

CHAPTER 6

ELDERLY-FRIENDLY DESIGN GUIDELINES

6.1 GENERAL

The guidelines set out in this Chapter aim to provide a safe and comfortable living environment for the elderly who may gradually experience declining abilities; promote active ageing by enabling the elderly to achieve autonomy and independence without the help of others; and promote the elderly's well-being, in particular social interaction among the elderly and between the elderly and other age groups.

Building owners and designers are encouraged to adopt these guidelines in the building design as far as practicable.

6.2 DESIGN GUIDELINES

The design guidelines set out as recommended design requirements are grouped into four categories, namely Mobility and Accessibility (section 6.2.1), Design Adaptability (section 6.2.2), Well-being (section 6.2.3), and Gerontechnology (section 6.2.4).

6.2.1 Mobility and Accessibility

The functional capacity (such as muscular strength, balancing, vision and hearing) of a person often declines gradually as ageing progresses, which may increase the risk of accidents and injuries. One crucial factor for ageing in place is to ensure safe mobility and accessibility of the built environment, both inside and beyond the residential units.

Improving mobility and accessibility can significantly enhance the safety, health and well-being, as well as the convenience of the elderly, promoting their independence and reducing the risk of falls and other health complications.

In addition, ensuring smooth circulation between various major destinations will facilitate the convenient and efficient movement of building occupants, especially for the elderly.

Location	Features	Recommended Design Requirements
Residential Units		
Bathrooms	A1. Bathrooms	<p>(a) Adequate clear space of not less than 1200 mm diameter should be allowed for turning of wheelchair and transfer of users.</p> <p>(b) Grab bars should be provided.</p>
	A2. Doors	<p>(a) Doorways of not less than 850 mm should be provided to allow a wheelchair to pass through.</p> <p>(b) Sliding doors should be provided for easy and convenient use. Where sliding doors could not be provided, doors that take up less space, such as folding or double swing doors, should be provided.</p>
	A3. Bathtubs / Showers	<p>(a) Bathtub should have either built-in seat at the head end of bathtub or attachable portable seat that fastens securely to the tub when needed.</p> <p>(b) Showers should be of size not less than 1500 mm x 900 mm with a folding seat to allow transfer of users.</p> <p>(c) Grab bars should be provided.</p>
	A4. Floor Surfaces	<p>(a) Floor surfaces should comply with the Best Practice Section under Division 4. Slip-resistant floor finishes should be used. Shiny and reflective floors such as marble, glazed tiles and the like should be avoided.</p>

Location	Features	Recommended Design Requirements
Others	A5. Fittings and Furniture	<p>(a) Double-switching systems should be considered.</p> <p>Switches and controls should be provided at reachable level.</p> <p>For bedrooms, switches and controls should be provided near bedside to avoid crossing the room in the dark.</p> <p>(b) Lever-type controls and handles should be used. Knob handles, push operated and self-closing type faucet controls should be avoided. Examples of elderly-friendly door handles and faucets are provided in Figure 47.</p> <p>(c) Cupboards should not be installed at high levels. Overhead cabinets should be avoided. Pull-down shelves should be provided for cupboards at high level or overhead cabinets.</p> <p>(d) Drying racks and laundry poles projecting from the external walls of the building should be avoided.</p> <p>Flip hooks should be provided at main entrance for hanging items.</p>

Location	Features	Recommended Design Requirements
Common Areas and Facilities		
Accessible Routes	A6. Corridors / Paths and Lobbies / Lift Lobbies, Steps / Staircases, etc.	<p>(a) Accessible routes should be without steps, thresholds, small ramps or kerbs, wherever possible. Where changes in level are unavoidable, handrails or grab bars should be provided. The floor and wall surface along the level of difference should be in luminous contrast.</p> <p>(b) Handrails should be provided along common corridors.</p> <p>(c) Steps and staircases should be designed with wider treads and lower risers.</p>
	A7. Handrails	<p>(a) Handrails to corridors, steps and staircases should be lowered to a height between 810 mm and 900 mm from the finished floor level to the top of the handrails.</p> <p>Handrails should be of materials such as timber or with plastic coated surfaces for easier grip.</p>
	A8. Doors	<p>(a) Automatic doors should be provided as far as practicable.</p> <p>(b) If door closing devices are installed, they should be designed to allow external and internal doors to be opened with horizontal forces of not more than 28N and 18N respectively.</p> <p>(c) Lever-type handles should be used. Knob handles should be avoided. Examples of elderly-friendly door handles are provided in Figure 47.</p>

Location	Features	Recommended Design Requirements
	A9. Floor Surfaces	<p>(a) Floor surfaces should comply with the Best Practice Section under Division 4. Slip-resistant floor finishes should be used. Shiny and reflective floors such as marble, glazed tiles and the like should be avoided.</p> <p>Open jointed pavers or aeration paver blocks with uneven or very rough surface should be avoided at external open spaces.</p>
Lifts, Escalators and Passenger Conveyors	A10. Larger Lift Cars	(a) Larger lift cars with clear depth of not less than 1.5 m should be provided.
	A11. Seating within Lift Cars	(a) Resting facilities such as folding seats or lean on railings should be provided within the lift cars except fireman's lifts.
	A12. Lift Control Panels or Buttons	<p>(a) Control panels or buttons at the lift lobbies should be located at 1050 mm above the finished floor level. They should be easy to operate and have a minimum luminous contrast of 30%.</p> <p>(b) Lift control buttons in the lift cars should be back-lit.</p> <p>(c) Audio indication helping the elderly to locate themselves should be provided in the lift cars.</p>
	A13. Escalators and Passenger Conveyors	(a) Escalators and passenger conveyors should be designed with slower speed.

Location	Features	Recommended Design Requirements
Toilets and WC Cubicles	A14. Toilets and WC Cubicles	<p>(a) Doors of toilets and WC cubicles should open outward or both ways. Locks and latches should be of larger sizes and be able to open from outside with a coin.</p> <p>(b) Lever-type controls and handles should be used. Knob handles, push operated and self-closing type faucet controls should be avoided. Examples of elderly-friendly door handles and faucets are provided in Figure 47.</p> <p>(c) Emergency alarm system should be provided. Emergency call bell should comply with Division 17. Should pull-cord be installed, they must be extended to floor-level.</p>
Car Parks	A15. Vehicular Entrances	(a) Audio / visual warning signal should be provided at vehicular entrances of car parks.
Others	A16. Signs and Decorations	<p>(a) Signages</p> <p>Bright primary colours should be used as contrast or highlight for easier differentiation ¹. Monotone colour should be avoided.</p> <p>Colour combination of signs such as yellow figure on black background or white figure on blue background is recommended.</p>

¹ In general, elderly may become less sensitive to colours having shorter wavelengths (blues, greens and violets) as their lenses thicken and yellow with age. Warm colours with longer wavelengths (reds, oranges and yellows) are easier for them to differentiate.

Location	Features	Recommended Design Requirements
		<p>In addition to colour contrasts, clear signs with bigger font size should be provided for elderly-friendly facilities and floor numbering.</p> <p>(b) Wayfinding</p> <p>Different colours for different building blocks, floor levels, zonings or areas of different functional purposes are recommended to aid wayfinding.</p> <p>Different floor surfaces or colours should be considered for tactile / visual cues for navigation.</p> <p>Noticeable features, artworks, landmarks such as sculptures, planters, or fountains should be provided at different entrances, zonings and facilities for easy identification.</p>
	A17. Lighting Arrangement	<p>(a) All common areas of a building should have an illumination level of not less than 120 lux measured at the finished floor level, and uniformity of illumination level should be maintained for any space.</p> <p>(b) Where additional lighting activated by sensors is provided to enhance the illumination level of the lift lobby of upper floors, corridors, accessible paths and staircases, the length of the corridors and paths and the walking speed of the elderly should be considered in setting the duration of such sensors.</p>

Location	Features	Recommended Design Requirements
		<p>Alternative or stand-by light sources should be provided to illuminate any spaces in case of power failure.</p> <p>Consideration should be given to ensure gradual transition of lighting levels from one place to another.</p> <p>The use of natural lighting or ambient artificial white light should be encouraged.</p> <p>The use of wall-mounted light or peripheral lighting from floor lamps are superior to a central ceiling source as the formation of shadows can be avoided.</p> <p>Bare light bulbs producing glare which would cause pain to the aging eyes should be avoided.</p> <p>All interior spaces should be lit at a consistent and even level, from floor to ceiling and from wall to wall. High contrast between shadow and light creating confusion and disorienting patterns should be avoided.</p>

6.2.2 Design Adaptability

A person's living needs and preferences may change throughout his/her lifespan. Allowing the flexibility in modifying a residential unit without the need for structural alteration is a crucial aspect to facilitate ageing in place. Providing design adaptability in a home environment can accommodate evolving needs and preferences over time while obviating the need for relocation at old age. This enables the elderly to stay in the same and familiar environment and neighbourhood as they age, thus maintaining their family and community connections.

Location	Features	Recommended Design Requirements
Residential Units		
Individual Flats	B1. Convertibility without Structural Alteration	<p>(a) To suit the needs of the elderly at different ages, the residential units should be convertible without the need for making structural alterations so as to accommodate the following elderly-friendly designs:</p> <p><u>To reduce possible safety risks</u></p> <ul style="list-style-type: none"> i. Raised deck or similar to overcome level difference between indoor living area and the balcony; ii. Handrail / grab bars in toilet / shower area; iii. Shower seat; and iv. Low threshold and curbless walk-in shower. <p><u>To cater for the elderly on wheelchair</u></p> <ul style="list-style-type: none"> v. Lower door viewer for main entrance (see Figure 48); vi. Wider corridor within units with a clear width of not less than 950 mm; vii. Large and / or two-way switches and controls at reachable level; viii. Maneuvering area of not less than 1200 mm diameter in main entrance,

Location	Features	Recommended Design Requirements
Residential Units		
		<p>kitchen, toilet and bedroom;</p> <p>ix. Wider internal door with a clear width of not less than 850 mm; and</p> <p>x. Knee space under kitchen sink and wash basin.</p> <p><u>To improve convenience</u></p> <p>xi. Counter-top in kitchen with a depth of not more than 600 mm; and</p> <p>xii. Adequate drainage provisions to enable adaptive design.</p> <p>See Sample Layout of Elderly-friendly Adaptive Design in Figure 49.</p>

6.2.3 Well-being

Design features relating to well-being aim to promote a sense of contentment, encourage social participation and enhance intergenerational interaction and harmony. They reflect the important role that the built environment plays as they cater to the physical, mental and emotional needs of the elderly. Convenient and easy access to recreational facilities with equipment/ facilities that are designed for the elderly and a greater connection with nature can significantly improve the health and quality of life of the elderly, promote physical activity, social engagement, and sense of well-being.

These amenities may also serve “multi-generation” users which will in turn promote intergenerational harmony.

Location	Features	Recommended Design Requirements
Residential Units		
Habitable Space	C1. Windows	<p>(a) Larger windows with lower window cills should be provided to increase the amount of natural light and allow views of the outside for the elderly when seated or on wheelchair (see Figure 50). This can have positive impact on moods and reduce feelings of depression and anxiety. Nevertheless, requirements of protective barrier should be complied with. Other concerns such as privacy and fear of height should also be considered.</p> <p>Sliding windows should be adopted to enhance daily use by the elderly.</p>
Common Areas and Facilities		
Corridors / Paths and Lobbies / Lift Lobbies	C2. Lighting and Ventilation	<p>(a) Large windows at the end of long and dark corridors that may cause glare should be avoided.</p> <p>Cross ventilation should be optimised in common areas such as corridors and lift lobbies.</p>

Location	Features	Recommended Design Requirements
	C3. Resting Facilities	<p>(a) Resting places with resting facilities, such as seats (including fold-down seats) or lean on railings, should be:</p> <ul style="list-style-type: none"> (i) provided on stair landings; (ii) provided in corridors more than 50 m in length; or (iii) provided in typical lift lobbies. <p>(b) Long corridors and passageways within transport stations, interchanges and passenger terminals, and public passages within a building connecting with transport stations, interchanges and passenger terminals should be provided with resting places with resting facilities. The resting facilities should be provided in recessed areas at maximum intervals of 50 m.</p> <p>Resting facilities for items (a) and (b) above should not reduce the statutory requirements on the clear width of access and manouvering space, and should not cause obstruction to access, circulation and exit routes.</p>
Toilets and WC Cubicles	C4. Elderly-friendly Toilets	<p>(a) Elderly-friendly toilets should be provided and located in an easily accessible common area or within a toilet with multiple cubicles.</p> <p>See Sample of Elderly-friendly Toilet in Figure 51.</p>

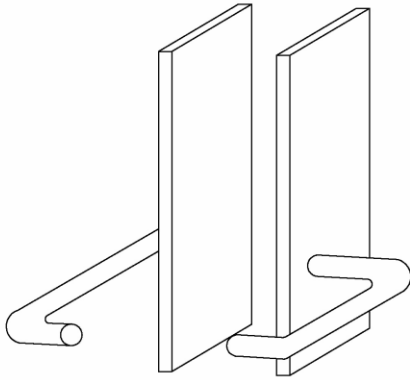
Location	Features	Recommended Design Requirements
	C5. Elderly-friendly Changing Station / Facilities in Accessible Toilets	(a) Elderly-friendly changing station / facilities with an adult sized, height adjustable changing bench, either wall mounted or free standing in accessible toilets should be provided.
External Recreation Spaces	C6. Elderly-friendly Resting Facilities	(a) Resting places with resting facilities, such as seats (including fold-down seats), lean-on railing, fixed chairs, tables and benches, steps, planter edges for sitting preferably with shelters or at covered areas should be provided at outdoor open space.
	C7 Elderly-friendly Fitness Equipment	(a) Elderly-friendly fitness equipment such as twister and stepper, pull-down equipment, stepping platforms, chest press equipment, tai-chi wheels and areas with safety flooring system should be provided.
	C8. Elderly-friendly Planters for Community Farming	(a) Knee spaces should be provided under the planters for community farming which can help to improve focus, memory and cognitive function (see Figure 52).
Others	C9. Choice of Material	<p>(a) Sound-absorbing materials should be used for floors and walls to avoid echoes.</p> <p>Non-glare or low gloss finishes on floors, matt paint or textured wallpaper on walls should be considered to help reduce glare. Glass or reflective material should be avoided.</p>

6.2.4 Gerontechnology

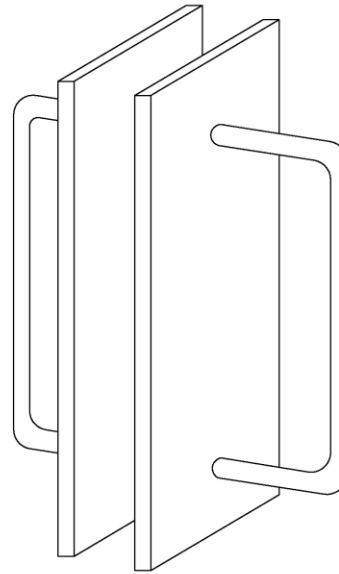
There are new technologies that can enhance safety and convenience, facilitate ageing in place, and foster confidence and independence of the elderly. Effective use of technology is not only a solution to elderly care but also an enabler for the elderly to lead a more independent life.

Gerontechnology helps the elderly with declining capacities to support themselves. Hardware and software applications to assist the elderly and/or their carers are under rapid development, and the elderly are becoming more technologically literate. By integrating assistive technologies into daily life, the elderly can overcome certain physical limitations, maintain cognitive function, and access vital services more easily. Some intelligent devices may also help detect accident of an unattended elderly. The adoption of gerontechnology requires a robust and accessible infrastructure that supports both technological and social integration. This includes high-speed and stable internet access in residential units and common areas of the buildings.

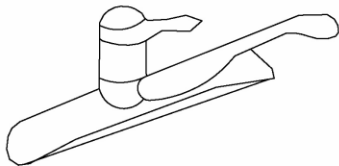
Location	Features	Recommended Design Requirements
Residential Units and Common Areas	D1. Network	(a) Enabling works for high-speed and stable internet provision (e.g. 5G) / Global Positioning System / Radio Frequency Identification Technology to support the use of gerontechnology and Internet of Things (e.g. smart card system for main entrance; water flow sensor; call caring services; motion sensor; window opener; artificial intelligence and robotic support; remote gas heater control; and door sensor) should be provided in residential units and common areas of the buildings.



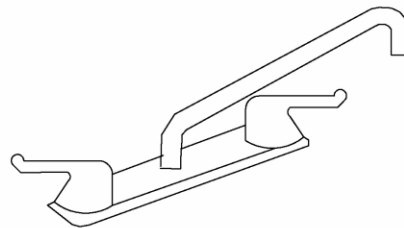
LEVER HANDLES



PUSH/PULL PLATE DOOR
PULL



LONG LEVER HANDLE
(RECOMMENDED)



SINGLE LEVER HANDLE
(RECOMMENDED)

Figure 47 – Examples of Elderly-friendly Door Handles and Faucets

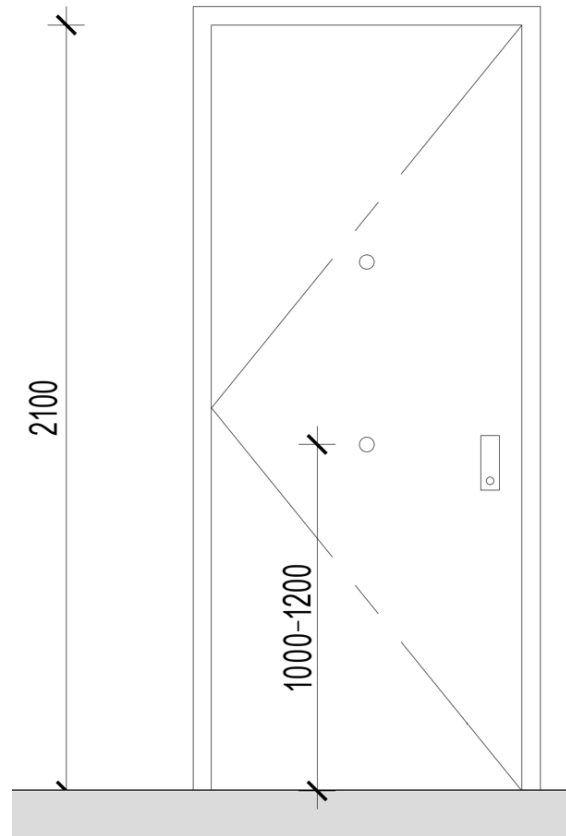
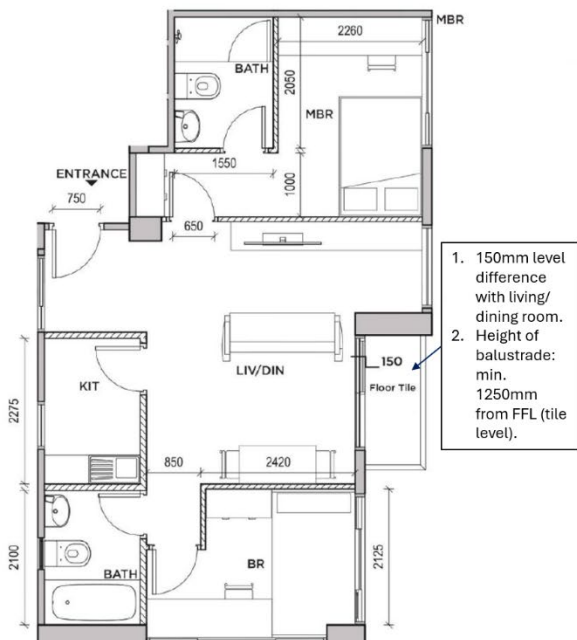


Figure 48 – Sample of Lower Eye Viewer

Before Conversion



After Conversion

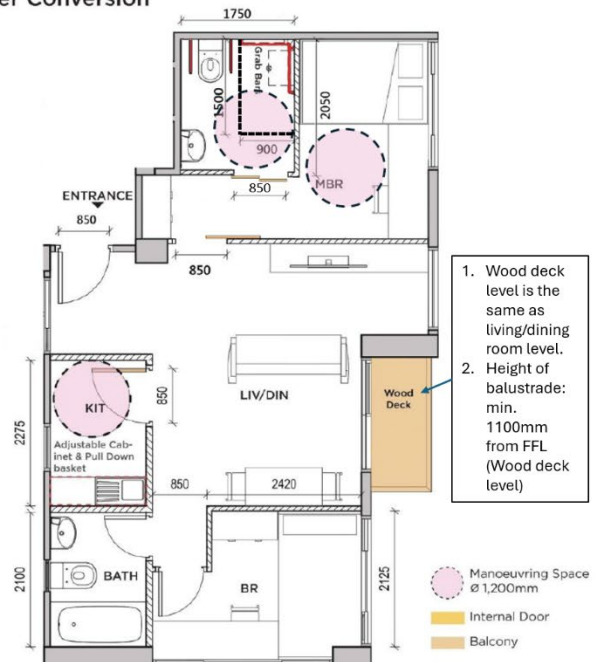


Figure 49 – Sample Layout of Elderly-friendly Adaptive Design

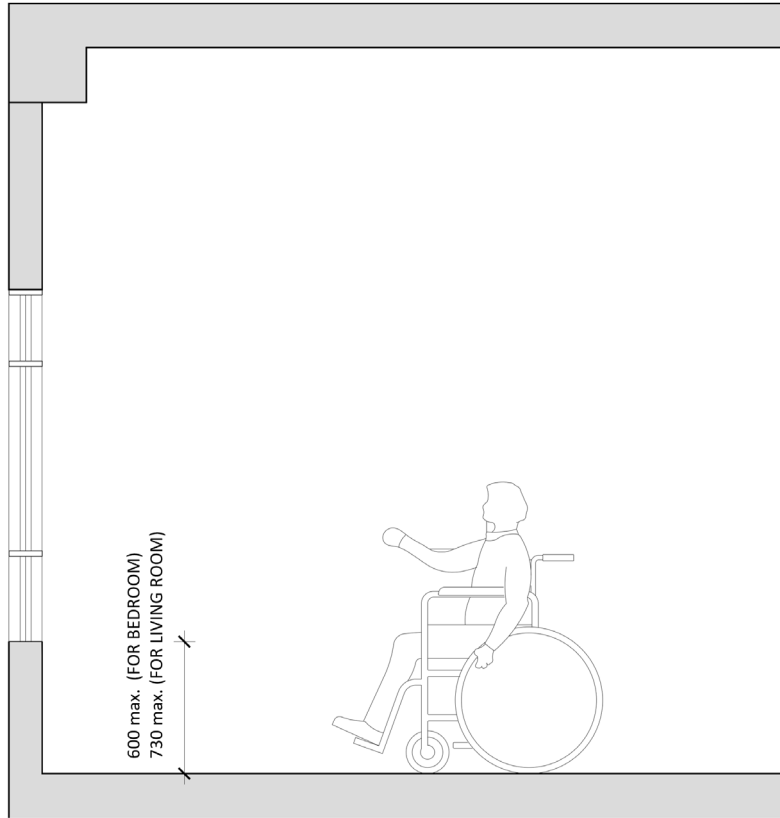
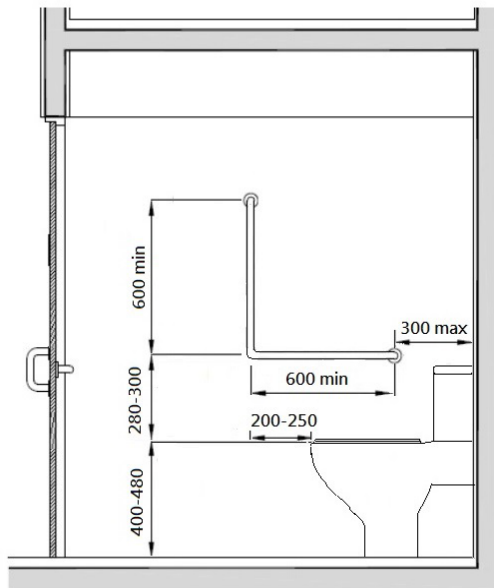


Figure 50 – Example of Lower Window Level



- (a) Open outward / folding door;
- (b) Grab bars on both sides of the cubicle, one side with L-shape grab bars;
- (c) Emergency call buttons complying with Division 17 in the cubicle;
- (d) Hands-free sensor type toilet flush;
- (e) Holding device for walking sticks and bags;
- (f) Minimum internal width 900 mm and door width 850 mm;
- (g) Adequate manoeuvring space of 350 mm diameter between the cubicle door and the water closet; and
- (h) A sign installed outside showing the cubicle is equipped with elderly friendly facilities.



(Note: Clear text, such as “Elderly-friendly Toilet” should be shown on the signage)

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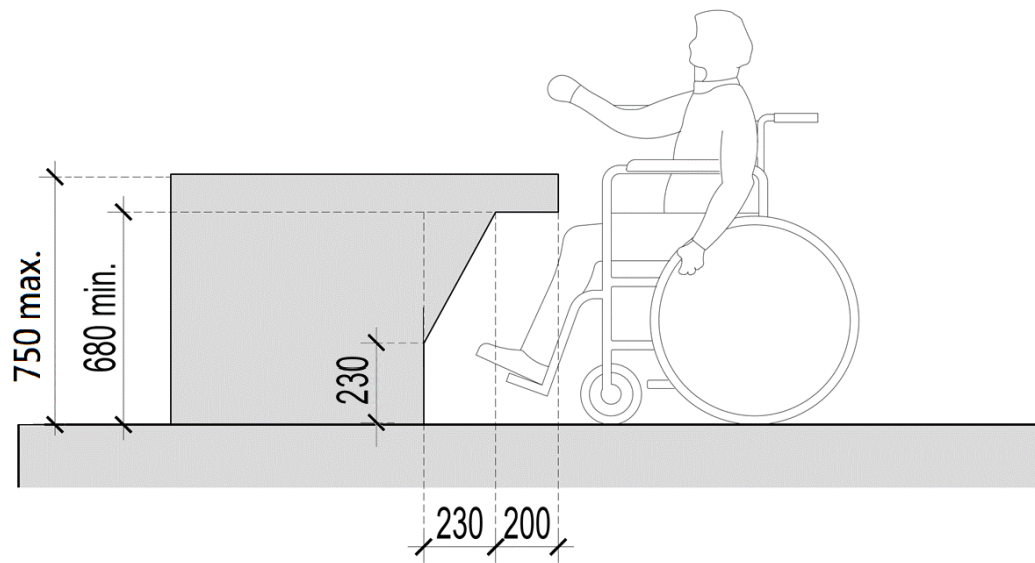


Figure 52 – Knee Space under Planter for Community Farming

(6/2025)