacts and alternative transport home in the event of a major malfunction or breakdown while out and about

ACCIDENT PREVENTION TIPS

- Become familiar with your lowered centre of gravity in a wheelchair, and adjust your seating position to provide maximum balance and more even weight distribution
- Practice bending, reaching, lifting and transferring in/out of the wheelchair in a safe environment, to gain a better sense of how various movements affect overall stability
- Consider choosing a brightly coloured wheelchair to improve visibility at all times of day, and always use lights and reflectors when out and about in low light
- Tipping forward, backward or sideways is by far the most common cause of accidents for people using wheelchairs
- There are many factors which can increase the likelihood of tipping, including:
    - Excessive speed
    - Fast cornering
    - Rough, loose or slippery ground, and other unsuitable surfaces
    - Imbalanced sitting positions
    - Overreaching for items
    - Incorrect or ignored use of parking brakes, tipping levers and balance casters
    - Unseen or underestimated obstacles
- Reaching for items positioned behind wheelchairs is a common cause of tipping; always position the chair as close as possible to the item, make use of any balance casters, and only reach as far as a single full arm extension (do not shift position in your seat for extra reach)
- Similarly, lunging forward for items further away than a full arm length should be avoided; again, position the wheelchair closer to the item and engage wheel locks and castors before reaching over
- Fully engage and lock parking brakes when transferring in/out of a wheelchair

- Move footrests completely out of the way in transfer, to reduce the risk of them becoming a tripping or tangling hazard
- Always keep lap covers, hands, coats, and any other loose or dangling items well clear of wheels, spokes and other rotating mechanisms
- Don't unbalance the chair by hanging heavy or bulky items from the back or sides; if you have to carry goods in the wheelchair, position them as close to your own centre of gravity as possible, and remove them completely before transferring out

- Avoid kerbs, steps or humps that are greater than 2" in height; anti-tipping levers are strongly recommended for negotiating such obstacles
- Always approach kerbs and steps with the backrest in its fully upright position; approach them head-on, never at an angle, and keep the chair moving continuously until completely clear of the obstacle
- Avoid ramps or slopes that are steep enough to cause significant difficulty; while ascending or descending, avoid sudden or severe steering movements, and always tackle inclines as directly 'head-on' as possible (manoeuvring sideways dramatically increases the risk of tipping)
- Only use parking brakes to lock and secure a wheelchair once fully stopped; never attempt to use them as a means to slow down or stop when in motion
- Try to avoid obstacles or uneven terrain in wet conditions (and at all times if using an electric wheelchair, unless specifically told this isn't a concern with your model)

- Avoid pulling heavily on doors, cupboards, drawers and other movable or stuck objects while seated in a manual wheelchair; this tends to shift your centre of balance significantly, at which point sudden opening or release can easily cause you to tip over

RECOURCES, DOWNLOADS AND FURTHER INFORMATION

NHS Wales general wheelchair safety/user guide
http://www.alas.wales.nhs.uk/sitesplus/documents/1141/Wheelchair%20User%20Safety%20Booklet.pdf

Accessible housing design tips
https://www.speakcdn.com/assets/2012/plough_aginginplace_booklet-f_web.pdf

Example home safety checklist layout (New Jersey Ageing and Disability Resource Connection)
http://adrcnj.org/Portals/_AgencySite/docs/checklist.pdf

Example adaptive equipment maintenance and training checklist (Aquila)
https://aquilacorp.com/resources/blog/wheelchair-safety-maintenance/

Wheelchair Skills Program
www.wheelchairskillsprogram.ca/eng/index.php

Fire escape guide for wheelchair users
https://www.elitefire.co.uk/fire-escape-guide-for-wheelchair-users/

International Society of Wheelchair Professionals
http://www.wheelchairnet.org/

Manual wheelchair safety tips for caregivers
https://elizz.com/caregiver-resources/caregiving-tips/manual-wheelchair-safety-tips

Mobility Advisor general wheelchair safety tips - use and maintenance
https://www.mobility-advisor.com/wheelchair-safety.html

Safety advice and equipment for wheelchair transport
https://unwinsafety.com/

Manual wheelchair safety tips for caregivers
https://elizz.com/caregiver-resources/caregiving-tips/manual-wheelchair-safety-tips

Mobility Advisor general wheelchair safety tips - use and maintenance
https://www.mobility-advisor.com/wheelchair-safety.html

Safety advice and equipment for wheelchair transport
https://unwinsafety.com/

KEY PRODUCT RANGES Click on the logo below to view our whole range

Axial Fans

LED Drivers

Cable Trunkings

Air Hose

Junction Boxes

DOL Starters

Flow Switches

Set Screws

Flexible Ducting

Faceplates

COB LEDs

Copper Compression Fittings

Spanner Sets

Hole Saws

Compression Springs

Threaded Rods

Aluminium Bars

Stainless steel Bars

Emergency Exit Signs

Rod Ends