

Part B

Spatial Planning

– Dwelling Elements

1. Car Parking and Transfer Area	65	7. Kitchen	103
2. Dwelling Access, Entry, Letterboxes and Waste Disposal	69	8. Secondary Bedroom(s)	123
3. Internal Doors and Corridors	75	9. Secondary Bathroom/ Powder Room	127
4. Accessible Bedroom	79	10. Laundry	129
5. Accessible Bathroom	87	11. General Storage	135
6. Living and Dining	99	12. Private Open Space	137
		13. Landscaping	141

This section suggests spatial provisions and relationships needed within an accessible dwelling for consideration during the planning stage, broadly answering these questions:





- Where is each key space ideally located within the dwelling?
- How much room is needed for each space?
- What are the key components within each space?
- What are the ideal dimensions, location and features of these components?



1. Car Parking and Transfer Area

Spatial Planning

1.1 Car Spaces – General Provisions

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	1.1.1	Where on-site shared support to multiple accessible dwellings is provided – two car spaces	Allows for employment of support staff who need to travel by car	 
<input type="checkbox"/>	1.1.2	Where private car parking is provided – one accessible car space per accessible dwelling	Allows for car ownership, for friends and family to visit (whose cars may have accessible features)	 

KEY



Social Inclusion



Affordability



Physical Independence



Amenity



Homelike

Value Colour Code: **Highly Desirable** | Desirable

Car Parking Provisions

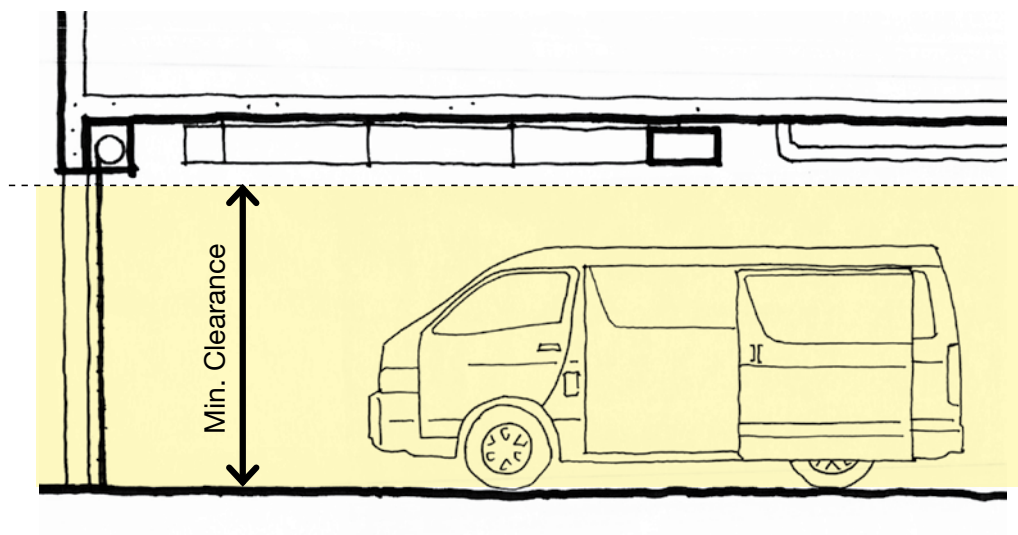
Not all developments will provide occupant car parking, depending on the location, proximity to public transportation and town planning requirements.

In developments where resident car parking is provided as a standard inclusion for all occupants, including accessible car parking supports equal opportunity for a person with disability i.e. he or she is not excluded from car ownership. However:

- The cost of car spaces in some inner-city locations may be generally cost-prohibitive. Accessible car spaces also cost more than standard spaces due to additional area requirements. (The equivalent of three standard spaces are needed to provide two accessible spaces.)
- Some people with high physical support needs will not drive. A single-occupant dwelling for a person with high support needs is less likely to require a car space than a three-person dwelling, also accommodating a person with high support needs.
- Without early involvement in a new development, it may be challenging to achieve 2.5m clear head height continuously to the accessible car space. Where this cannot be achieved, accessible car parking will be less useful, as taller vehicles will not be able to travel to the accessible car space.

1.2 Accessible Car Space – Spatial Provisions

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	1.2.1	a. Provide a safe, continuous step-free pathway from the front boundary of the property to an entry door to the dwelling. The path of travel referred to in (a) may be provided via an associated car parking space for the dwelling.		LHA Platinum
		Where a car parking space is relied on as the safe and continuous pathway to the dwelling entrance:		LHA Platinum
<input type="checkbox"/>	1.2.2	The space should incorporate: minimum dimensions of at least 3800mm (width) x 6000mm (length)		LHA Platinum
<input type="checkbox"/>	1.2.3	Provide vertical clearance over the parking space of at least 2500mm		LHA Platinum
<input type="checkbox"/>	1.2.4	Provide covered parking space to ensure protection from the weather		LHA Platinum
		Where private car parking provided (whether relied on as the safe and continuous pathway to the dwelling, or not):		
<input type="checkbox"/>	1.2.5	Min. dimensions 3.8m (w) x 6m (l)	Supports people using wheeled mobility devices to safely enter/exit vehicle	■ Supports LHA
<input type="checkbox"/>	1.2.6	2500mm vertical clearance overhead from boundary to car space	Allows vertical clearance to accommodate parking of van	■ Supports LHA
<input type="checkbox"/>	1.2.7	Coverage to ensure protection from the weather	Allows safe use of car parking area, especially for those who require longer entering and exiting a vehicle [Assistive products]	■ Supports LHA
<input type="checkbox"/>	1.2.8	Compliance with AS 2890.6 (2009)	Supports people using wheeled mobility devices to safely enter/exit vehicle	
<input type="checkbox"/>	1.2.9	Electric car charging	Supports driverless vehicles	
<input type="checkbox"/>	1.2.10	Avoid stacker-type car parking for accessible parking	Unlikely to provide sufficient circulation space either side of car space to suit people using wheeled mobility devices	



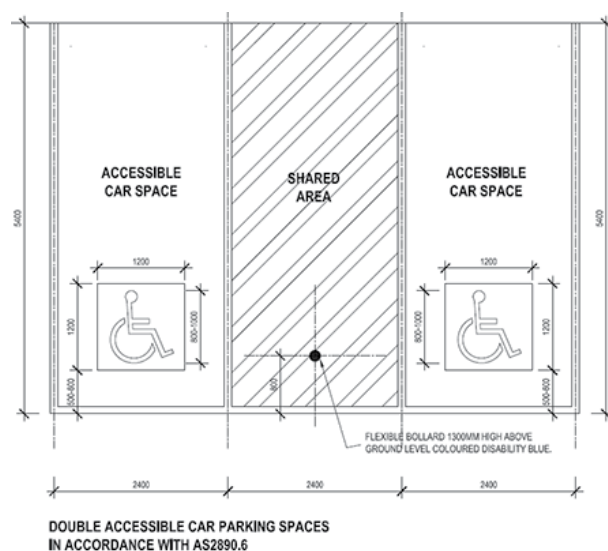
Brief Development

Vertical Clearance Over Car Parking

Vertical clearance:



- 2700mm better accommodates the height of vans
- 3000mm better accommodates vans with roof-mounted equipment

Minimum vertical clearances should be maintained from the point of street access to the car space, including below any open garage doors, or ceiling-mounted services along the vehicle's path of travel.





Covered accessible car space with generous overhead clearance and direct covered link to the dwelling, private residence.

1.3 Accessible car space – Positioning in relation to Dwelling


<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	1.3.1	Within close proximity to main dwelling entry	Supports people with limited strength or mobility	
<input type="checkbox"/>	1.3.2	Provide continuous accessible path of travel from accessible car space to dwelling entry	Supports people using assistive products	

Components

1.4 Wayfinding

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	1.4.1	In multi-residential contexts – an appropriate wayfinding system	Supports safe and intuitive travel, avoiding potential pedestrian/vehicle, day and night difficulties [Wayfinding]	
<input type="checkbox"/>	1.4.2	In multi-residential contexts – clear delineation between vehicle and pedestrian paths	Prevents potential pedestrian/vehicle, day and night difficulties [Wayfinding]	

1.5 Garage Door

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	1.5.1	Motorised with remote control – with capacity to link into assistive technology	Remote control supports use of the door by a person with limited mobility, strength or dexterity	




See Part C, Section 8 – Floor and Ground Surfaces, 3.1 External Ground Treatment



2. Dwelling Access, Entry, Letterboxes and Waste Disposal

Components

2.1 Continuous Accessible Path of Travel – Spatial Planning

✓	Ref.	Provision	Reason	Value
<input type="checkbox"/>	2.1.1	a. Provide a safe, continuous step-free pathway from the front boundary of the property to an entry door to the dwelling. This provision does not apply where the average ground slope of the ground where the path would feature is steeper than 1:14		LHA Platinum
<input type="checkbox"/>	2.1.2	Where a ramp is part of the pathway, level landings of min. 1200mm (length) exclusive of the door/gate swing that opens into them, must be provided at the head and foot of the ramp		LHA Platinum
<input type="checkbox"/>	2.1.3	Provide a safe, continuous step-free pathway from the front boundary of the property to any dwelling entry door	Provides the same opportunity to enter the dwelling to people using wheeled mobility aids, as those who do not	  

KEY



Social Inclusion



Affordability



Physical Independence



Amenity



Homelike

Value Colour Code: **Highly Desirable** | Desirable

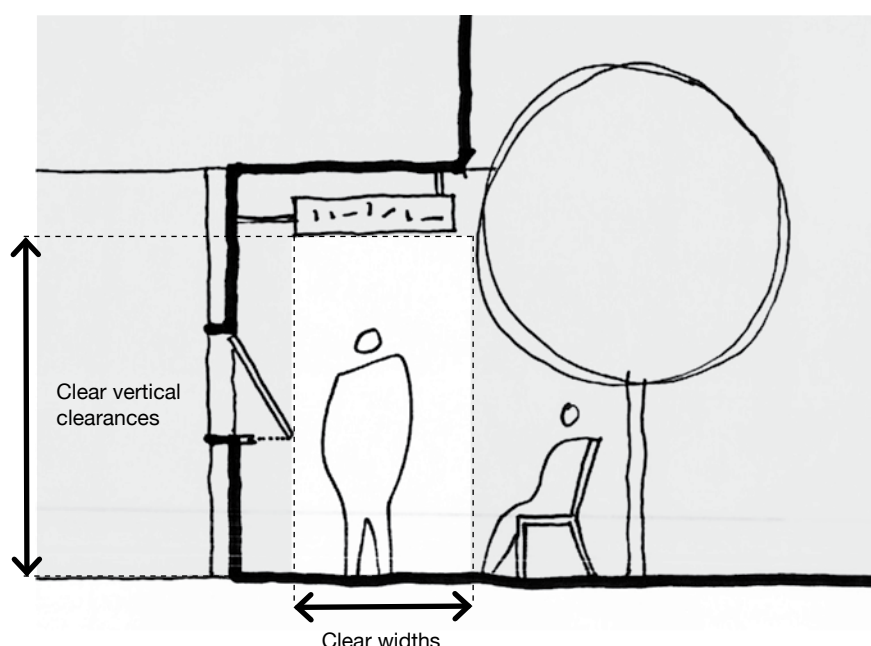
2.2 Continuous Accessible Path of Travel – Construction and Detailing

✓	Ref.	Provision	Reason	Value
		The path of travel referred to in (a) should have a min. clear width of 1200mm and have:		LHA Platinum
<input type="checkbox"/>	2.2.1	No steps		
<input type="checkbox"/>	2.2.2	An even, firm, slip-resistant surface		
<input type="checkbox"/>	2.2.3	Maximum crossfall of 1:40		
<input type="checkbox"/>	2.2.4	Maximum pathway slope of 1:14		
<input type="checkbox"/>	2.2.5	Where ramps are required they should have landings provided at a max. distance of 9m (1:14 ramp) and 15m (ramps steeper than 1:20). Landings should be maximum 1200mm (L)		
Where ramps are required:				
<input type="checkbox"/>	2.2.6	Use appropriate materials and fittings to provide residential appearance	Supports residential look and feel	🏠
<input type="checkbox"/>	2.2.7	Allow for the installation of future handrails to both or either side	Supports an ambulant person, who may have arm strength on one side only	♿ \$
<input type="checkbox"/>	2.2.8	Min. vertical clearance along all paths of travel to dwelling entry doors, as per AS 1428.1 (2009)	Prevents possible obstruction which may obstruct a person using a wheeled mobility device, or cause property damage	♿ \$
<input type="checkbox"/>	2.2.9	In multi-residential contexts – an appropriate wayfinding system	Supports safe and intuitive access to the dwelling, particularly for people with cognitive and memory impairment [Wayfinding]	♿

See also Part C, Section 8 – Floor and Ground Surfaces, and Part B, Section 13 – Landscaping for Civil Engineering Within an Accessible Pathway

Brief Development Vertical Clearance

- AS 1428.1 (2009) highlights possible obstructions that should be kept free of paths of travel:
- Vegetation
- Signs, seating, awning windows, etc
- Services (switchboards, gas, hot water, A/C units, etc.)



Brief Development

Path of Travel Width

- 1500mm – allows for multiple persons to travel past each other e.g. a person using a wheeled mobility device and a person who is ambulant
- 1800mm – better allows for multiple persons using wheeled mobility devices to pass one another comfortably

External paths with features that enhance ease of use, including grabrails on both sides, gentle inclines, ample viewlines and straight lines.
Photo provided by Royal Rehab.



2.3 Dwelling Access Gates and Entry Doors – Spatial Planning

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
		The dwelling should provide an entrance door with:		LHA Platinum
<input type="checkbox"/>	2.3.1	Min. clear opening width of 900mm		LHA Platinum
<input type="checkbox"/>	2.3.2	Step-free transition – which may be: <ul style="list-style-type: none"> • Level transition and threshold (maximum vertical tolerance of 5mm between abutting surfaces is allowable provided the lip is rounded or bevelled) • Entrance ramp – where threshold exceeds 5mm and is less than 56mm • Step ramp – where there is a change in height of max. 190mm. Any step ramp should provide: <ul style="list-style-type: none"> • Max. gradient 1:10 • Min. clear width of 1200mm (note: width should reflect the pathway width) • Max. length of 1900mm 		LHA Platinum
<input type="checkbox"/>	2.3.3	Reasonable shelter from the weather		LHA Platinum
<input type="checkbox"/>	2.3.4	A level landing area of at least 1500mm x 1500mm should be provided at the level (step-free) entrance door. A level landing area at the entrance door should be provided on the arrival side (i.e. the external side of the door) to allow a person to safely stand then open a door		LHA Platinum
<input type="checkbox"/>	2.3.5	The entrance must incorporate waterproofing and termite management requirements as specified in the NCC		LHA Platinum
<input type="checkbox"/>	2.3.6	950mm clear opening width to all habitable rooms		SDA High Support
<input type="checkbox"/>	2.3.7	External doors and outdoor private areas to be accessible by wheelchair Note: NDIS Minimum Requirements do not specifically define what is needed to achieve this requirement. The suggestions below support the intent of the requirement and may be incorporated to meet it		SDA High Support
<input type="checkbox"/>	2.3.8	Level (step-free) transition and threshold (maximum vertical tolerance of 5mm between abutting surfaces is allowable provided the lip is rounded or bevelled)		■ Supports SDA
<input type="checkbox"/>	2.3.9	Latchside clearance as per AS1428.1 (2009) Figure 31 to doors/gates		■ Supports SDA



Ramped off-street private entries to ground floor dwellings, Hunter Housing Project.



Letterboxes located at an accessible height, Mission Australia (Victoria) housing, MSM Architects.





<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	2.3.10	All entry doors to feature the LHA Platinum provisions outlined above.	Provides the same opportunity to enter the dwelling to people using wheeled mobility aids, as those who do not	
<input type="checkbox"/>	2.3.11	In multi-residential contexts – stagger dwelling entries which face one another	Prevents direct sightlines by neighbours and enhances privacy to dwelling	
<input type="checkbox"/>	2.3.12	Side window or peep hole at height for seated user (where no intercom provided)	Allows occupant to view visitors approaching front door	

See Part C, Section 4 for construction and detailing of doors.

2.4 Letterboxes

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	2.4.1	1.5 x 1.5m level landing forward of each	Supports people using wheeled mobility aids	
<input type="checkbox"/>	2.4.2	Offset min. 600mm from an internal corner	Allows access for a seated user, approaching from either side [Multi-sided approach]	
<input type="checkbox"/>	2.4.3	Located between 900 and 1100mm AFFL	Allows access for a seated person, with reduced bending and/or reach	
<input type="checkbox"/>	2.4.4	Locate undercover	Supports health and safety	
<input type="checkbox"/>	2.4.5	Capacity to unlock/open without physical key (e.g. pushbutton/swipe)	Improves independent control for person with limited dexterity [Dexterity]	
<input type="checkbox"/>	2.4.6	Numbering with raised (tactile) surface	Supports independent use by person with vision impairment [Sensory cues]	

2.5 External Waste Disposal

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	2.5.1	Locate waste disposal to enable easy access from a CAPT	Enhances independent access for people using wheeled mobility devices	
<input type="checkbox"/>	2.5.2	Apartment contexts – bin chute centred between 700 and 1100mm AFFL, with low-effort, non-projecting door	Enhances independent access for a seated user, with reduced strength [Assistive products]	
<input type="checkbox"/>	2.5.3	Offset waste disposal min. 600mm from any internal corner	Enhances independent access for people using wheeled mobility devices [Multi-sided approach]	
<input type="checkbox"/>	2.5.4	Minimise distance from accessible dwelling to recycling and waste disposal	Enhances independent access for people with reduced strength and/or mobility	



3. Internal Corridors and Doors

3.1 Internal Corridors – Spatial Planning

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	3.1.1	Min. clear internal width of 1.2m, measured between skirtings	-	LHA Platinum
<input type="checkbox"/>	3.1.2	Min. clear internal width of 1.5m	Compliments 1500mm x 1500mm clearance external of the front door	
<input type="checkbox"/>	3.1.3	Maximise straight corridors (minimal turns)	Minimises effort to navigate turns for people using wheeled mobility devices	
<input type="checkbox"/>	3.1.4	Maintain clearance free of equipment, fittings and fixtures (e.g. wall-mounted intercom, fire extinguishers, etc.)	Minimises chance of accidental bumping – causing injury to wheeled mobility users, or damage to property	\$
<input type="checkbox"/>	3.1.5	Maximise width of internal corridors (ideally 1800mm clear)	Enhances ease of access and turning for wheeled mobility users	

KEY



Social Inclusion



Affordability



Physical Independence



Amenity



Homelike

Value Colour Code: **Highly Desirable** | Desirable

3.2 Doors – Spatial Planning

✓	Ref.	Provision	Reason	Value
<input type="checkbox"/>	3.2.1	Doorways to rooms on the entry level used for living, dining, bedroom, bathroom, kitchen, laundry and sanitary compartment – min. clear opening width of 900mm Note: This requirement does not specifically allow for rooms on levels other than the entry level, which may still be accessible i.e. via a residential lift or stairlift. To allow for these instances and support the intent of this requirement, the provision is suggested below. Rooms used for living, dining, bedroom, bathroom, kitchen, laundry and sanitary compartment – on levels other than the entry level, but which have capacity for access via a lift or stairlift – should also have a min. clear opening width of 900mm 'Sanitary compartment' can generally be understood as referring to a powder room (stand-alone toilet)		LHA Platinum
<input type="checkbox"/>	3.2.2	Step-free transition with max. vertical tolerance of 5mm between surfaces, providing the lip is rounded or bevelled (to doors noted in previous requirement)		LHA Platinum
<input type="checkbox"/>	3.2.3	950mm minimum clear opening width doors to all habitable rooms		SDA High Support
<input type="checkbox"/>	3.2.4	Rooms used for living, dining, bedroom, bathroom, kitchen, laundry and sanitary compartment – on levels other than the entry level, but which have capacity for access via a lift or stairlift – should also have a min. clear opening width of 900mm		■ Supports LHA
<input type="checkbox"/>	3.2.5	900mm min. clear opening to all internal doors (incl. secondary bedrooms/ bathrooms/powder rooms)	Facilitates family life e.g. enables a parent with disability to visit a child's bedroom, or to access storage in a secondary bathroom	👤♿
<input type="checkbox"/>	3.2.6	Latchside clearance as per AS1428.1 (2009)	Maximises opportunity for manual control of doors (rather than requiring automation)	♿💰
<input type="checkbox"/>	3.2.7	Stagger doors slightly to avoid direct sightlines into private spaces	Enhances privacy	♿🏠

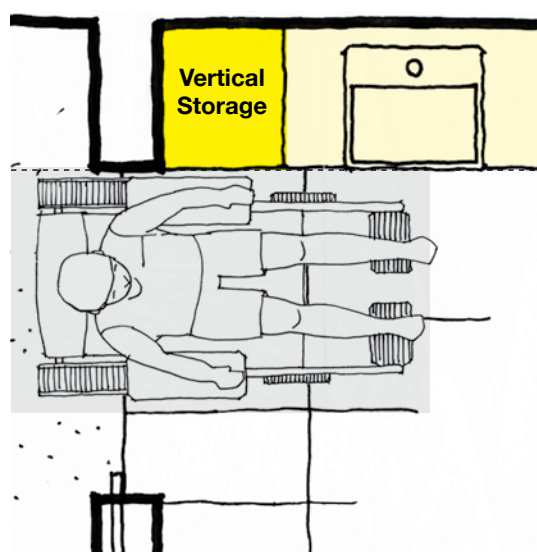
🕒 Detailed Design

Door Placement, Access and Automation

Door openings can be located to enhance access to the ends of fixed storage, for persons who require a side-approach. Extra space created by a door opening can eliminate corners, which are difficult for a person using a wheelchair to reach into.

However, if door openings are located flush to built-in features, the capacity to side approach a door handle may be lost for a seated user ("latchside clearance"). Where latchside clearance is not available, this may require a door to be automated (incurring associated costs).

To minimize the possible need for automation – this technique may be best used in contexts where space to achieve sufficient accessible fixed storage is limited.



Door openings flush with joinery for ease of side-approach

⦿ Detailed Design

Internal door operation

Hinged doors:

- offer greater acoustic properties than cavity sliding doors
- (with inward swings) limit the ease of approach and control of handle for a seated user
- require twisting of a handle, which may be difficult for some with reduced hand control **[Dexterity]**

Sliding doors:

- lack of door swing reduces obstruction
- work well in smaller areas where space to approach the door outside of the door swing is not available



Above: A horizontal handle or pull-bar on the closing face of an outward swinging door can support a person using a wheelchair in closing the door behind them. Such additional controls can be easily added to internal hinged doors as customisations for individuals, if needed.

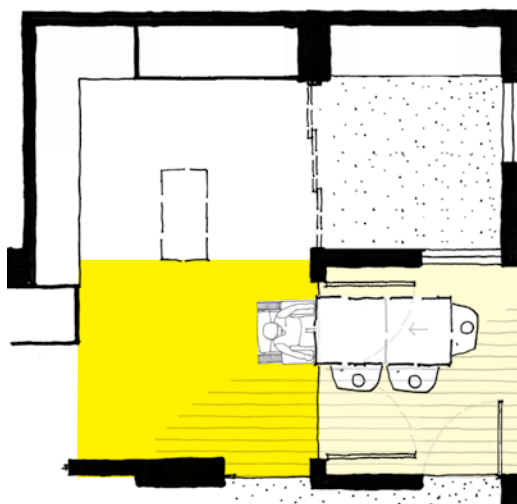
⦿ Detailed Design

Door Opening Size

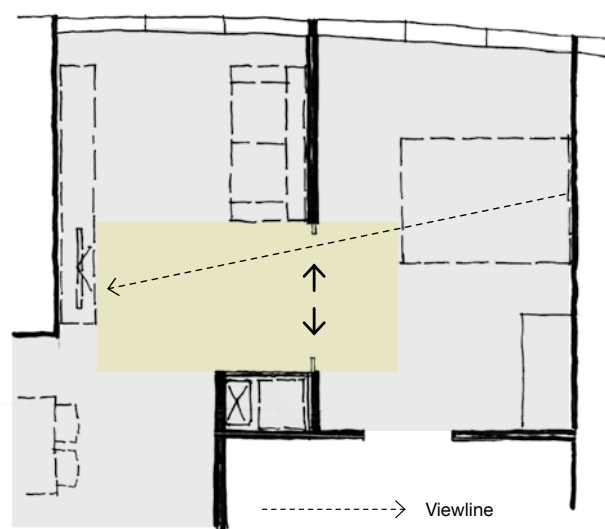
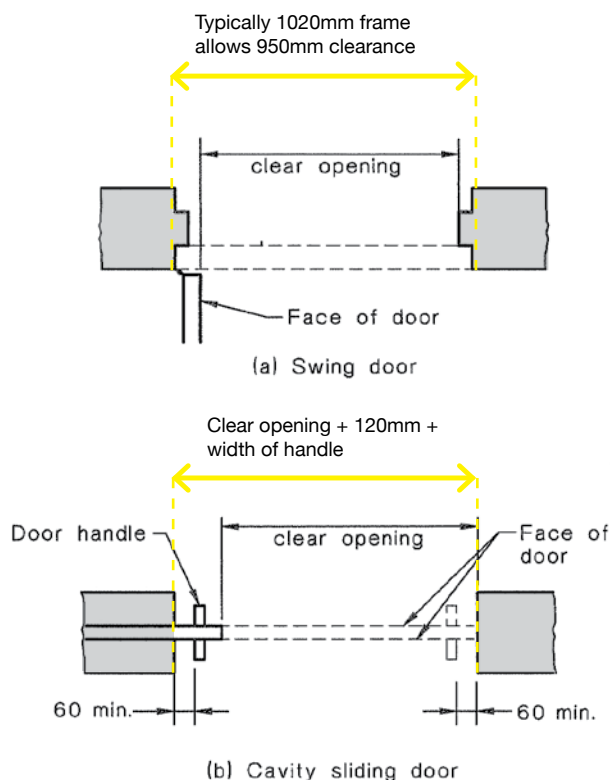
Wide doorways will provide greater ease of access for wheeled mobility users, as well as possible flexible use of space.

Where space permits – consider double leaf doors for larger openings. Note: these will incur more cost than a single door, particularly if automation to both doors is needed.

In contexts of a large door opening for flexible use of space, multiple smaller leaves will likely be easier to manually control than one larger leaf, due to reduced weight and ease to approach handles for a wheelchair user.



External Double Door Opening



Internal Double Door Opening

LEFT: Clear Door Opening Dimensions









Referenced and adapted from AS 1428.1 (2009) Figure 30 Pg. 57



4. Accessible Bedroom

Spatial Planning

4.1 Footprint

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	4.1.1	Min. 10sqm clear area exclusive of wardrobes, skirtings and wall lining	-	LHA Platinum
<input type="checkbox"/>	4.1.2	4060mm x 3030mm clear area of built-in-robe	Allows for LHA Platinum min. room dimensions	Supports LHA
<input type="checkbox"/>	4.1.3	15sqm	Allows for LHA Platinum dimensions and reasonably sized built-in-robos	  
<input type="checkbox"/>	4.1.4	Minimal room indentation	Minimises surfaces that may cause obstruction, minimising maintenance requirements over time	 
<input type="checkbox"/>	4.1.5	Larger footprint than 15sqm	Allows for the addition of a second bed if desired (e.g. to accommodate a partner)	  

KEY



Social Inclusion



Affordability



Physical Independence



Amenity

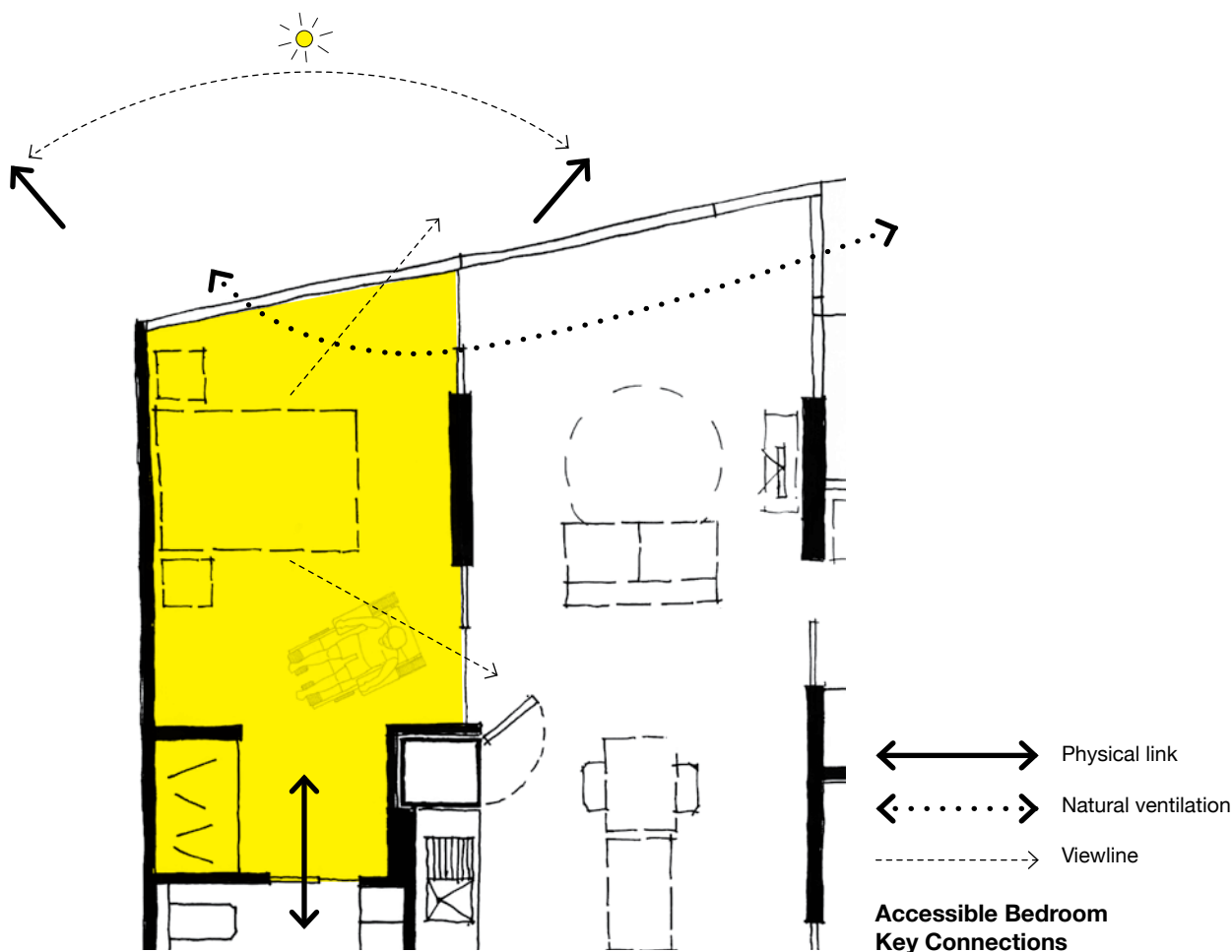


Homelike

Value Colour Code: **Highly Desirable** | Desirable

4.2 Positioning within Dwelling

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	4.2.1	Located on the ground (or entry) level		LHA Platinum
<input type="checkbox"/>	4.2.2	Direct link to accessible bathroom/ensuite	Allows private transfer, particularly if a ceiling hoist is used.	🏠 ⚙️
<input type="checkbox"/>	4.2.3	External window/skylight	Maximises access to fresh air, natural light, external views and connection with the natural environment. [Extended routines]	🏠 ⚙️
<input type="checkbox"/>	4.2.4	Located to maximise solar access and natural light	Supports passive control of internal environment, and health. [Extended routines]	\$ 🏠 ⚙️
<input type="checkbox"/>	4.2.5	No direct views from key Living Areas to bed	Provides privacy if bedroom door is left open	🏠 👤 ⚙️
<input type="checkbox"/>	4.2.6	Located to provide access to views and activity	Promotes social connectivity	🏠 ♿ ⚙️
<input type="checkbox"/>	4.2.7	Located to maximise capacity for natural ventilation	Supports user control of internal environment without use of energy	\$ 🏠 ⚙️
<input type="checkbox"/>	4.2.8	Locate away from noise sources e.g. TV or laundry	Provides acoustic privacy suitable for bedroom	🏠 ⚙️
<input type="checkbox"/>	4.2.9	External door where external egress possible	Increases options for fast egress in case of fire or health emergency	♿ ⚙️



⦿ Detailed Design

External Bedroom Door

Any door provided specifically for the purpose of providing enhanced emergency egress will ideally be an outward swinging door and handle, which opens upon pressure being applied; remaining locked from the outside but is always openable from the inside. This will support maximum ease of manual egress for an occupant or support persons.

Components

4.3 Bed - Spatial Planning

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	4.3.1	Provides for a min. path of travel of at least 1000mm on at least one side of the bed		LHA Platinum
<input type="checkbox"/>	4.3.2	Provides a space of at least 1540mm (width) x 2070mm (in the direction of travel) on the side of the bed that is closest to the door approach		LHA Platinum
<input type="checkbox"/>	4.3.3	Provides for a minimum path of travel of 1000mm on the remaining side of the bed		LHA Platinum
<input type="checkbox"/>	4.3.4	Where no bed the design should assume a queen size Note: This requirement applies to As-Built inspections, where no bed has been provided. Desktop Assessments, however, should allow for a queen-size bed. The below is suggested to meet the intent of this requirement.		LHA Platinum
<input type="checkbox"/>	4.3.5	Allows for a queen size bed 1520mm (width) x 2030mm (length)		■ Supports LHA

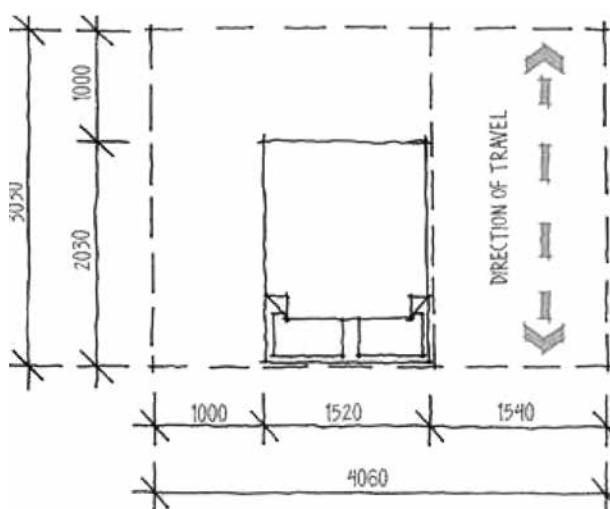


Diagram courtesy of Integrated Design Group

Excerpt from LHA Livable Housing Design Guidelines, indicating clearances around a bed. Pg. 49.

4.4 Built-in Robes – Spatial Planning

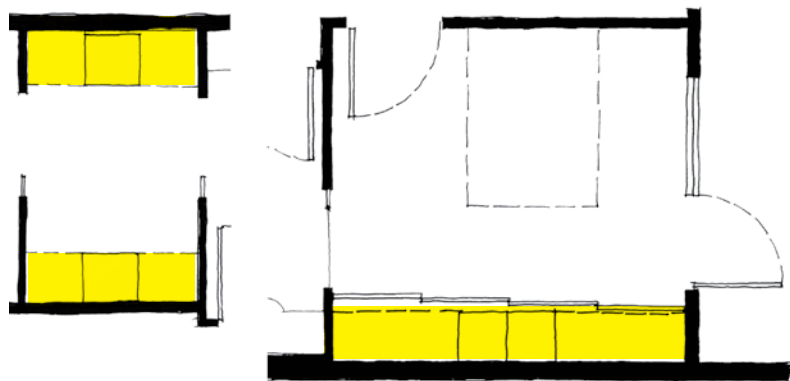
✓	Ref.	Provision	Reason	Value
<input type="checkbox"/>	4.4.1	"Linear shape", fully opening onto circulation space (see below definition)	Minimises corners, which may be less accessible for people using wheelchairs	♿
<input type="checkbox"/>	4.4.2	Min. 600mm x 1200mm full-height storage, offset min 600mm from an internal corner	Ensures min. area of storage which will support approach by a range of people [Multi-sided approach] , [Assistive products]	♿ \$
<input type="checkbox"/>	4.4.3	1550mm clearance in front of built-in robes	Allows turning circle for motorised wheelchair	♿

⦿ Detailed Design

Linear Shape Built-in Robes

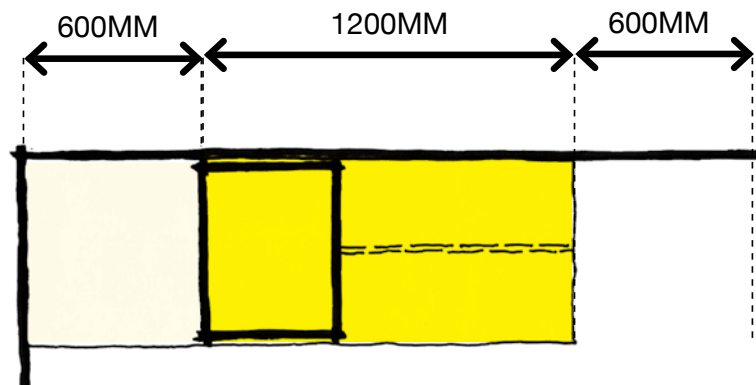
LEFT: Double galley walk-in robe, which can work well as a thoroughfare into a bathroom/ensuite. A walk-in robe may be able to double as a charging area for equipment overnight.

RIGHT: Single galley built-in robe fronting fully into a room



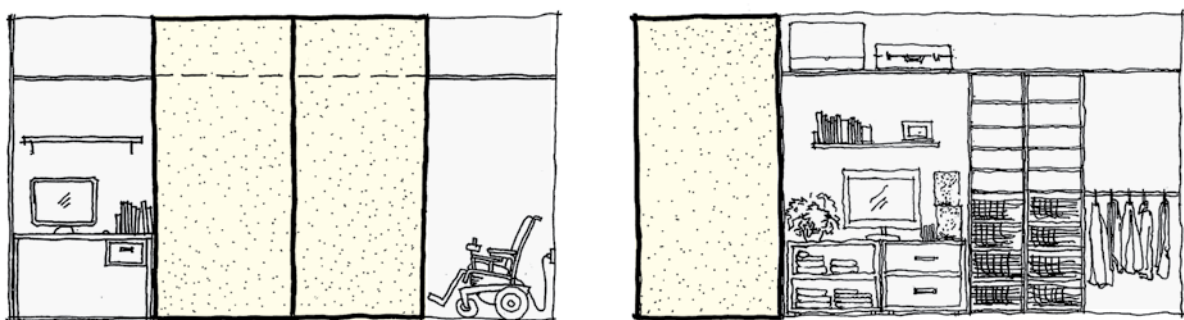
⦿ Detailed Design

Minimum Area of Accessible BIR



⦿ Detailed Design











Built-in Robe as Concealed Charging Space



A deeper full-room-width built-in robe can allow for:

- concealed storage of equipment overnight (power is needed for recharging), or
- concealed study area

4.5 Built-in Robes – Construction and Detailing

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	4.5.1	Sliding door panels	Prevents possible obstruction for wheelchair user	 
<input type="checkbox"/>	4.5.2	'Low-effort' panels	Aids independent use for person with reduced strength	 
<input type="checkbox"/>	4.5.3	Rebated floor track/guide for flush threshold, of robust construction	Enables a wheelchair user to edge into built-in robe space to better access contents, without damaging tracking	  
<input type="checkbox"/>	4.5.4	Capacity to fully stack panels to one or either side (i.e. multiple tracks as needed)	Allows flexibility to use and access built-in robe as desired	  



CLOCKWISE FROM TOP LEFT: Rebated built in robe floor guide (Mission Australia Housing (Victoria), MSM Architects, and use of multiple tracks to allow for flexible panel configuration, Hunter Housing Project.




🕒 Detailed Design

Built-in Robe 'Low Effort' Panels

Key ideal features:

- Multiple panels to reduce weight of each panel
- Lightweight/thin materials
- Low-effort gliding mechanism

4.6 Built-in Robes – Fixtures, Fittings and Equipment

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	4.6.1	Hanging rails that allow for height-adjustment	Allows customisation of height, to suit individual access needs	
<input type="checkbox"/>	4.6.2	Height-adjustable shelving to high-level in-built storage	Allows customisation of height, to suit individual access needs	
<input type="checkbox"/>	4.6.3	Drawers to low level in-built storage	Improves access to stored items for a person with reduced capacity to bend or reach	


See Part C, Section 6: Cabinetry, Shelving and Drawers for more details.







Left: Vertical tower units, with continuous flooring below, to allow repositioning if needed in future, Hunter Housing Project.

Above: Shallow drawers will better support ease of access and ease of identification of stored items (private residence).







4.7 Built-in Robes – Materials and Finishes

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	4.7.1	Lightweight lining	Reduces panel weight	
<input type="checkbox"/>	4.7.2	Durable, scuff-proof and impact-resistant panel lining	Resists wear from wheeled mobility devices, particularly where tight turning circles needed	\$

4.8 Television Zone – Spatial Planning

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	4.8.1	Zone for TV opposite bed (min. 32" flat screen)	Supports mainstream amenity, particularly for a person who may at times need more time to rest [Increased time at home]	 
<input type="checkbox"/>	4.8.2	Space for appropriate shelving/storage in TV zone	Allows for products to support use of TV	 

4.9 Mirror – Spatial Planning

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	4.9.1	Vertical mirror min. 900mm wide, from 0 to 2000mm AFFL	Supports independent dressing, for a variety of people, with ranging posture and statures	  
<input type="checkbox"/>	4.9.2	'Considered use of mirror' (see below)	Supports independent dressing, for a variety of people, with ranging posture and statures	  

🔍 Detailed Design

Use of Mirror in Bedrooms

Mirror should be used carefully in the accessible bedroom, keeping in mind the following considerations:




- Locate so as to minimise possible reflections of an occupant in bed, visible to those in shared living spaces (e.g. if the bedroom door is left open).
- A full wall of mirror opposite a bed (e.g. if used to line built-in robe panels) may be undesirable for a person who may at times spend extended periods in bed. **[Increased time at home]**



5. Accessible Bathroom/Ensuite

Spatial Planning

5.1 Footprint

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	5.1.1	7-10sqm	Two door entries (particularly with internally hinged doors) are likely to result in the larger room envelope	
<input type="checkbox"/>	5.1.2	Square shape	Centralises and condenses circulation area (maximises usable area and reduces necessary footprint)	  

KEY



Social Inclusion



Affordability



Physical Independence



Amenity

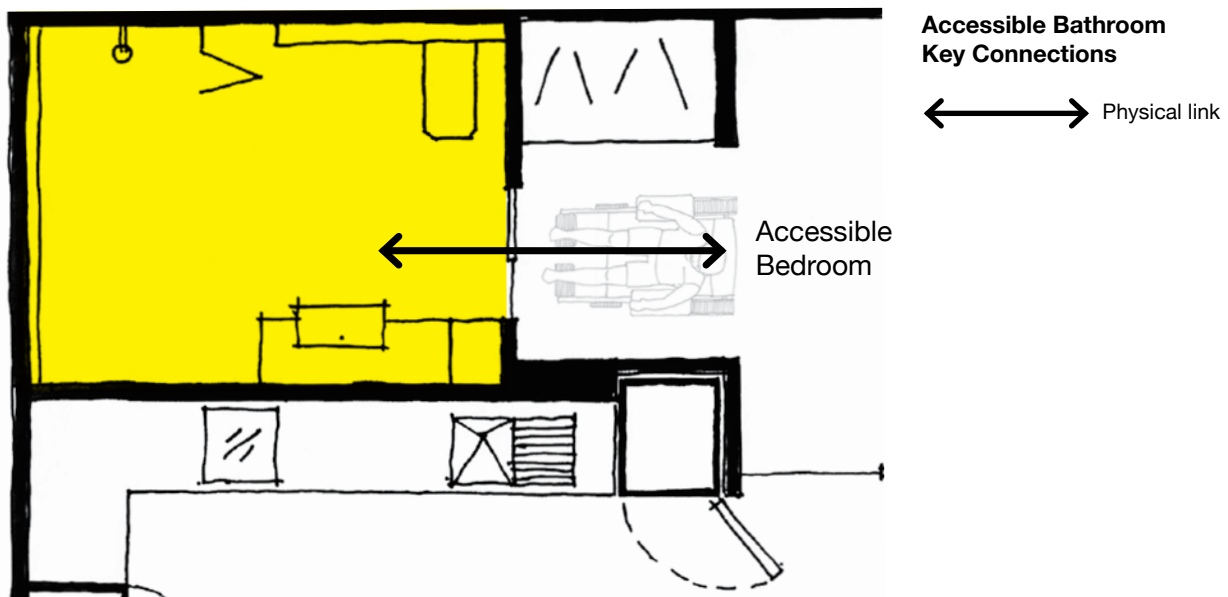


Homelike

Value Colour Code: **Highly Desirable** | Desirable

5.2 Positioning Within Dwelling

✓	Ref.	Provision	Reason	Value
<input type="checkbox"/>	5.2.1	Direct link to accessible bedroom	Allows private transfer, particularly if a person requires hoisting transfer	🏠 ⚙️ ♿
<input type="checkbox"/>	5.2.2	Link to living areas (where no secondary bathroom is provided)	Allows bathroom to be used by multiple occupants, and for use by visitors, without passing through a private bedroom	🏠 👥 ⚙️
<input type="checkbox"/>	5.2.3	No direct views from living areas, to toilet or shower space	Supports privacy if any door to a living space is opened	🏠
<input type="checkbox"/>	5.2.4	External window/skylight	Maximises access to fresh air, natural light, external views and connection with the natural environment. [Extended routines]	🏠 ⚙️

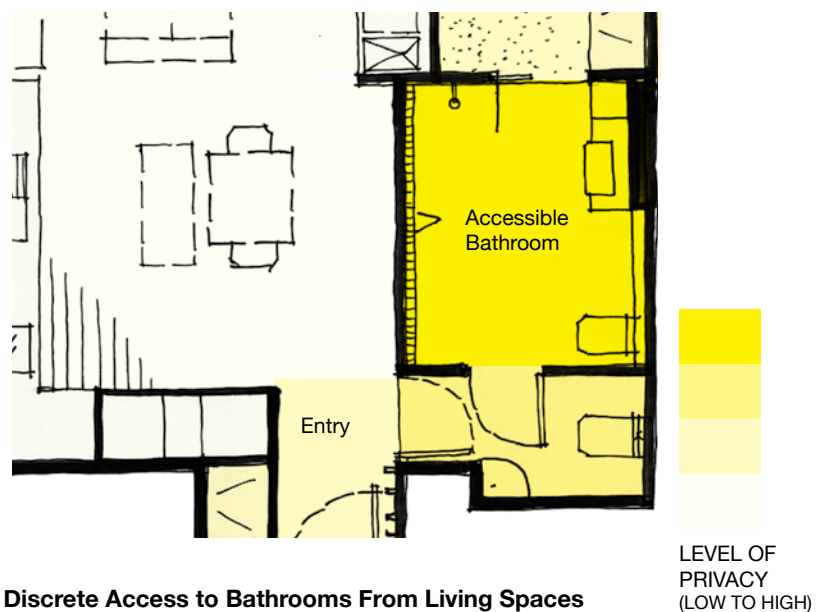


🕒 Detailed Design

Link Between Bathroom and Living

Any direct link from the accessible bathroom to shared spaces will ideally be located discretely, providing acoustic and visual privacy to the bathroom (e.g. if the door is accidentally opened).

A non-accessible powder room (if a powder room is provided) may be used as an airlock to the accessible bathroom, to enhance acoustic and visual privacy to the accessible bathroom from shared living spaces.



☉ Detailed Design

Daylight for wellness

Where an external window or skylight is not possible to achieve, similar effects are possible using solar-powered internal light panels. These mimic natural circadian patterns – transmitting light during the day and becoming dark at night.

[Outdoor connection]



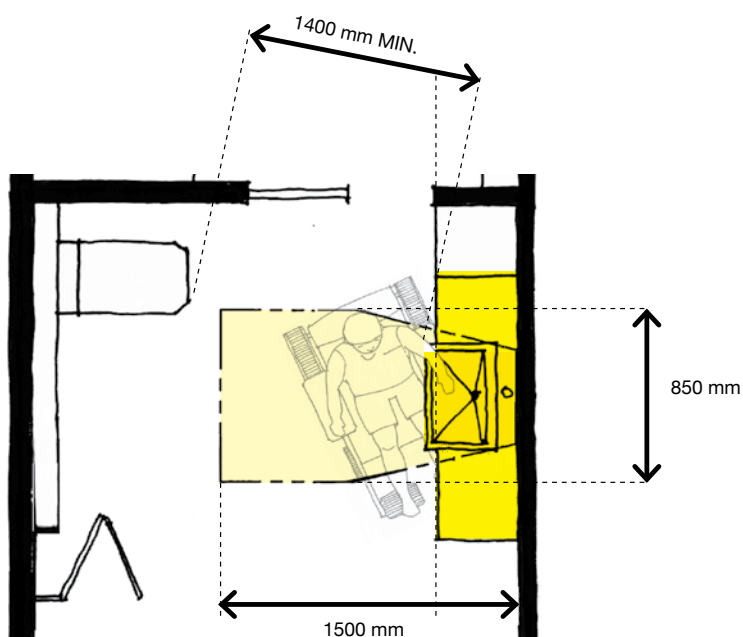
Components

5.3 Basin and Vanity – Spatial Planning


☑	Ref.	Provision	Reason	Value
<input type="checkbox"/>	5.3.1	Min. 800mm wide vanity, including basin	Provides some accessible bench space for storage of essential daily items	♿
<input type="checkbox"/>	5.3.2	Max. 500mm deep basin and vanity	Limits depth/reach required to access contents	♿
<input type="checkbox"/>	5.3.3	Next to wall units (e.g. vertical storage) – basin and vanity depth to match wall units	Flush perimeter edge avoids projecting surfaces that could cause injury/obstruct access	♿
<input type="checkbox"/>	5.3.4	Vanity and basin offset min. 600mm from internal corners	Allows sufficient space for a seated user to side-approach the vanity, from either the left or right side, as needed. [Multi-sided approach]	♿ \$
<input type="checkbox"/>	5.3.5	Capacity for clearance in front of basin and vanity as per AS 1428.1 (2009), Figure 44 (A) – Plan	Generally, allows space for 95% of people using wheelchairs to access the basin and vanity	♿
<input type="checkbox"/>	5.3.6	Capacity for min. 1400mm clearance between toilet and basin, as per AS 1428.1 (2009), Figure 43		♿

☉ Detailed Design

Basin and Vanity - Key Spatial Provisions

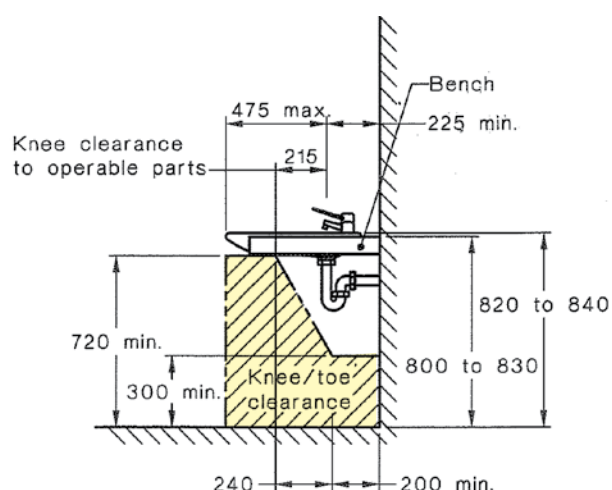


5.4 Basin and Vanity – Construction and Detailing

✓	Ref.	Provision	Reason	Value
<input type="checkbox"/>	5.4.1	Bathroom vanity/handbasin to be accessible in seated or standing position Note: NDIS Minimum Requirements do not specifically define how to achieve this requirement. The first suggestion below will support access to a range of people; seated or standing, using a range of mobility devices, of smaller or larger stature, and may be incorporated to meet this requirement. Some people may need to adjust between using the basin in a seated or standing position on a daily or infrequent basis. [Physical experience] Hence to support the intent of the requirement, the second suggestion is provided.		SDA High Support
<input type="checkbox"/>	5.4.2	Capacity for knee and foot clearance below basin, as per AS 1428.1 (2009), free of any waste pipes	Allows for majority of wheelchair users to access and use the basin	Supports SDA
<input type="checkbox"/>	5.4.3	Capacity for frequent or infrequent height adjustments, between 700-1000mm AFFL	Better allows for people of larger or smaller stature, using either small manual or large motorised mobility devices, to access and use the basin	Supports SDA
<input type="checkbox"/>	5.4.4	Insulate any exposed metal waste traps	Prevents possible injury through scalding. [Supporting safety]	



Height adjustable basin and vanity, Hunter Housing Project.



Below bench clearance, as outlined within AS 1428.1 (2009). Figure 45, pg 79.

Brief Development

Basin and Vanity Height Adjustment

- Manual adjustment – suits contexts where infrequent adjustments are needed. Achievable via the use of wall brackets and PVC waste pipes (relatively cost-effectively replaced by a plumber, to suit the new adjusted height).
- Electronic adjustment – suits contexts where frequent adjustments are needed. A safety stopping mechanism is necessary to avoid trapping or crushing of hands or legs. A flexible waste system can allow for adjustments, without needing to engage a plumber.





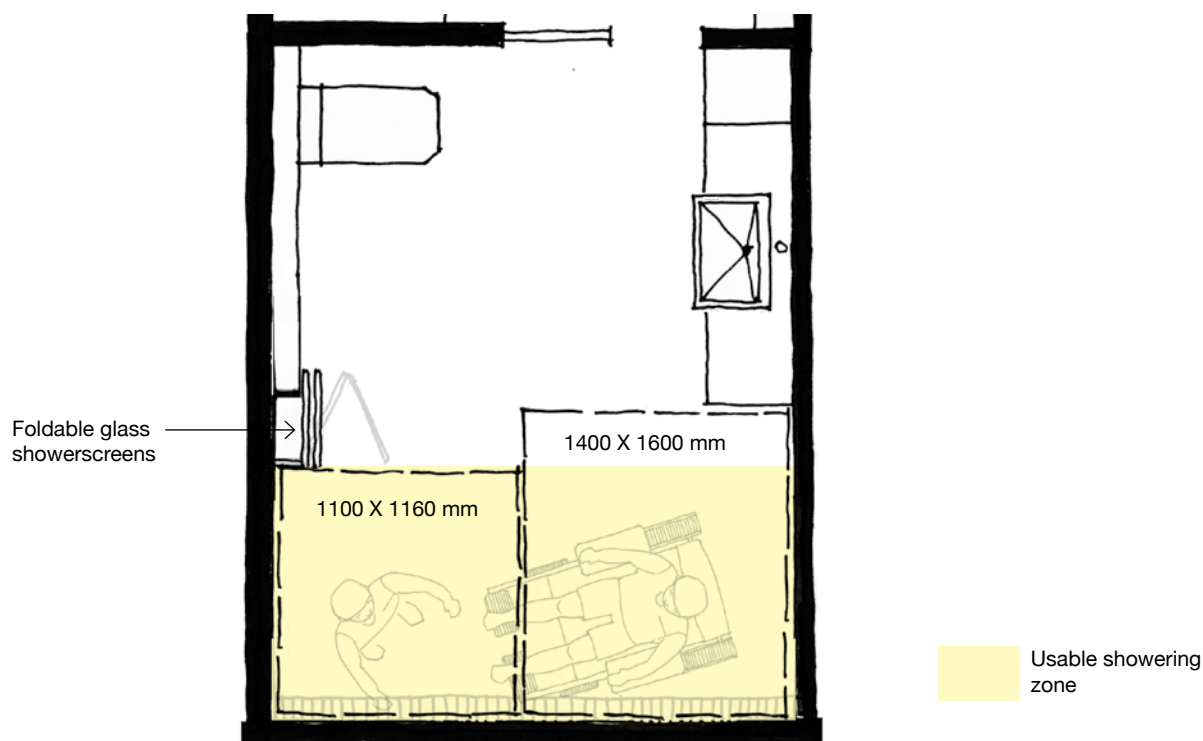
Manual height-adjustable brackets, e.g. Enware EP-RK1100



Flexi waste pipes e.g. 3m long Hepvo hose CD-FW40








5.5 Shower Space – Spatial Planning

✓	Ref.	Provision	Reason	Value
<input type="checkbox"/>	5.5.1	One bathroom should feature a hobless shower recess (any showerscreens must be easily removable in future). A level transition and threshold (maximum vertical tolerance of 5mm between abutting surfaces is allowable provided the lip is rounded or bevelled)		LHA Platinum
<input type="checkbox"/>	5.5.2	Shower recess located in a corner to enable installation of grabrails at a future date		LHA Platinum
<input type="checkbox"/>	5.5.3	Located on the entry floor level		LHA Platinum
<input type="checkbox"/>	5.5.4	Min. dimensions 1160mm x 1100mm		LHA Platinum
<input type="checkbox"/>	5.5.5	Min. clear space 1.6m x 1.4m in front of the shower entry		LHA Platinum
<input type="checkbox"/>	5.5.6	Larger shower area of 1200mm x 1800mm	Allows adequate space for a person seated in a reclined position, for manoeuvring, and for a support person to assist. [Assistive products]	
<input type="checkbox"/>	5.5.7	Locate to avoid direct sightlines between the shower and living spaces	Supports privacy, where a second door to a living space may be left open	



Shower Key Spatial Provisions

5.6 Shower Space – Location of Components

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	5.6.1	Offset shower ensemble (showerhead and mixer) min. 600mm from an internal corner, as per AS 1428.1 (2009)	Allows space for the addition of a seat adjacent to the shower ensemble, which may allow a person to shower independently	
<input type="checkbox"/>	5.6.2	Where support may also be provided, locate the shower mixer lever to the outside of the shower ensemble – rather than to the inside, as per AS 1428.1 (2009)	Allows a support person to stay dry while accessing the mixer lever, while not inhibiting independent use of mixer lever	
<input type="checkbox"/>	5.6.3	Top fixing point of shower ensemble at 1900mm AFFL		
<input type="checkbox"/>	5.6.4	Locate fixtures within showerspace to enable any screens to fold back flat against wall	Maximises circulation space and prevents damage to fixtures/screens	\$ 
<input type="checkbox"/>	5.6.5	Hose outlet located at 1050mm AFFL	Prevents the hose and head hanging in any standing water, preventing rust or accumulation of grime	\$  
<input type="checkbox"/>	5.6.6	Two shower ensembles within shower space	Additional heat source, particularly for a person showering in a reclined position, who is receiving support by others. [Increased sensitivity]	

🕒 Detailed Design

Shower Privacy

A full height nib wall (creating a 'nook') or frosted screen can enhance privacy around the shower.

Floor length shower curtains with weighted bottoms can improve circulation around the shower, but may look and feel less residential than glass shower screens.

Use of shower screens may help deter property damage, as they cannot be grabbed in the event of a slip/fall, as curtains can be. Grabrails and mobile supports should be provided within the shower as customisations for individuals who are at risk of slipping or falling when showering.

🕒 Detailed Design

Removable Shower Screens

To allow ready removal without causing damage to surfaces or waterproofing integrity, install shower screens separately, once floor surfaces are in place.







⦿ Detailed Design

Fold-down seat provision

Making provision for a fold-down seat will support an individual with reduced strength in showering more independently. Not everyone will require a seat for support – a person who showers using a shower commode will not use a shower seat at all. Allowing space only for a seat if needed can spare the cost and visual bulk of non-essential equipment. Any seats that are provided will ideally be self-draining, robust and made of warm-touch natural materials for a homelike look and feel.

5.7 Toilet Suite – Spatial Planning

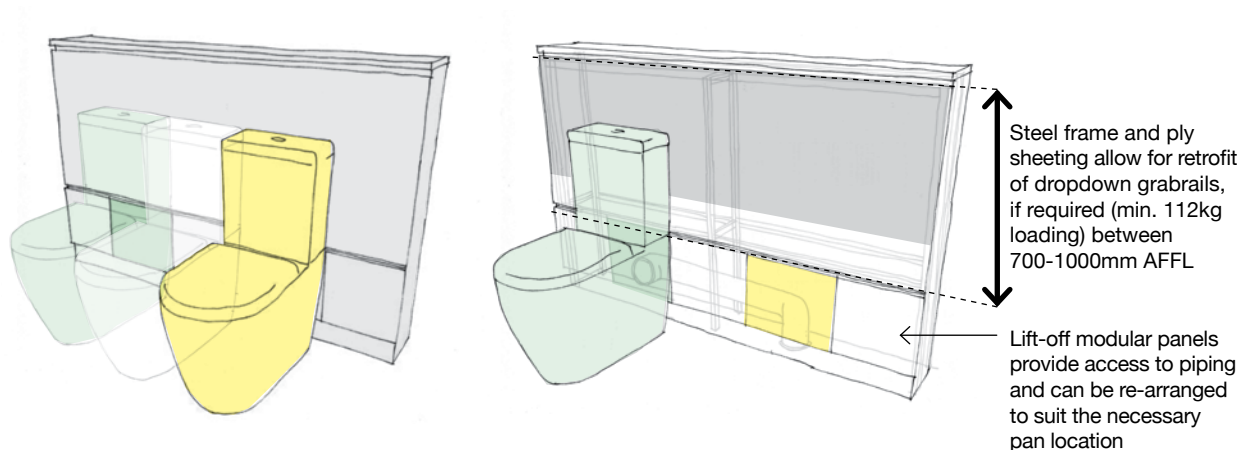
☑	Ref.	Provision	Reason	Value
<input type="checkbox"/>	5.7.1	Min. one toilet on the entry floor level. Note: This requirement does not specifically allow for a situation where residential lifts are provided, that would allow for wheelchair access between floor levels. However – providing a toilet on the same floor level as key habitable spaces will allow maximum ease access/speed to the toilet (without navigating a lift). The below provision is suggested to allow for this possible situation. The requirement does not specify the accessible toilet be located within the accessible bathroom. To allow space for a support person to assist with toileting, for use of a variety of larger mobility aids and easy transfer to the accessible shower, the below provision is suggested.		LHA Platinum
<input type="checkbox"/>	5.7.2	Min. one toilet on the same floor level as key accessible habitable spaces (accessible kitchen, living, bedroom)		■ Supports LHA
<input type="checkbox"/>	5.7.3	The toilet is located within the accessible bathroom		■ Supports LHA
<input type="checkbox"/>	5.7.4	Min. 1.2m between walls or other fixed amenities		LHA Platinum
<input type="checkbox"/>	5.7.5	Min. 1.2m clear space in front of the toilet pan, exclusive of the door swing		LHA Platinum
<input type="checkbox"/>	5.7.6	Pan positioned 450-460mm from the nearest wall, measured from the centreline of the toilet to the finished wall surface Note: Installing the pan in a corner allows capacity to install a side grabrail with vertical support (on at least one side) if needed. Locating a toilet in a corner however, will stop some people being able to side-transfer independently, if the transfer direction available does not match their preferred (stronger) side. Where an occupant's needs are not known, or may change over time, ideally, the installation will allow for relocation of the pan, to facilitate either a corner, or central position, within a 1.5m wide flexible space. The below suggestion is provided to allow for contexts where such an installation is provided.		LHA Platinum
<input type="checkbox"/>	5.7.7	Any door adjacent to the corner pan position sufficiently offset, to allow space for installation of a side grabrail if required		■ Supports LHA
<input type="checkbox"/>	5.7.8	Capacity for the pan to be positioned 450-460mm from the nearest wall, as measured from the centreline of the toilet		■ Supports LHA
<input type="checkbox"/>	5.7.9	1500mm x 1500mm clearance in front of the toilet pan, exclusive of the door swing	Enhances ease of transfer, in contexts of mobile hoists and support persons	
<input type="checkbox"/>	5.7.10	Locate to avoid direct sightlines between the toilet and any living space	Provides privacy, where a second door to a living space may be left open	
<input type="checkbox"/>	5.7.11	Easy access between shower and toilet (i.e. minimal number of manoeuvres required)	Assists a person who uses a shower commode to use both utilities	\$ 
<input type="checkbox"/>	5.7.12	Where possible, locate toilet against any concrete walls	Allows for drop-down/corner grabrails of greater strength, to cater for people of larger size (e.g. above 112kg)	\$ 

⊙ Detailed Design

Flexible Toilet Position

Flexible toilet design considerations:

- capacity to access and make adjustments to plumbing within a concealed space
- adequate structure for mounting of grabrails (wall-mounted or drop-down types)
- continuous finished floor surface within flexible zone
- minimum room clearances maintained, if pan relocated

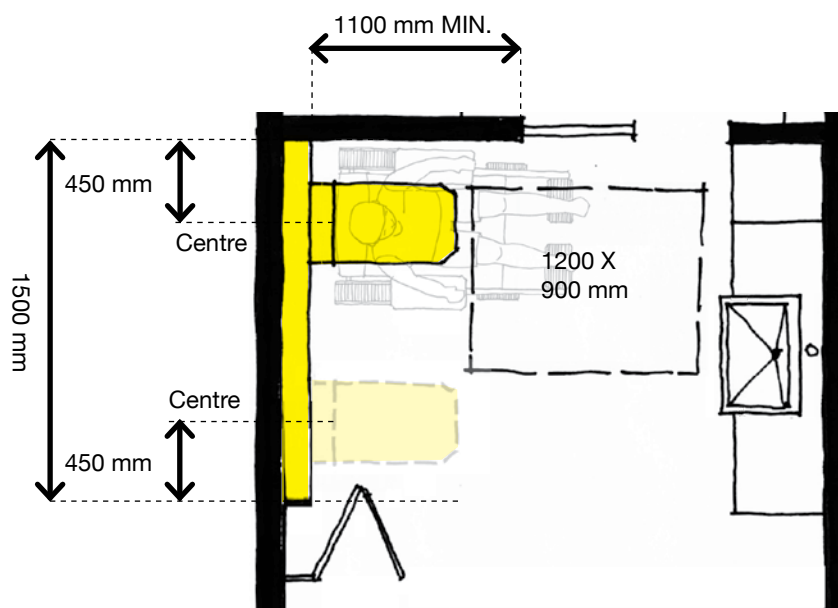


- Standard installation – likely left-sided transfer
- Central installation – possibly personal support either side
- Installation opposite – likely right-sided transfer

- Standard installation position
- Example readjusted position
- Ply reinforced zone for flexible mounting of drop-down grabrails

Flexible Toilet Wall – Toilet Installation Options

Flexible Toilet Wall – Structural Provisions



Flexible Toilet Key Spatial Provisions



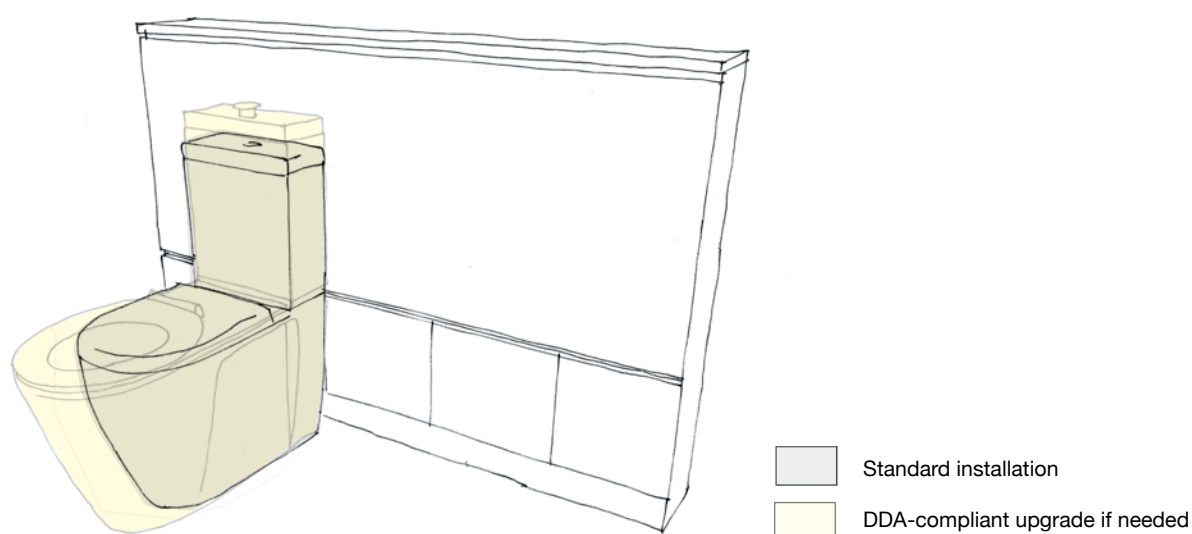
A false wall behind the toilet allows for concealment of pipes to the toilet, including additional piping, should the toilet need to be relocated in future, Hunter Housing Project.

5.8 Toilet Suite – Construction and Detailing

✓	Ref.	Provision	Value
<input type="checkbox"/>	5.8.1	<p>600mm clearance in front of the cistern to the front of the toilet pan. 800mm (+/-10mm) if cistern is recessed</p> <p>Note: This requirement allows for a commode to be rolled over the top of a pan. Some people's physical impairments will not require a commode or may mean that they do not use the toilet at all. In these instances, the cost of installing the more cost-prohibitive DDA-compliant toilet pan can be saved.</p> <p>Where an occupant's needs are not known, or may change over time, ideally, the installation will allow for replacement of the pan type (i.e. from non-compliant pan to compliant pan) – to achieve additional dimensions only if needed by the occupant.</p> <p>To allow for contexts where this flexibility is inbuilt, the below suggestion is provided.</p>	LHA Platinum
<input type="checkbox"/>	5.8.2	Capacity for alteration of pan type, to achieve 600mm clearance in front of the cistern to the front of the toilet pan. 800mm (+/-10mm) if cistern is recessed	■ Supports LHA
<input type="checkbox"/>	5.8.3	<p>Pan height between 460-480mm AFFL</p> <p>Note: This pan height may not suit all people with a range of various physical impairments, postures, statures, and using a variety of mobility aids.</p> <p>Where an occupant's needs are not known, or may change over time, ideally, the installation will allow for replacement of the pan type – to achieve dimensions that suit an individual.</p> <p>To allow for contexts where this flexibility is inbuilt, the below suggestion is provided.</p>	LHA Platinum
<input type="checkbox"/>	5.8.4	Capacity for alteration of toilet type, to achieve pan height between 460-480mm AFFL	■ Supports LHA

⦿ Detailed Design




Flexible Toilet Type



Flexible toilet design considerations:

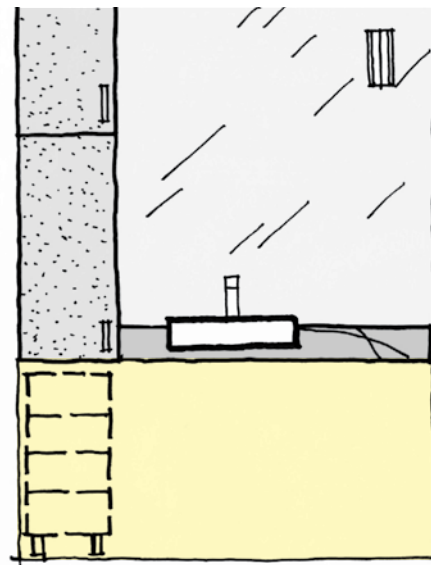
- Models with a 'P-trap' (rear waste point rather than base waste) will better allow for interchangeability between standard and DDA-compliant toilet pans.

5.9 Storage – Spatial Planning, Relationships and Positioning

✓	Ref.	Provision	Reason	Value
<input type="checkbox"/>	5.9.1	Full-height vertical storage next to the basin and vanity, with maximum depth of 450mm	Allows easy access to essential items, at a range of heights, to suit various user postures. [Reach]	
<input type="checkbox"/>	5.9.2	1m3 overhead storage	Allows for storage of infrequently used bulk items (towels, hygiene or continence equipment), which may be accessible by ambulant family members or support persons	
<input type="checkbox"/>	5.9.3	Offset storage min. 600mm from internal corners	Allows sufficient space for a seated user to side-approach the vanity, from either the left or right side, as needed. [Multi-sided approach]	

Brief Development Bathroom Storage

- Maximise storage within the vicinity of the basin
- A maximum depth of 300-450 mm will support access for all users, including those with limited reach. **[Reach]**
- Omitting joinery below vanity height may better support a (more functional) diagonal front approach for people seated in a semi-reclined position
- Mobile storage units can be easily added or removed to provide additional storage, if needed







Basin and Vanity - Elevation



Vertical and high-level Bathroom storage, Hunter Housing Project.



5.10 Shelving – Spatial Planning, Relationships and Positioning

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	5.10.1	Provide a recessed shelf (wall rebate), centrally located so as to enable a flexible side approach	Allows easy access to soaps and shampoos, while not reducing circulation space or providing an obstruction. Also reduces visual clutter	
<input type="checkbox"/>	5.10.2	Provide accessible shelving next to the toilet	Allows easy access to toileting or personal hygiene equipment	
<input type="checkbox"/>	5.10.3	Offset shelving min. 600mm from internal corners	To support independent access to stored items. [Multi-sided approach]	
<input type="checkbox"/>	5.10.4	Provide additional accessible shelving outside the showerspace	Allows for storage in a dry zone	

See Part C, Section 11: Fixtures, Fittings and Equipment for non-fixed shower shelving suggestions in addition to above.



LEFT: Rebated shower shelf located in a corner, for convenient access from a fold-down seat.

RIGHT: Rebated shower shelf with steel rod, to prevent items falling on the floor.

🕒 Detailed Design

Shower Shelving

A person with reduced upper body mobility may not be able to reach items that have fallen on the floor. Installing a stainless steel retaining rod to a rebated shelf will help to secure pump-style bottles

Allow additional depth to the rebate to allow sufficient space for the rod plus storage space



5.11 Fixtures, Fittings and Accessories

– Spatial Planning, Relationships and Positioning

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	5.11.1	Where occupant needs are unknown, locate fixed (plumbed) items as per AS 1428.1 (2009)	Likely to suit a wide number of users (minimises alteration to standard construction program)	\$ ♿
<input type="checkbox"/>	5.11.2	Where occupant needs are unknown, hold-off installing non-plumbed fixtures, or select products with suction-cap fittings, which allow re-positioning as needed	Allows for flexible positioning to suit an individual (without alteration to standard construction program)	\$ ♿
<input type="checkbox"/>	5.11.3	Provide clothing hooks at an accessible height, just outside the shower splash zone	Allows convenient access to clothing/dry items	\$

5.12 Towel Rails – Spatial Planning, Relationships and Positioning

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	5.12.1	Min. 600-900 mm towel rail space	Provides adequate space for drying wet towels	♿
<input type="checkbox"/>	5.12.2	Set back towel rails from circulation paths	Prevents bumping/injury	♿
<input type="checkbox"/>	5.12.3	Locate within close proximity to shower	Minimises splashing and potential for slips on a wet floor	♿
<input type="checkbox"/>	5.12.4	Avoid installing towel rails until preferred height of installation for an individual is known	Allows for most accessible positioning, saving cost of making adjustments	♿ \$
<input type="checkbox"/>	5.12.5	Provide heated towel rails in bathrooms without natural ventilation or an additional heat source	Assists with drying out towels. [Physical experience]	♿ 🏠

🕒 Detailed Design

Relocating Grabrails

- Provision of additional wall tiles will allow for any future rail relocation to be made good (if re-tiling is needed)
- Locating towel rails on plasterboard walls will eliminate the need for future re-tiling, if rails need to be relocated
- Where rails are located on tiled walls, to avoid the need for future re-tiling (and possibly damaging waterproof membranes), consider the addition of a 'blank-end flange', to neatly cap previous grabrail fixing points









Con-serv hygienic seal blank end flange: may be used to cover wall mounting plates once grabrails have been removed, to ensure waterproofing is not compromised.



6. Living and Dining Area

Spatial Planning

6.1 Footprint

<input checked="" type="checkbox"/>	Ref.	Provision	Value
<input type="checkbox"/>	6.1.1	The family/living room should accommodate a free space, minimum 2250mm in diameter, to enable ease of movement clear of furniture	LHA Platinum
<input type="checkbox"/>	6.1.2	One open plan space, square in shape	  
<input type="checkbox"/>	6.1.3	Approx. 25-40sqm (appropriate to number of bedrooms)	\$   

KEY



Social Inclusion



Affordability



Physical Independence



Amenity

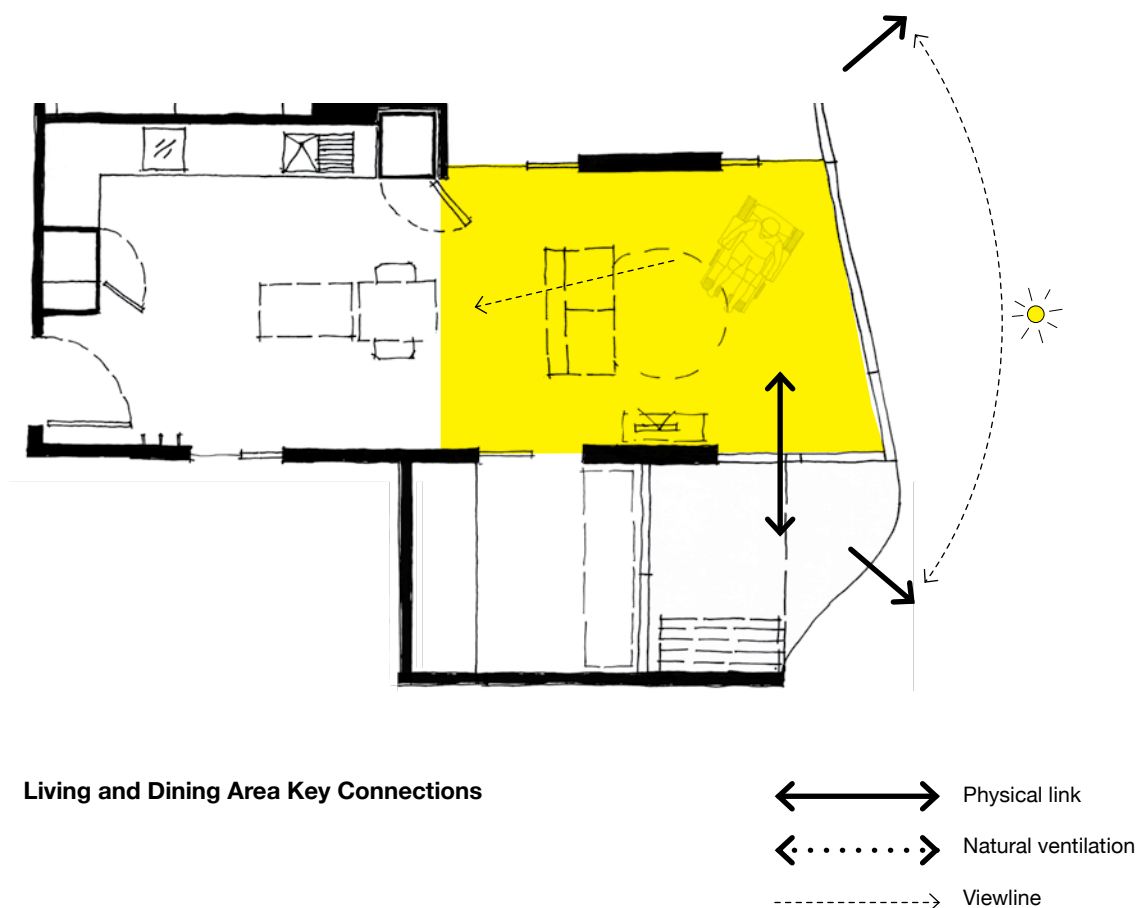


Homelike

Value Colour Code: **Highly Desirable** | Desirable

6.2 Positioning Within Dwelling

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	6.2.1	Locate to maximise solar access and natural light	Supports passive control of internal environment, and health [Outdoor connection]	\$ 🏠 ⚙️
<input type="checkbox"/>	6.2.2	Locate adjacent to external balcony or courtyard (if provided)	Supports ease of access to external space	🏠 ⚙️
<input type="checkbox"/>	6.2.3	Locate to provide sightlines to front door and/or front gate	Enhances sense of security and control, may particularly support persons with hearing impairment or reduced mobility	🏠 ⚙️
<input type="checkbox"/>	6.2.4	Locate/detail to prevent direct sightlines into bedrooms or bathrooms.	Enhances privacy	🏠 ⚙️
<input type="checkbox"/>	6.2.5	Locate to provide access to views and activity	Promotes social inclusion and connectivity	🏠 ♿ ⚙️
<input type="checkbox"/>	6.2.6	Locate to maximise capacity for natural ventilation	Supports user control of internal environment without reliance on power	\$ 🏠 ⚙️
<input type="checkbox"/>	6.2.7	Locate/detail to allow for separate zoning of living area	Enables a "private zone", where support aids and persons are unlikely to be needed	🏠 ⚙️



⦿ Detailed Design

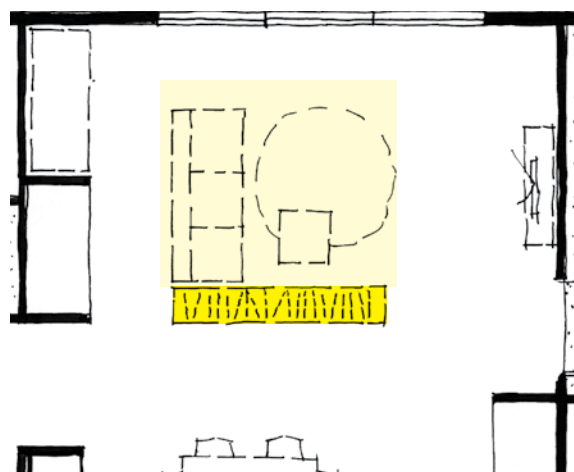
Zoning for privacy

Provision of support can impact the perception of privacy and 'ownership' within a dwelling. Support for essential tasks is generally less likely to be provided in living spaces. Enabling zoning for privacy to the living areas can allow for at least one zone to be created, which is only accessed by the occupant/s. **[Privacy]**

Zoning for privacy may be achieved through permanent, semi-permanent or highly flexible features.



Operable Walls to Create Private Zone



Flexible Furnishings to Create Private Zone

Components

6.3 Television Zone – Spatial Planning







<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	6.3.1	TV zone (min. 32-inch flatscreen) located to allow simultaneous viewing of TV and entry door	Supports sense of control for occupants with reduced mobility	🏠 ⚙️
<input type="checkbox"/>	6.3.2	Space for appropriate shelving/storage in TV zone	Reflects mainstream residential industry provisions	🏠 ⚙️



7. Kitchen

Spatial Planning

7.1 Footprint

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	7.1.1	The kitchen space should be designed to support ease of movement and adaptation with: at least 1550mm clearance in front of fixed benches and appliances (ex. handles)		LHA Platinum
<input type="checkbox"/>	7.1.2	6-7lm 'in-line' kitchen	Eliminates (less accessible) corners and maximises circulation area, for flexible configuration that suits individual needs	 
<input type="checkbox"/>	7.1.3	space for central 1200mm x 600mm mobile bench	Provides roll-under space for a person using a larger motorised wheelchair, in a reclined position	
<input type="checkbox"/>	7.1.4	Offset benchtop ends min. 600mm from corners.	Allows for a seated user to side all parts of the kitchen, using their left or right-hand side. [Multi-sided approach]	 
<input type="checkbox"/>	7.1.5	Removable cabinetry below benchtop corners	Allows for a person using a wheelchair to use benchtop corners, or a reclined person to side-access a corner feature	

KEY



Social Inclusion



Affordability



Physical Independence



Amenity



Homelike

Value Colour Code: **Highly Desirable** | Desirable

⊙ Detailed Design

Kitchen Layout

Typical kitchen layouts offer varying opportunities and challenges for people with reduced mobility.

1. Linear ('inline') Kitchens

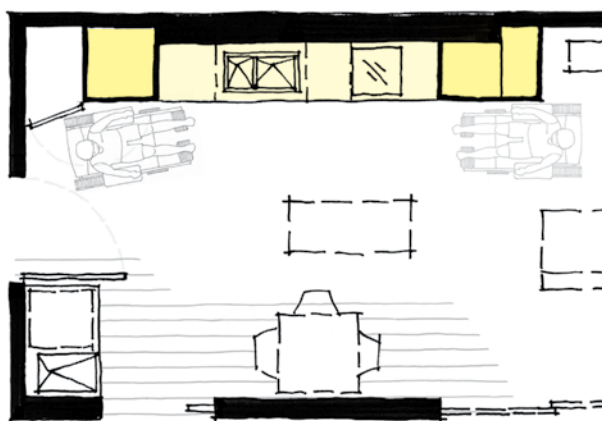
- Eliminating corners allows for fewer obstructions to use the benchtop for a person using a wheelchair
- To achieve a sufficient amount of accessible benchspace, the kitchen can be more compact than corner kitchens (more affordable)
- Can more easily be integrated into an open plan living area, with access to natural light and outlook, enhancing the amenity of the kitchen (particularly in contexts where the dwelling has one orientation only)
- Longer distances required to transfer food from one end to the other, which may require use of assistive aids for people with reduced arm strength. **[Physical experience] [Assistive products]**

2. L-shaped Kitchens

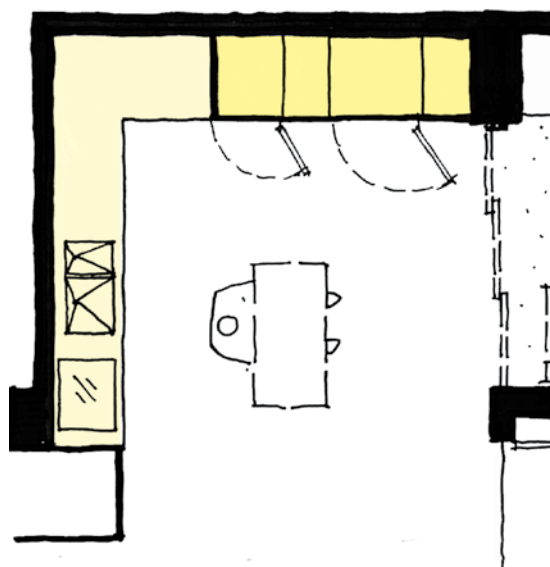
- Travel distance is reduced, assisting a person with reduced arm strength
- To be accessible, corner underbench cabinetry may need to be removed, losing storage space.

3. U-shaped kitchen (2 corners)

- Travel distance is reduced, assisting a person with reduced arm strength
- Creates a safer working space, located out of a thoroughfare
- Unless large in size, layout can limit flexible configuration of living areas and ease of movement for people using larger motorized wheelchairs
- In apartment contexts – it may be difficult to achieve desirable amenity to a U-shaped kitchen (e.g. natural light and outlook) – especially in contexts where the dwelling has one orientation only.
[Possible increased time at home]



Linear Kitchen



L-shaped Kitchen

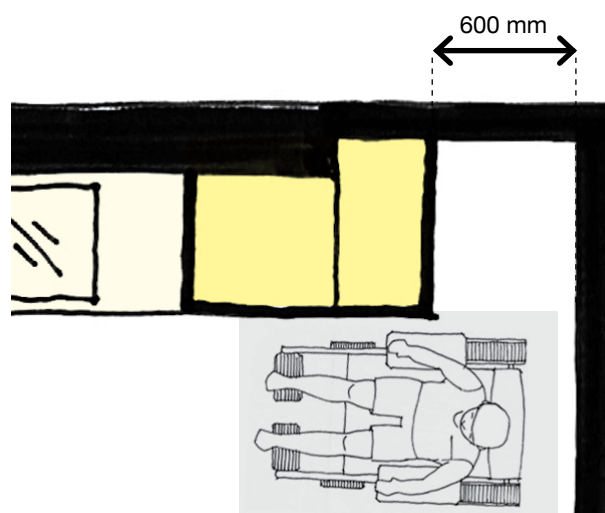
⦿ Detailed Design

Kitchen corners

Benchtop corners will be less accessible for a person using a wheelchair.

To ensure enough accessible storage space is provided to accommodate basic household items, corners should be eliminated from small kitchens.

Offsetting corners a minimum of 600mm from internal corners will support a person using larger motorized wheelchair in approaching and using all of the kitchen, including the end sections.



Elimination of Corners to Maximise Access

⦿ Detailed Design

Increased lineal dimensions to kitchen

Lineal benchtop dimensions in this section assume the kitchen design is to accommodate both a seated and standing user.

Increased lineal space is needed above standard industry norms, to compensate for loss of base cupboard storage, which is likely to be removed in order to achieve knee/foot clearance beneath key appliances for a seated person.

Increased lineal space is also needed above industry norms to accommodate an increased number of appliances, fixtures and fittings at benchtop height, which will be more accessible when seated. E.g. a wall oven instead of a low-level oven will add to the lineal dimensions needed for a kitchen.



Internal spaces will ideally accommodate an occupant as well as a person providing support, Hunter Housing Project.



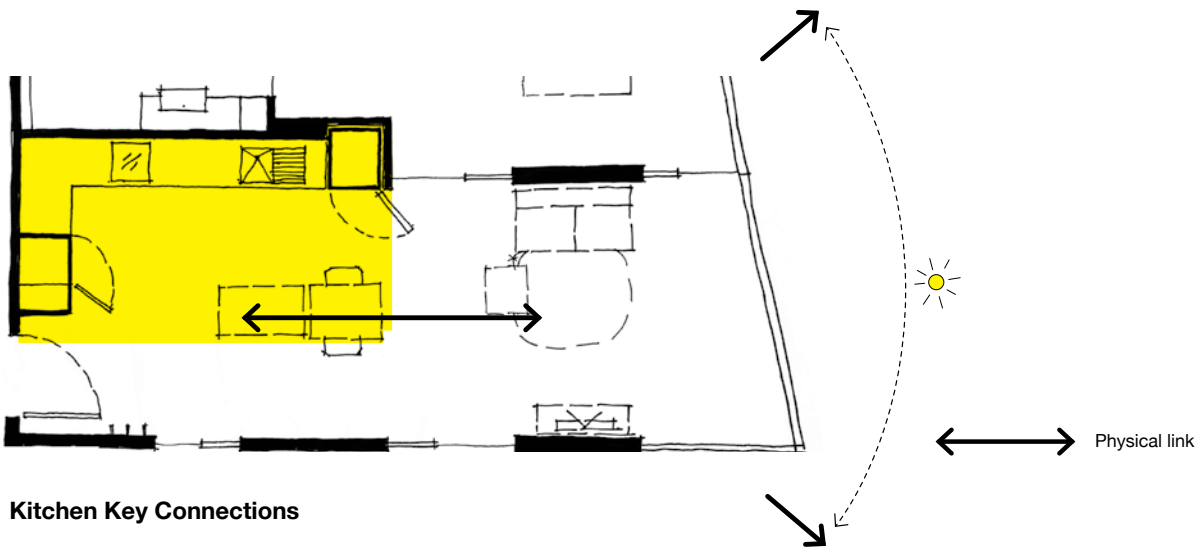
Kitchen size: In smaller dwellings or contexts where occupants are less likely to cook regularly (e.g. student or resort accommodation) – the lineal dimensions of kitchens may be reduced, to support the most essential functions only. A microwave oven with enhanced functions may replace the need for a separate oven and microwave. In small kitchens, all benchtops should be height-adjustable and of sufficient width to allow a diagonal approach, to suit a person in a semi-reclined posture.



Key functions are provided on this compact and electronic height-adjustable island bench, with accessible controls mounted to the front face. Photos provided by Royal Rehab.


7.2 Positioning Within Dwelling

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	7.2.1	Locate alongside open plan dining/living	Centralises circulation space and maximise flexibility for flexible configuration to suit individual needs and preferences	
<input type="checkbox"/>	7.2.2	Locate to maximise access to natural light	Enhances appeal of kitchen [Extended routines] and supports safety	
<input type="checkbox"/>	7.2.3	1+ bed dwellings – locate out of key thoroughfares	Supports safety, where multiple occupants cross paths	



Open-plan kitchen located adjacent to balconies, Hunter Housing Project.

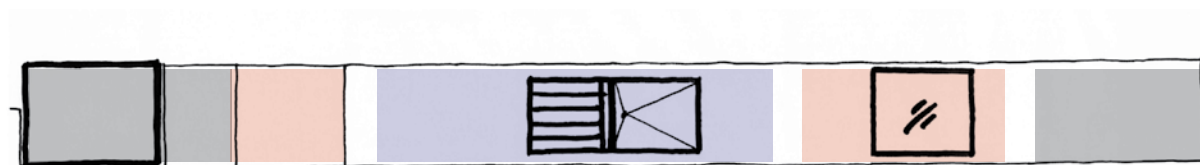
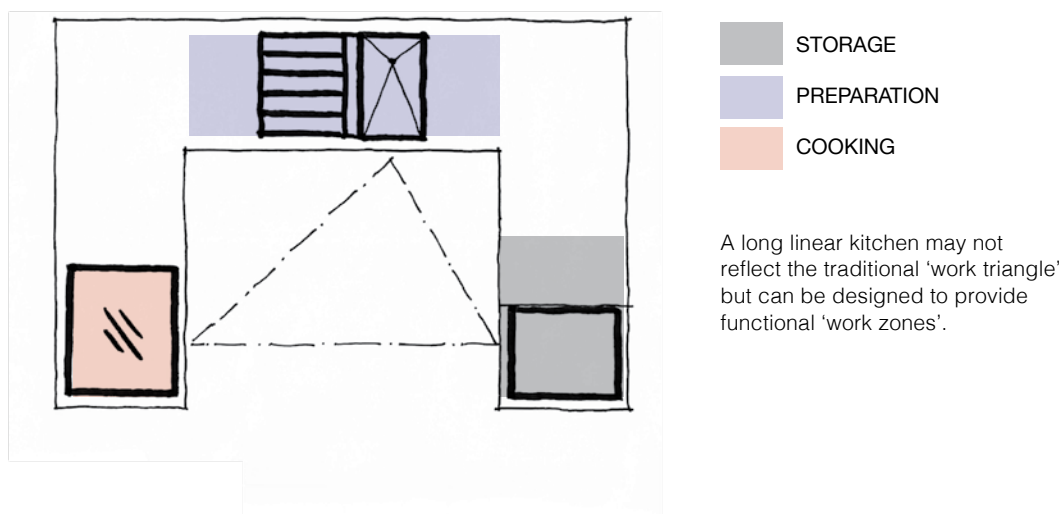
7.3 General

✓	Ref.	Provision	Reason	Value
<input type="checkbox"/>	7.3.1	Functional 'working triangle' or 'work zones'	Allows for key processes to occur with ease and maintains broad market appeal	
<input type="checkbox"/>	7.3.2	Use of modular cabinets wherever possible	Minimises cost of custom-designed cabinetry	\$

⦿ Detailed Design

'Work Triangle' or 'Work Zones'

- The work triangle involves locating the traditional key kitchen functions (sink, cooktop and fridge) within close proximity to each other, to support convenient food preparation
- Where other requirements render it difficult to achieve the traditional work triangle, functional 'work zones' may be a practical alternative
- Key work zones are needed for storage, preparation, cooking, and serving
- To allow for provision of support and/or social cooking with family, work zones will ideally be adequately spaced, to allow concurrent use of several zones



Linear kitchens better allow use by multiple people, particularly assisting those who receive support with meal preparation.

Mobile supports may be needed to transfer heavier items between cooking points.

Components

7.4 Benchtops – Spatial Planning

<input checked="" type="checkbox"/>	Ref.	Provision	Value
<input type="checkbox"/>	7.4.1	<p>Consideration must be given to whether it is appropriate for the kitchen sink, cooktop, meal preparation bench area and key appliances (dishwasher, oven, microwave oven, appliances) to be accessible in seated or standing position</p> <p>Note: This requirement does not specifically define when seated or standing access would be appropriate. Three provisions below suggest when seated and/or standing use is likely to be appropriate.</p> <p>The last suggestion is provided as a means to provide access in a seated or standing position; for people using a range of wheeled mobility devices, of varying posture and stature. [Assistive products]</p>	SDA High Support
<input type="checkbox"/>	7.4.2	An occupant at times or permanently uses a wheeled mobility device and desires to prepare meals independently. Seated access to kitchen appliances is appropriate	Supports SDA
<input type="checkbox"/>	7.4.3	An occupant at times or permanently uses a wheeled mobility device and desires to clean and maintain their home independently. Seated access to kitchen cleaning appliances is appropriate	Supports SDA
<input type="checkbox"/>	7.4.4	An occupant at times may require support by an able-bodied support person, friend or family member to carry out a task, or may live with an able-bodied family member or friend. Standing access to relevant home features is appropriate	Supports SDA
<input type="checkbox"/>	7.4.5	Capacity for knee/foot clearance below kitchen appliances (sink and cooktop), to AS 1428.1 (2009) free of any waste pipes	Supports SDA
<input type="checkbox"/>	7.4.6	Capacity for frequent or infrequent height adjustments for a benchtop between 700-1000mm AFFL	Supports SDA

⦿ Detailed Design

Below Bench Knee Clearance

Kitchens with a single linear layout will require longer travel distances to transfer food along the benchtop.

A person with reduced upper body strength may benefit from a mobile storage trolley, which can be used for transferring items from one end of the kitchen to the other. (It may also be used for additional accessible kitchen storage and as a mobile walking aid, depending on the design.)

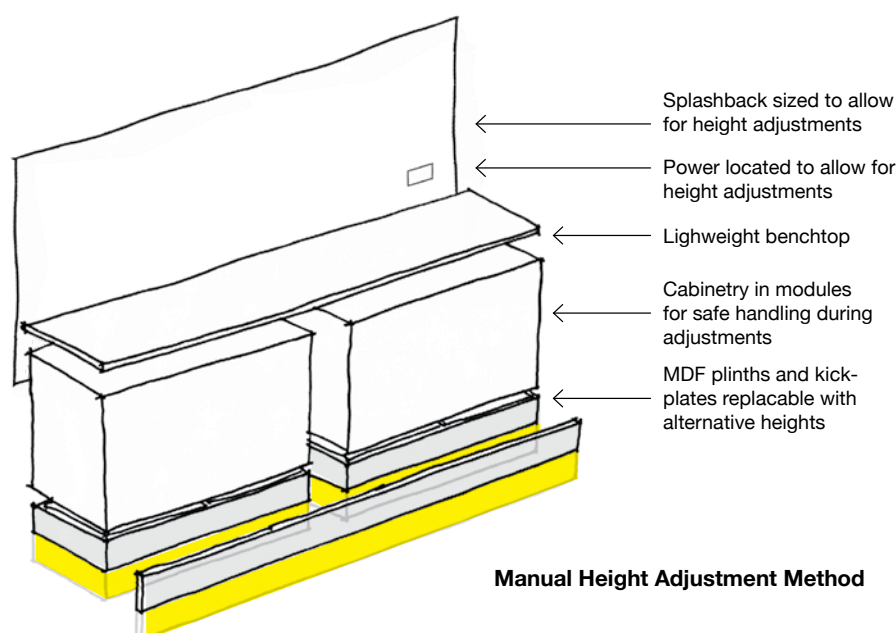
Ideally clearance zones below benches will accommodate space for such a mobile storage trolley, to allow rolling away when not in use. **[Assistive products]**

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	7.4.7	Standard benchtops to suit 600mm deep base cabinetry	Supports standard industry practice	\$
<input type="checkbox"/>	7.4.8	Next to wall units (e.g. fridges and in-built European laundries) – benchtop depth to match wall units	Flush perimeter edge avoids projecting surfaces that could cause injury/obstruct access	♿
<input type="checkbox"/>	7.4.9	Where occupant not known – standard 900mm height AFFL	Support standard industry practice and will suit most users	\$ 🏠 👥
<input type="checkbox"/>	7.4.10	Allow part of benchtop to remain at 900mm AFFL, if benchtop height adjusted in future	Better allows for support by/co-habitation with able-bodied person	⚙️ 👥

🕒 Detailed Design

Kitchen Bench Height Adjustability

- Manual - suits contexts where infrequent adjustments are needed
 - In a one-bedroom dwelling, height adjustments can reasonably be expected to be infrequent, as home features (sink, cooktop, etc.) can be installed at a height generally appropriate for the occupant
 - may be achieved via altering base plinth and kickplate heights
- Electronic – suits contexts where frequent adjustments are needed
 - In family dwellings, frequent height adjustments of key home features may be appropriate to enable use by multiple occupants with varied access needs
 - Automatic (push-button) height adjustment will more readily allow independent control for all users, but will incur additional upfront cost
 - Safety stopping mechanism to avoid trapping or crushing is necessary










🕒 Detailed Design

Space for Standing Users – 900mm High Benchtop

Given the difficulty in adjusting the benchtop height above full-sized dishwashers – the dishwasher can be designed as a permanent benchtop space for standing users, locating it at an end, so as to not prevent food being slid the length of the benchtop.

A height adjustable mobile island bench can also provide benchtop space for a person standing.

7.5 Additional Benchtop Areas – Spatial Planning

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	7.5.1	Space for optional mobile island bench (height-adjustable)	Offers capacity for roll-under bench space (for food preparation and use of appliances) – locatable where needed	
<input type="checkbox"/>	7.5.2	Three-bed dwellings: provide height-adjustable benchtop, to accommodate sink and cooktop	Enables cooking to be carried out by multiple family members (likely to have varied access abilities)	
<input type="checkbox"/>	7.5.3	Provide burn-proof tray directly beneath oven	To provide direct transfer space for a person with limited strength	
<input type="checkbox"/>	7.5.4	Pull-out chopping board – installed at benchtop height	Provides additional roll-under bench space if needed. Can also offer set-down space next to oven, cooktop or fridge, where space is limited	
<input type="checkbox"/>	7.5.5	600mm clearance either side of pull-out chopping board	Allows sufficient space for a seated user to approach the board from either the left or right-hand side as needed. [Multi-sided approach]	
<input type="checkbox"/>	7.5.6	Smaller dwellings – provide niche for island bench to be stored	Frees up greater circulation space in open plan living areas – for ease of movement when bench is not in use	
<input type="checkbox"/>	7.5.7	Where space permits – provide 600-900mm-wide screened area	Allows for concealing of appliances, reducing visual clutter	

⦿ Detailed Design

Below Oven Burn-Proof Tray

Ideal features include:

- Inclusion of a low front lip, to help stop items sliding forward (onto a wheelchair user's lap)
- Approx. 140kg loading capacity, to provide support if leant upon
- Level surface when extended
- A 'stop' function, to prevent the tray falling out (and possibly hot contents spilling onto a wheelchair user's lap)

✎ Brief Development

Additional bench space – Mobile Island

A mobile island bench provides:

- Accessible bench space for a person who uses a larger motorised wheelchair (requiring a higher benchtop) who is also seated in a semi-reclined posture (requiring roll-under space)
- additional accessible benchtop for locating a microwave – which otherwise stacked above a wall oven may be too high or below bench may be too low for a person with reduced mobility or strength. **[Reach]**
- benchtop space which can be raised/lowered to 900mm to suit a standing user, if needed



To save the cost of dedicated pull out trays a heat-resistant chopping board can be positioned above a below-bench drawer.

However, this may not be as intuitive or low-effort as a dedicated tray. In contexts where the physical and cognitive abilities of the occupant with disability are not known – providing dedicated pull-out surfaces will best support potential needs.

⦿ Detailed Design

Mobile Island Bench General Features

The mobile bench may be a custom-designed or proprietary product. Key ideal features include:

- Min. 1000mm x 600mm benchtop space
- Min. height adjustment range between approx. 720–1020mm AFFL, to suit smaller and larger motorised mobility devices, ranging statures and postures
- Pop-up powerpoint, to allow for flexible location of appliances (e.g. microwave)
- Towel rails at either end, to provide accessible hanging space (of utensils, etc.)
- Clear span, free of structure, to maximise roll under clearance for legs (from either side)
- Lockable castors, to safely secure the workarea
- Lightweight construction, to more readily allow relocation as needed

Note: Where positioning next to a wall DGPO is provided, the pop-up power point can be omitted (reducing cost).

A welded steel frame will help achieve a clear span, free of framing, as well as provide additional strength if the bench is used as a support, preventing bowing and lengthening the life of the bench.



Mobile island bench raised to highest position, Hunter Housing Project.

⦿ Detailed Design

Mobile Island Bench Height Adjustment

- Manual - suits contexts where infrequent adjustments are needed
 - More cost-effective option than automated type
 - Removable/non-protruding manual winder, to avoid injury through accidental knocking
- Electronic – suits contexts where frequent adjustments are needed
 - Automatic (push-button) height adjustment will more readily allow independent control for all users, but will incur additional upfront cost
 - Safety stopping mechanism to avoid trapping or crushing is necessary

7.6 Splash Backs – Spatial Planning

✓	Ref.	Provision	Reason	Value
<input type="checkbox"/>	7.6.1	Extend from 700mm AFFL upwards	Allows for lowering of benchtop to 700mm AFFL if needed, without splashback modifications	\$

7.7 General Appliances – Spatial Planning

✓	Ref.	Provision	Reason	Value
<input type="checkbox"/>	7.7.1	Appliance controls located between 700-1200mm AFFL, to support use by a person in a seated position		Supports SDA

7.8 Fridge – Spatial Planning

✓	Ref.	Provision	Reason	Value
<input type="checkbox"/>	7.8.1	900mm wide cavity to fit min. 800mm wide fridge	Allows flexibility to provide smaller or larger fridge	
<input type="checkbox"/>	7.8.2	Offset min. 600mm from internal corner	Allows for a seated user to side approach the fridge from left or right. [Multi-sided approach] . Also allows for full opening of fridge door(s)	
<input type="checkbox"/>	7.8.3	Min. 400mm set-down space next to fridge (on non-hinging side)	Reduces lifting required, making transfer for people with limited strength easier	

⦿ Detailed Design

Integrated Fridges

Integrated fridges offer a number of benefits and drawbacks for accessible housing:

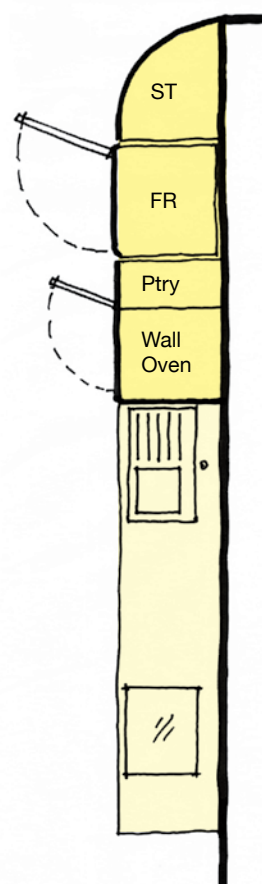
- + Where space is limited, an integrated fridge can fit into smaller spaces
- will add more cost
- will limit flexibility to adjust door hinging direction once installed
- will limit flexibility to adjust height of internal shelving once installed
- will prevent occupant in bringing their own fridge

⦿ Detailed Design

Fridge Location



Ideally a set down space will be provided directly next to the fridge, to allow easy transfer to the benchtop, with minimal lifting.

Where set-down space is limited within a kitchen, priority to wall ovens and cooktops is recommended, as very hot food is more likely to impact on safety than transfer of cold food.



Kitchens with Limited Benchtop Setdown Space

7.9 Pantry – Spatial Planning

☑	Ref.	Provision	Reason	Value
<input type="checkbox"/>	7.9.1	Allow shallow pantry storage appropriate to size of dwelling	Improves reach to stored items	
<input type="checkbox"/>	7.9.2	Offset pantry min. 600mm from internal corners	Allows for a seated user to side approach the fridge from left or right. [Multi-sided approach]	

🕒 Detailed Design

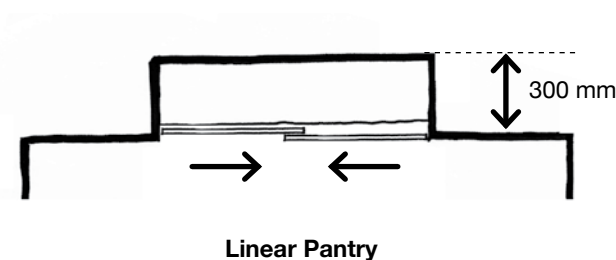
Pull-out Pantry

- Pull-out pantries provide the benefit of allowing access to items stored at the rear for those with limited reach. **[Reach]**
- Provide pantry proportionate to the number of occupants. E.g. minimum:
 - equivalent of one 300mm-wide full-height pantry (one and two-bedroom dwellings)
 - equivalent of one 500mm-wide full-height pantry (three-bedroom dwellings)
- Where space permits, consider x2 separate half-height pull-out pantries, which may be located in a more accessible position for a seated user, as well as break up possible weight of the pull-out unit.
- Where stacking x2 separate pantries vertically, take care to locate so these are not likely to knock the head of a seated user, when opened.
- Provide a power point, to enable addition of plug in motor for automatic opening, if needed.



Linear Pantry


- A shallow linear pantry can fill in room indentation, to create a flush (obstruction-free) internal perimeter. Recommended features of a linear pantry include:
 - max. 300mm deep shelving **[Reach]**
 - sliding door panels, which can fully stack to either side
 - sliding door panels, that allow for low-level drawers to fully extend when open






Walk-in Pantry

- Pull-out pantries will be the most space-efficient way to offer high levels of access to stored items
- Any walk-in pantry:
 - 1200mm x 1200mm internal clearance (LHA Platinum)
 - 900mm clear opening width (LHA Platinum)
 - Shallow shelving 300mm deep

7.10 Sink – Spatial Planning

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	7.10.1	Min. one bowl and drainer	Improved drainage to benchtop and reduced maintenance	\$
<input type="checkbox"/>	7.10.2	In three-bedroom dwellings, locate within a benchtop section capable of frequent height adjustment	Enables use by multiple family members (likely to have varied access abilities)	

7.11 Sink and Mixer – Construction and Detailing

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	7.11.1	Capacity for knee/foot clearance below sink to AS 1428.1 (2009) free of any waste pipes		 Supports SDA
<input type="checkbox"/>	7.11.2	Capacity to suit altered benchtop height	Allows for raising or lowering of benchtop with minimal or no modification to sink	\$
<input type="checkbox"/>	7.11.3	Locate sink close to benchtop edge	Minimises reach required	
<input type="checkbox"/>	7.11.4	Locate mixer behind sink	Standard installation as per industry practice	\$ 

🔍 Detailed Design

Sink Mixer Location

- A swivel-arm mixer located to the side of the bowl will reduce reach to the tap control and enable items to be positioned below the tap (e.g. pots/kettle)
- Depending on its location, a side-mounted mixer may form an obstruction for a person with reduced arm strength by limiting the capacity to slide items from the sink along the bench
- Ideally, the benchtop material will allow for alterations to the mixer location, if essential for an occupant (i.e. be of a material that readily enables cutting new penetrations, such as a laminate benchtop.)

🔍 Detailed Design

Width of Below-Bench Clearance Zones

- A below-sink, below-cooktop and below-bench clearance of min. 800mm wide will accommodate a standard-sized, manual wheelchair – but 1000mm will maximise ease of maneuverability for people using a range of wheelchairs **[Assistive products]**







⦿ Detailed Design

Detailing Below Sinks

- Set waste trap as close to the rear wall as possible, to maximise below sink clearance.
- Consider appropriate colouring of exposed PVC pipes or shrouding, to conceal pipes (Remember any shrouding will need to be resized/refitted if benchtop heights are adjusted.)
- A flexible waste can accommodate changes in benchtop height without the cost of modifications
- A PVC waste can be replaced materially at low cost but requires the labour of a plumber



7.12 Wall Oven – Spatial Planning

✓	Ref.	Provision	Reason	Value
<input type="checkbox"/>	7.12.1	Side-opening wall-oven	Enables access by greatest number of users (no reaching over a low-level door and no bending needed)	
<input type="checkbox"/>	7.12.2	Where occupant is unknown, install at 800mm AFFL	Allows for use by persons of smaller or larger stature, using smaller/larger wheelchairs	
<input type="checkbox"/>	7.12.3	Where occupant is known, install whereby the bottom shelf is equal in height to the adjacent benchtop	Supports ease of transfer between oven and benchtop	
<input type="checkbox"/>	7.12.4	Offset min. 600mm from internal corners	Allows for a seated user to side approach the oven from left or right. [Multi-sided approach]	
<input type="checkbox"/>	7.12.5	Locate directly next to min. 400mm setdown area on the bench (door hinge on opposite side)	Reduces amount of lifting needed, making transfer for people with limited strength easier	
<input type="checkbox"/>	7.12.6	Capacity for "knee/foot clearance next to oven" (See below)	Allows a seated person to approach the oven more closely (i.e. on the diagonal, rather than from the side)	 Supports SDA

Brief Development

Oven door operation

A "slide and hide" oven will allow a person to side approach from either the left or the right-hand side – offering greater flexibility over time than a side-hinging oven. **[Multi-sided approach]**




However a person with limited reach and or strength may have difficult in pulling the door downwards fully, or pushing the door into the cavity, due to the reach required.

A well-located side-opening oven is likely to suit the greatest number of users, given little reach is needed to control the door. **[Reach]**




Left: Side-hinging oven with pull-out heatproof tray below.
Right: Neff Slide and Hide oven.

7.13 Cooktop – Spatial Planning

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	7.13.1	Capacity for knee/foot clearance below sink to AS 1428.1 (2009)		Supports SDA
<input type="checkbox"/>	7.13.2	Offset min. 600mm from internal corners	Allows for a seated user to approach and use the cooktop from left or right. [Multi-sided approach]	
	7.13.3	Min. 400mm set-down space next to cooktop	Reduces lifting, making transfer for people with limited strength easier	
	7.13.4	Maintain min. vertical clearance – for benchtop 700-1000mm height AFFL	Allows for benchtop height adjustments without requiring alterations to the rangehood (or combustible cabinetry overhead cooktop)	

7.14 Cooktop – Construction and Detailing

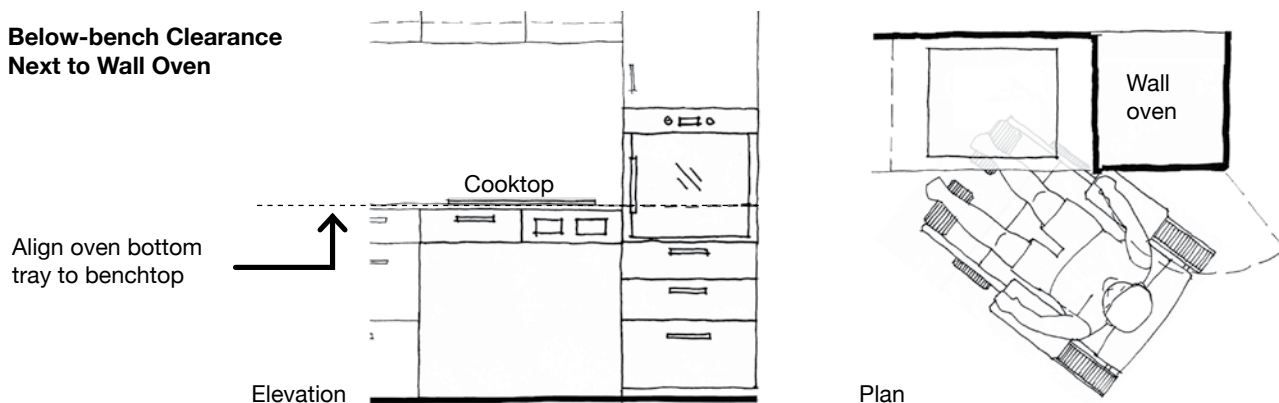
<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	7.14.1	Insulate below cooktop	Prevents possible injury or property damage	

⦿ Detailed Design

Below-bench clearance next to oven

Below-bench clearance next to the oven can efficiently be achieved by locating the cooktop next to the wall oven (with a 400mm offset in between, as the set-down space). This allows a person using a wheelchair to approach the oven diagonally, which is more ergonomic (and safe) than approaching on the side.

Below-bench Clearance Next to Wall Oven




⦿ Detailed Design






Rangehood Installation

Take care to install the rangehood at a height that allows for future height adjustments to the benchtop, e.g. if the benchtop is raised in future, minimum vertical clearances between cooktop and cabinetry around the rangehood will still be maintained.





7.15 Rangehood – Spatial Planning

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	7.15.1	Vent externally	Ensures effective removal of grease and smells	
<input type="checkbox"/>	7.15.2	Installation height to suit varied benchtop height between 700-1000mm AFFL	Allows for benchtop height adjustments without requiring alterations to the rangehood (or combustible cabinetry overhead cooktop)	\$

7.16 Microwave – Spatial Planning

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	7.16.1	Allocate space at benchtop height	Enables safety and ease of access for greatest number of users	
<input type="checkbox"/>	7.16.2	Allow for loose model (not fixed)	Increased flexibility to reposition as needed	
<input type="checkbox"/>	7.16.3	Offset min. 600mm from internal corners	Allows for a seated user to side approach the microwave from left or right. [Multi-sided approach]	
<input type="checkbox"/>	7.16.4	Provide min. 400mm benchtop space adjacent (opposite door hinging side)	Minimises lifting needed, to support people with limited strength	
<input type="checkbox"/>	7.16.5	Capacity for knee-clearance below	Improves access and reach for seated users	

7.17 Dishwasher – Spatial Planning

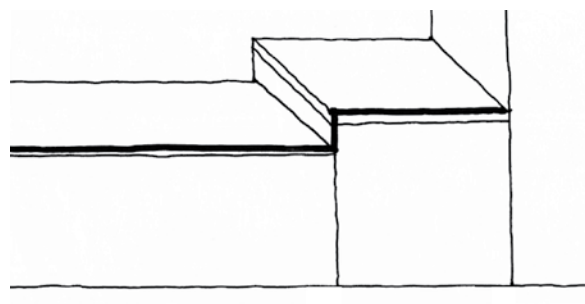
<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	7.17.1	Single or dual pull-out drawer type, depending on number of occupants	Reduces bending and reach to access contents	
<input type="checkbox"/>	7.17.2	Location at benchtop height	Enables access by greatest number of users	
<input type="checkbox"/>	7.17.3	Single or dual pull-out drawer type, depending on number of occupants	Reduces bending and reach to access contents	
<input type="checkbox"/>	7.17.4	Location at benchtop height	Enables access by greatest number of users	

🔍 Detailed Design




Dishwasher location

Where full-sized dishwashers are included – locate these where a change in benchtop height would cause minimal obstruction to work zones.




Location of Full-height Appliances



7.18 Bins – Spatial Planning

✓	Ref.	Provision	Reason	Value
<input type="checkbox"/>	7.18.1	Pull-out double bin below benchtop height	Provides easy access to hygienic separate waste and recycling in a single motion	
<input type="checkbox"/>	7.18.2	Close proximity to sink	Enables easy waste disposal with few motions	
<input type="checkbox"/>	7.18.3	Offset min. 600mm from internal corners	Allows sufficient space for a seated user to approach bins from either the left or right-hand side as needed. [Multi-sided approach]	

7.19 Essential Kitchen Storage – Spatial Planning

✓	Ref.	Provision	Reason	Value
<input type="checkbox"/>	7.19.1	Allow min. one bank of 600mm-wide drawers	Ensures some built-in storage is available for basic cutlery, crockery and cups	
<input type="checkbox"/>	7.19.2	Locate drawers close to sink and dishwasher	Reduces motions needed to pack up	
<input type="checkbox"/>	7.19.3	Min. 900mm-wide overhead lowerable storage	Enhances access to stored items for a seated person	

🕒 Detailed Design

Overhead Lowerable Storage

- The detailed design of storage will depend on budget and the space available
- With all lowerable overhead storage, ensure minimum clearances are retained for benchtop fixtures (such as tapware) and any appliances stored on the benchtop (such as a toaster, kettle or microwave, etc.)
- Ensure inbuilt rangehoods or other fixed services are kept clear of lowerable storage



Manual pull-down type

Ideal features:

- low effort
- little reaching required
- high tolerance for error

Note: it is important to check the strength required to use such systems before specifying.



Height-adjustable type (manual or electronic)

Any type of electronic height adjustment componentry must incorporate a safety stopping mechanism to avoid trapping or crushing.

Electronic systems will incur the most upfront cost.

ABOVE: Ropox push-button operated electronic height adjustable overhead shelving.



Adaptable type

- Open shelving units, which can be readily lowered and re-fixed at an appropriate height on an infrequent basis, to suit an occupant's needs









Above: Overhead open shelving, height adjustable on an infrequent basis. Mission Australia (Victoria) housing, MSM Architects.



8. Secondary Bedrooms

Spatial Planning

8.1 Footprint

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	8.1.1	6-15sqm (each bedroom)	Size range depends upon the use of bedrooms and total number of occupants	   
<input type="checkbox"/>	8.1.2	Square in shape	Supports flexible use of space to accommodate a range of functions	   

KEY



Social Inclusion



Affordability



Physical Independence



Amenity



Homelike

Value Colour Code: **Highly Desirable** | Desirable

Brief Development

Secondary Bedroom Size

Minimum provisions for secondary bedrooms vary, whether seeking LHA design certification alone, or SDA design certification (incorporating LHA certification).

LHA Design Guidelines do not specifically outline provisions for secondary bedrooms and the interpretation of an appropriate design response may depend on the assessment of an individual LHA assessor.

For dwellings where SDA certification is required, reference should be made to current SDA policy for advice on minimum requirements for second bedrooms.

Brief Development

Secondary Bedroom Configuration

Secondary bedrooms may be smaller or larger, dedicated or more flexible spaces.

The design will depend upon the number of occupants to be permanently housed within the dwelling.

Flexible spaces offer capacity to allow different living configurations, to suit a person at different life stages.

A variety of different approaches to the design of secondary bedrooms is provided below:



68 sqm

6-10 sqm



99 sqm

Min. 3X3 sqm clear of BIR

1. Small Flexible Space Adjoining Living Areas

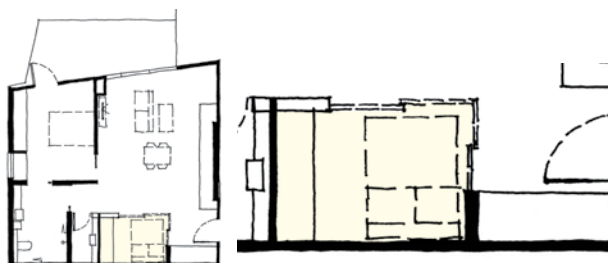
May be closed off if desired, to form a private study, exercise space, storage area or overnight stay for visiting family or friends. **[Physical experience]**

[Assistive products]

Approx. 6-10sqm

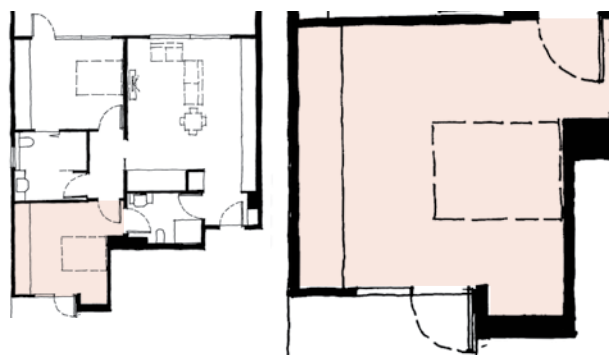
2. Dedicated Standard Bedroom

Min. 3m x 3m area, clear of built-in robes



72 sqm

6-10 sqm



107 sqm

Approx. 15 sqm

3. Flexible Space Within Larger Living Areas

Larger part of the living area

May be zoned off occasionally to allow overnight stay for friends or family when needed

Approx. 6-10sqm




4. Dedicated LHA Platinum Bedroom

Dedicated bedroom, with specifications as outlined in this guide




Approx. 15sqm, including built-in robe

Components





8.2 Television Zone

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	8.2.1	In dedicated bedrooms – provide as per main accessible bedroom	Supports shared living, by providing a second living area for privacy of a second occupant	  




8.3 Built-in Robes – Spatial Planning

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	8.3.1	Min. 1200mm x 600mm built-in-robe	Supports mainstream expectations.	 
<input type="checkbox"/>	8.3.2	Offset min. 600mm from internal corners	Supports access to contents, if approaching from either side. [Multi-sided approach]	

8.4 Built in Robes – Construction and Detailing

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	8.4.1	Sliding door panels	Prevents possible obstruction for a person using a wheelchair	 
<input type="checkbox"/>	8.4.2	'Low-effort' panels	Aids independent use for person with reduced strength	 

8.5 Built-in Desks (if provided)




<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	8.5.1	800mm height AFFL, adjustable between 700-1000mm AFFL	Allows for customisation to suit changing user needs	  



9. Second Bathroom/Powder Room

Spatial Planning

9.1 Footprint – Powder Room

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	9.1.1	Powder room – min. 2sqm	Allows for toilet and vanity basin	 
<input type="checkbox"/>	9.1.2	Min. clear width 900mm	Reflects LHA Platinum Level requirements	 Supports LHA

KEY



Social Inclusion



Affordability



Physical Independence







Amenity









Homelike

Value Colour Code: **Highly Desirable** | Desirable

9.2 Footprint – Second Bathroom




<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	9.2.1	Min. 4 sqm.	Allows for toilet, vanity basin and shower	 
<input type="checkbox"/>	9.2.2	Min. clear width 1200mm	Reflects LHA Silver Level Requirements	 

9.3 Positioning Within Dwelling


<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	9.3.1	Discrete access	Supports mainstream residential expectations of privacy	  
<input type="checkbox"/>	9.3.2	No direct views from living spaces/ kitchen	Supports mainstream residential expectations of privacy	  

Components



9.4 Toilet – Spatial Planning

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	9.4.1	Located in corner of room	Allows for installation of grabrails if needed	
<input type="checkbox"/>	9.4.2	Min. 1200mm clear circulation in front of the toilet pan exclusive of door swing	Supports users with smaller mobility aids. [Assistive products]	 

9.5 Shower – Spatial Planning

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	9.5.1	Located in corner of room	Allows for installation of grabrails if needed	

9.6 Shower – Construction and Detailing

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	9.6.1	Step-free shower	Allows for installation of grabrails if needed	
<input type="checkbox"/>	9.6.2	Removable shower screen	Allows for greater circulation space if needed	

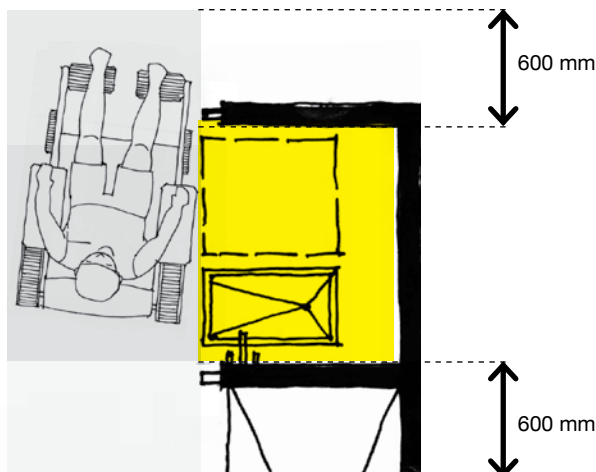


10. Laundry







10.1 Footprint

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	10.1.1	Min. 1200mm (w) x 800mm (d)	Allows for compact European laundry (trough and stacked washing machine and dryer) behind screening door	♿ \$ ⚙
<input type="checkbox"/>	10.1.2	The laundry space should be designed to support ease of movement and adaptation with: at least 1550mm clearance in front of fixed benches and appliances (excluding handles)		LHA Platinum

**Laundry Key
Spatial Provisions**








10.2 Positioning Within Dwelling

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	10.2.1	Locate away from bedrooms	Supports acoustic privacy to sleeping areas [Increased sensitivity]	  
<input type="checkbox"/>	10.2.2	Locate in a separate room or provide a screening door (European laundries)	Limits noise disturbance and supports residential aesthetic	  

Components

10.3 Washing Machine, Tapset and Dryer – Spatial Provisions

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	10.3.1	Consideration must be given to whether it is appropriate for the laundry appliances (washing machine and dryer) to be accessible in seated or standing position Note: This requirement does not specifically define when seated or standing access would be appropriate. Provisions below suggest when access from a seated and/or standing position is likely to be appropriate. Suggestions are also provided on how to achieve access from a seated or standing position, for people using a range of wheeled mobility devices, of varying posture and stature. [Assistive products]		SDA High Support
<input type="checkbox"/>	10.3.2	An occupant desires to launder their own clothing independently <ul style="list-style-type: none"> Seated access to appliances is appropriate 		Supports SDA
<input type="checkbox"/>	10.3.3	An occupant at times may require support by an able-bodied support person, friend or family member to carry out a task, or may live with an able-bodied family member or friend <ul style="list-style-type: none"> Standing access to appliances is appropriate 		Supports SDA
<input type="checkbox"/>	10.3.4	Appliances offset min. 600mm from internal corners, to allow a person using a wheelchair to approach each appliance from either side. [Multi-sided approach]		Supports SDA
<input type="checkbox"/>	10.3.5	Capacity to adjust the height of appliances from floor height to 450mm AFFL, to suit a standing user or seated user, with reduced upper body mobility [Reach]		Supports SDA
<input type="checkbox"/>	10.3.6	Allow for front-loading machine, to suit a seated person		Supports SDA
<input type="checkbox"/>	10.3.7	Side-mount taps at 1050mm AFFL, within 300mm of washing machine front, to improve control for a seated person. [Reach]		Supports SDA
<input type="checkbox"/>	10.3.8	Where the appliances are not installed then the recessed area provision for an appliance shall be a minimum of 600mm in depth.		LHA Platinum
<input type="checkbox"/>	10.3.9	Min. 750mm (D) x 650mm (W) spatial allowance (clear of screening door)	Allows sufficient depth for waste outlet, hoses, door, etc., to enable flush laundry edge perimeter	 
<input type="checkbox"/>	10.3.10	Provide external venting to dryer	Adequately rids space of moisture and odour	  

☉ Detailed Design

Dryer Type

The points below may be useful prompts when designing an accessible laundry. Two types of dryer are generally available:

1. Condenser-type (combined washing and drying)

- No external venting required. (Steam is collected via a water reservoir.) Works well for concealed European laundries where external venting is impossible to achieve
- Less space needed (only one machine)
- Water reservoir requires emptying after each load, which may be onerous for a person with limited mobility and strength
- Type tends to have more complicated controls, which may make use for a person with cognitive or intellectual impairment more difficult

2. Vented-type (dryer is separate to washing machine)

- Often more simple controls
- Two separate machines means more clothing can be quickly laundered **[Physical experience]**
- Requires more space to accommodate two machines
- Requires removal of any lint build up after use
- Requires adequate venting, either through mechanical ventilation, or locating in a room with an open window. Note: a vented dryer mustn't be located in a non-vented cupboard



☉ Detailed Design

Dryer plinth

- The washing machine or dryer can be raised with a custom built or off-the-shelf plinth
- Ensure a level surface and use hold-down brackets and / or matting to prevent movement, vibrations and noise disturbance. **[Increased sensitivity]**
- A propriety plinth may already have feet locking mechanisms that allow for locking in



☉ Detailed Design

Dryers in small spaces

Where space is limited, appropriate options may include:

- use of a combined washing machine and dryer (both functions can be more easily located at an accessible height)
- stacking a flipped dryer above a washing machine. Note: this configuration may not suit users of small stature using small manual wheelchairs



European laundry with benchspace, TAC RIPL Housing.






10.4 Trough and Tapset – Spatial Planning

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	10.4.1	Min. one bowl	Allows hygienic space for soaking and laundering	
<input type="checkbox"/>	10.4.2	Locate as close to benchtop edge as possible	Reduces reach required for a seated user	
<input type="checkbox"/>	10.4.3	Side-mount tap at 1050mm AFFL, within 300mm of trough front	Improves control of taps for people with limited reach	
<input type="checkbox"/>	10.4.4	Offset min 600mm from internal corners	Allows for a seated user to approach from either left or right-hand side [Multi-sided approach]	

10.5 Benchtop – Spatial Provisions

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	10.5.1	800mm wide benchtop next to the washing machine (on opposite side of machine hinge)	Supports low-effort sorting of clothes, by providing set-down space within close reach of washing machine	
<input type="checkbox"/>	10.5.2	800mm wide benchtop next to the dryer (on opposite side of machine hinge)	Supports convenient sorting of clothes, by providing set-down space next to dryer	
<input type="checkbox"/>	10.5.3	Capacity for knee / foot clearance below 800mm set-down space, to AS 1428.1 (2009)	Supports a seated person being able to easily load and unload laundry. [Reach]	




10.6 Benchtop – Construction and Detailing

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	10.6.1	Where occupant not known – standard 900mm height AFFL	Supports standard industry practice (suited standing posture) and will likely suit a person using a motorised wheelchair	\$  
<input type="checkbox"/>	10.6.2	Capacity for infrequent height adjustments, between 700-1000mm AFFL	Allows customisation to suit varied or changing individual needs	  





10.7 Splashback – Construction and Detailing

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	10.7.1	Extend from 700mm AFFL upwards	Allows for lowering of benchtop to 700mm AFFL if needed, without altering splashback	\$




10.8 Screening Door/s – Construction and Detailing

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	10.8.1	Manual side-sliding doors to openings wider in proportion	Supports manual use by people with limited reach	
<input type="checkbox"/>	10.8.2	Automated roller door to openings taller in proportion	Allows for control by people with limited reach	
<input type="checkbox"/>	10.8.3	full-height sliding doors – fully stackable to either side	Allows full access to concealed laundry space	

10.9 Laundry Storage – Construction and Detailing

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	10.9.1	Pull-out base-unit storage	Storage of dirty linen in convenient location and accessible by a seated user	 
<input type="checkbox"/>	10.9.2	Lowerable overhead open storage	Storage of cleaning agents in convenient location and accessible by a seated user	 

10.10 Ironing Board – Construction and Detailing

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	10.10.1	Slide out / fold-down ironing board	Reduces effort to set up the ironing board	 
<input type="checkbox"/>	10.10.2	Offset any inbuilt ironing board min. 1500mm from an internal corner	Allows for a turning circle either side of the board, enabling control from either the left or right-hand side. [Multi-sided approach]	

⦿ Detailed Design

European Laundry Screening Options

Sliding doors (either full height or smaller 'tambour'-style doors) offer the benefit of allowing manual control of screening, with controls locatable within an accessible reach range. This reduces the likelihood that automation will be needed, saving associated costs. **[Encouraging physical use]**

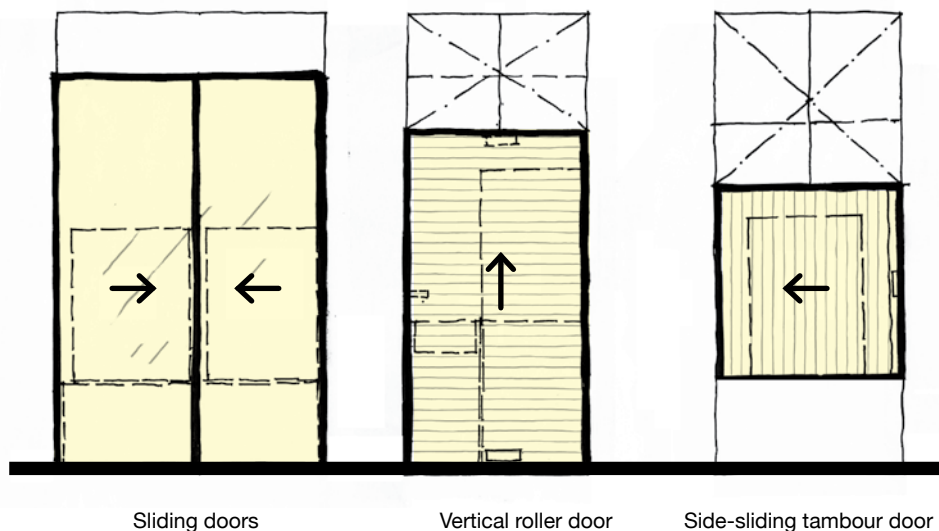
Doors need to operate smoothly to support manual use. **[Dexterity]**. Key considerations to ensure side-sliding tambour doors operate smoothly may include:

- More horizontal proportions (wide opening) rather than vertical (tall opening) will better reduce the weight or 'lag' imposed on the sliding track
- A 'one piece' (L-shaped) sliding track (rather than a 'snail track', which folds around itself) will produce less resistance
- A continuous profile handle can further add strength and rigidity to the sliding door
- Ensure all sliding door and panel configurations allow full access to appliances and/or any benchtop space



Screening door options: Side-sliding tambour door, Abbotsford (left) and Sliding doors, private residence (right).

European Laundry Screening Options








11. General Storage

Spatial Planning

11.1 Footprint

Note: This general storage is separate to built-in-robos, kitchen and bathroom storage.

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	11.1.1	Approximately 2-4m ³ (appropriate to number of bedrooms)	Capacity to accommodate storage of ironing board, broom, vacuum cleaner and linen.	 
<input type="checkbox"/>	11.1.2	1200mm x 900mm niche	Capacity to store spare equipment not in use [Assistive products]	  

KEY



Social Inclusion



Affordability



Physical Independence



Amenity





Homelike

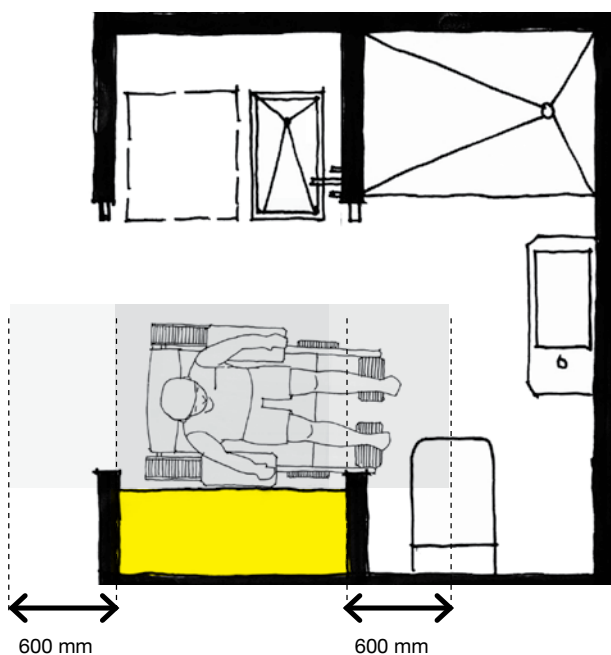


Value Colour Code: **Highly Desirable** | Desirable

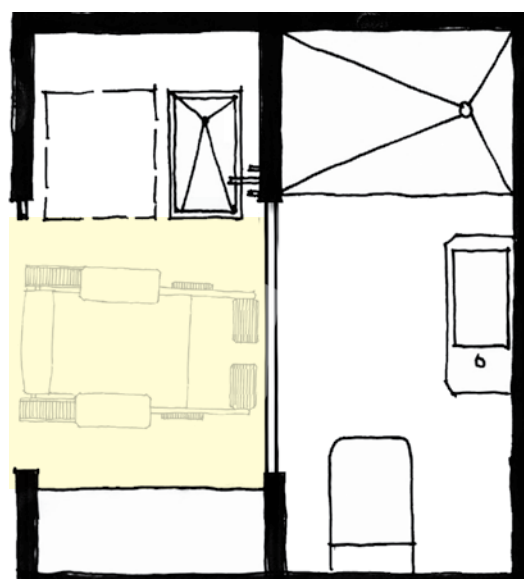
11.2 Positioning Within Dwelling

✓	Ref.	Provision	Reason	Value
<input type="checkbox"/>	11.2.1	Inbuilt linear storage abutting shared space	Maximises access to stored content (i.e. without needing to enter a separate storage room)	
<input type="checkbox"/>	11.2.2	Inbuilt storage offset 600mm from internal corners	Allows for a seated user to side access all parts of storage, using their left or right-hand side	
[Multi-sided approach]				

See also Part C: Construction and Detailing, Section 6: Inbuilt Storage/Joinery.



Inbuilt General Storage Provisions



Loose Storage Provisions ("Equipment Niche")



12. Private Open Space

Spatial Planning

12.1 Footprint (if space provided)

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	12.1.1	Min. 1550mm x 1550mm	Allows turning circle for a motorised wheelchair user	
<input type="checkbox"/>	12.1.2	Additional space for fold-down/pull out/ portable clothesline (sized appropriately to number of bedrooms)	Allows for air-drying without taking up internal space and save cost of using electricity	
<input type="checkbox"/>	12.1.3	Space for external BBQ	Supports maintenance of relationships with family and friends	

KEY



Social Inclusion



Affordability



Physical Independence



Amenity

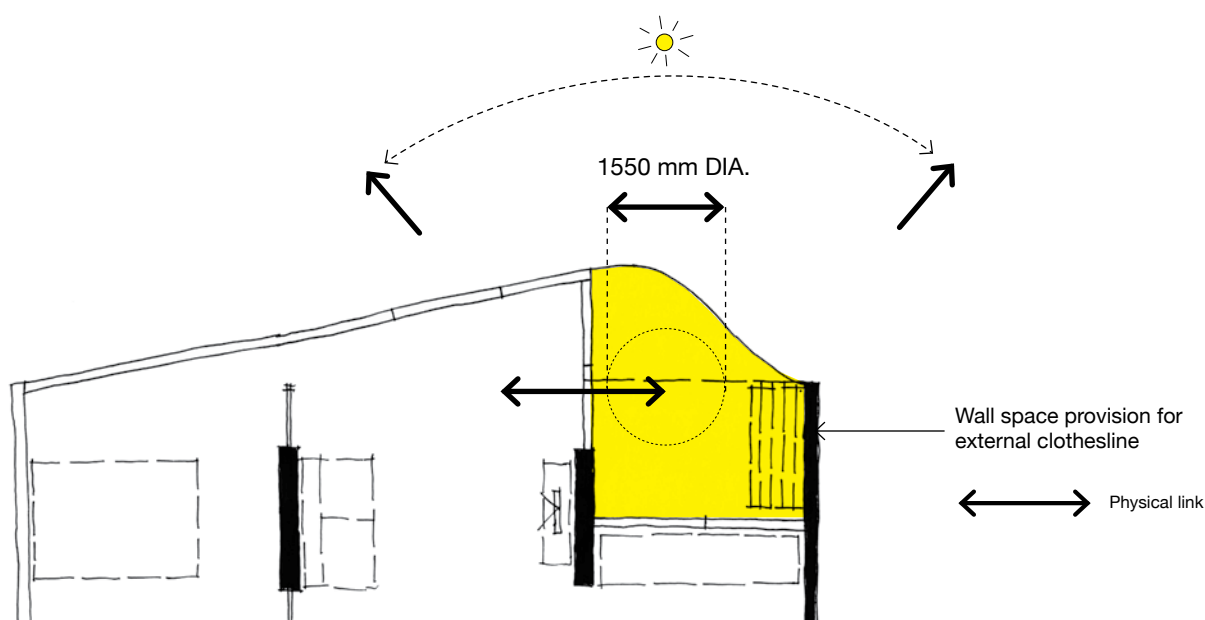


Homelike

Value Colour Code: **Highly Desirable** | Desirable

12.2 Positioning Within Dwelling

☑	Ref.	Provision	Reason	Value
<input type="checkbox"/>	12.2.1	Located to maximise solar access and natural light	Maximises amenity and usability of space.	\$ 🏠 ⚙️
<input type="checkbox"/>	12.2.2	Connected to external views and social activity	Promotes social connectivity	🏠 ♿ ⚙️
<input type="checkbox"/>	12.2.3	Located to prevent direct sightlines entering the space	Enhances privacy and comfort. [Physical experience]	🏠 ♿ ⚙️
<input type="checkbox"/>	12.2.4	Partially covered – protection from weather	Allows for interaction with external environment in all weather. [Connection with outdoors]	🏠 ♿ ⚙️



Private Open Space Key Connections

Brief Development







Provision of Private Open Space

Whether private open space to an accessible dwelling is provided will be dependent upon a range of factors, including:

- Specific town planning requirements
- Climate (balconies are less likely to be heavily utilised for recreational purposes and drying of clothes in colder areas)
- Proximity to public green open space and whether this will provide a realistic and convenient alternative for recreational purposes
- Capacity to achieve sufficient internal space for a functional accessible dwelling

Components



12.3 Screening (Balustrading/Fencing)

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	12.3.1	Allow external view from low height e.g. 700mm AFFL	Allows external view for a person reclined in posture or of smaller stature	  
<input type="checkbox"/>	12.3.2	Provide range of zones with varying degrees of privacy (acoustic and visual)	Offers options to support various individual behaviours, sensitivities and preferences	  






Examples of balustrading to allow views out and offer options for privacy. Left: glass balustrading. Photo supplied by Royal Rehab. Right: Hunter Housing Project.

12.4 Ramps

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	12.4.1	Avoid wherever possible	Maximises level and usable areas for a person using wheeled mobility aids	 
<input type="checkbox"/>	12.4.2	Where unavoidable – as per AS 1428.1 (2009)		

12.5 External Tap





<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	12.5.1	Offset external tap (if provided) 600mm from any internal corner	Allows space for a seated user to approach from either the left or right-hand side as needed. [Multi-sided approach]	  

See Part B, Section 13: Landscaping










13. Landscaping

13.1 Type

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	13.1.1	Provisions for "accessible planting" (see below)	Support independent maintenance and enjoyment of garden for a seated person with limited bending or reach	   

13.2 Species Selection

<input checked="" type="checkbox"/>	Ref.	Provision	Reason	Value
<input type="checkbox"/>	13.2.1	Avoid trees with disruptive root structures	Reduces ongoing maintenance works, to ensure a level surface to ground surfaces	 
<input type="checkbox"/>	13.2.2	Avoid varieties that drop leaves, berries, fruit or debris	Avoids debris being caught in wheels of mobility aids and causing damage or failure	 
<input type="checkbox"/>	13.2.3	Avoid varieties that attract stinging insects	Avoids possible triggering of any underlying health conditions	
<input type="checkbox"/>	13.2.4	Full-grown size maintains min. clearances around CAPT	Eliminates possible obstructions and maintenance work along a CAPT	 

KEY



Social Inclusion



Affordability



Physical Independence



Amenity



Homelike

Value Colour Code: **Highly Desirable** | Desirable

☉ Detailed Design

Accessible Planting

Accessible planting may include:

- Raised garden beds (700–900mm AFFL)
- Vertical creepers on a trellis (within 300mm reach from a seated position) **[Assistive products]** **[Reach]**

