purple apple access

Access Report

Multi Dwelling Narrabeen

140-142 Ocean Street
Narrabeen NSW 2101

For: Trio Industries Pty Ltd
Ref: PAA_24271

Document Control

This report has been prepared based on the documentation available and time allocated to conduct the review. All reasonable attempts have been made to identify key compliance matters.

Revision Summary:

prepared by:			
Lee-May Whong	Draft Revision 1	Issued for review Issued for DA	17 September 2024 6 February 2025

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Clarifications:

This report is limited to items within drawings listed in this report only.

Construction is to be in accordance with the recommendations made in this access report to ensure compliance.

Any dimensions quoted throughout this report and within Australian Standards are CLEAR dimensions, not structural. This needs to be considered during construction to account for wall linings and the like.

Definitions:

The following terminology has been used throughout this report:

Compliant | compliance with current accessibility legislation has been achieved
Compliant Configuration | circulation and spatial planning requirements are compliant
Capable of compliance | compliance is achievable through detailed design
Not Yet Compliant | circulation and spatial planning requirements have not yet been met
To be addressed during detailed design | details not available or applicable at DA stage
To be confirmed | inadequate information is provided to determine compliance

Executive Summary

Development application documentation for the proposed Narrabeen residential development located at 140-142 Ocean Street, Narrabeen NSW 2101, has been reviewed against current accessibility legislation.

The following table summarises our findings.

Item No.	Description	Compliance Status
The Disability (Access to Premises) Standards		
5.1	Access Code	Refer BCA commentary
5.2	New Work & The Affected Part	Not applicable
Access and Approach		
6.1	Allotment Boundary to Entrance	Compliant configuration
6.2	Accessible Carparking to Entrance	Not applicable
6.3	Accessways (Pathways Generally)	Compliant configuration
6.4	Accessible Carparking	Not applicable
6.5	Accessible Ramp	Compliant configuration
6.6	Stairs	Compliant configuration
6.7	Walkways	Compliant configuration
6.8	Accessible Entrance	Compliant configuration
Interior		
7.1	Extent of Access Generally	Compliant configuration
7.2	Circulation Areas	Compliant configuration
7.3	Doorways	Compliant configuration
7.4	Exempt Areas	None specified
7.5	Floor Finishes	To be addressed during detailed design
7.6	Carpet	To be addressed during detailed design
7.7	Controls	To be addressed during detailed design
7.8	Visual Indication to Glazing	To be addressed during detailed design
7.9	Tactile Indicators	To be addressed during detailed design
7.10	Signage	To be addressed during detailed design
Vertical Circulation		
8.1	Lifts	Compliant configuration
8.2	Stairs	Capable of compliance
8.3	Slip Resistance (Ramps & Stairs)	To be addressed during detailed design
Adaptable Housing		
Pre Adaption Requirements		
9.1	Accessible Entrance	Capable of compliance
9.2	Visitable Toilet	Capable of compliance
9.3	Accessible Path of Travel	Compliant configuration
Post Adaption Requirements		
9.4	Car Accommodations	Compliant configuration
9.5	Letterbox	Compliant configuration
9.6	Doorways	Capable of compliance
9.7	Internal Corridors	Compliant configuration
9.8	Bathroom	Capable of compliance
9.9	Kitchen	Compliant configuration

9.10	Bedroom	Compliant configuration
9.11	Living Area	Compliant configuration
9.12	Laundry	Compliant configuration
9.13	Floors Generally	To be addressed during detailed design
9.14	Ancillary Items	To be addressed during detailed design
Universal Housing Requirements (SEPP Housing 2021)		
10.1	Dwelling Access	To be addressed during detailed design
10.2	Dwelling Entrance	To be addressed during detailed design
10.3	Internal Corridors and Doors	To be addressed during detailed design
10.4	Toilet	To be addressed during detailed design
10.5	Shower	To be addressed during detailed design
10.6	Reinforcement of Bathroom Walls	To be addressed during detailed design
10.7	Internal Stairways	To be addressed during detailed design

We consider that the drawings presented for assessment, for the purposes of a development application, generally comply with current statutory requirements.

Accessibility requirements are included in Appendix 1 of this report to guide the detailed design. Best Practice options are provided within Appendix 2 and we encourage their implementation into the design.

The recommendations throughout this report reflect the professional opinion and interpretation of Lindsay Perry Access Pty Ltd. This may differ from that of other consultants.

LEE-MAY WHONG
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Diploma of Access Consulting

1 Project Background

The proposed project is a three-storey residential apartment building with a basement carpark level. The development will provide eleven (11) apartments in a three bedroom arrangement with a central lift foyer. There are adaptable apartments nominated within the design.

Figure 1 | Proposed Development

2 Reviewed Documentation

Documentation prepared by Popov Bass Architects has been reviewed as follows:

dwg no.	drawing name	revision
0649-DA100	Title Page	M
0649-DA101	Location & Context Plan & Elevation	M
0649-DA102	Site Analysis Plan	M
0649-DA103	Site Plan, Demolition & Area Diagrams	M
0649-DA104	Basement Plan	M
0649-DA105	Ground Floor Plan	M
0649-DA106	Level 01 Plan	M
0649-DA107	Level 02 Plan	M
0649-DA108	Roof Plan	M
0649-DA109	Elevations 1	M
0649-DA110	Elevations 2	M
0649-DA111	Sections AA & BB	M
0649-DA112	Sections CC DD & EE	M
0649-DA113	Post Adaptation Plans	M
0649-DA114	Area Diagrams	M
0649-DA115	Height Diagrams	M
0649-DA116	Shadow Diagram June 21	M
0649-DA117	Sun Eye Views 1	M
0649-DA118	Sun Eye Views 2	M
0649-DA119	Schedule of Finishes & 3D Perspectives	M
0649-DA120	Window Schedule	M

3 Council DCP Requirements for Accessibility

Warringah Development Control Plan 2011 has the following requirements:

D18 Accessibility and Adaptability

Objectives:

- To ensure vehicular access points for parking, servicing or deliveries, and pedestrian access are designed to provide vehicular and pedestrian safety.
- To ensure convenient, comfortable and safe access for all people including older people, people with prams and strollers and people with a disability.
- To provide a reasonable proportion of residential units that should be designed to be adaptable and easily modified to promote 'ageing in place' and for people with disabilities.

Requirements:

1. The design is to achieve a barrier free environment with consideration given to the design of door handles and switches, entrances and corridors. Steep, rough and slippery surfaces, steps and stairs and narrow paths should be avoided.
2. There are to be continuous, independent and barrier-free access ways incorporated into the design of buildings.
3. Pathways are to be reasonably level with minimal cross fall and sufficient width, comfortable seating and slip-resistant floor surfaces.
4. Where there is a change of level from the footpath to commercial or industrial floor levels, ramps rather than steps should be incorporated.
5. There is to be effective signage and sufficient illumination for people with a disability.
6. Tactile ground surface indicators for the orientation of people with visual impairments are to be provided in accordance with the relevant Australian Standard.
7. Access for people with a disability is to be provided at the main entrance to the development.
8. Development is to comply with Australian Standard AS1428.2.
9. Where a development comprises at least five (5) dwellings, 10% (rounded up to next whole number) of dwellings shall be capable of being adapted (Class C) under AS4299.

Note
Evidence of compliance with the Adaptable Housing Class C requirements of AS 4299 shall be submitted when lodging a DA and certified by an experienced and qualified housing professional (e.g. Architect or Accredited Building Certifier).

This access report demonstrates compliance with current, applicable accessibility legislation.

4 Legislation

Access assessment has been made against Access Legislation including:

- The Commonwealth Disability Discrimination Act 1992 (DDA)
- Disability (Access to Premises (Buildings)) Standards 2010
- Access Code for Buildings 2010
- The Livable Housing Design Guidelines – Edition 4

A summary of the requirements of relevant legislation follows.

The Disability Discrimination Act 1992

The DDA requires independent, equitable, dignified access to all parts of the building for all building users regardless of disability. The DDA makes it unlawful to discriminate against a person on the grounds of disability.

The Disability (Access to Premises) Standards

Any application for a building approval for a new building or upgrade of an existing building triggers the application of the Premises Standards.

The Premises Standards include an **Access Code** written in the same style as the Building Code of Australia. It has a number of Performance Requirements that are expressed in broad terms and references a number of technical Deemed-to-Satisfy Provisions.

The National Construction Code / Building Code of Australia (Volume 1)

The Building Code of Australia (BCA) is contained within the National Construction Code (NCC) and provides the minimum necessary requirements for safety, health, amenity and sustainability in the design and construction of new buildings (and new building work in existing buildings) throughout Australia. The BCA is a performance-based code and compliance can be met through satisfying the deemed-to-satisfy provisions or by meeting the prescribed performance requirements.

The BCA for Class 2 buildings, access for people with disabilities is required:

- From a pedestrian entrance required to be accessible to at least 1 floor containing sole-occupancy units and to the entrance doorway of each sole-occupancy unit located on that level.
- To and within not less than 1 of each type of room or space for use in common by the residents, including a cooking facility, sauna, gymnasium, swimming pool, common laundry, games room, TV room, individual shop,

dining room, public viewing area, ticket purchasing service, lunch room, lounge room, or the like.

— Where a ramp complying with AS 1428.1 or a passenger lift is installed—
  a) to the entrance doorway of each sole-occupancy unit; and
  b) to and within rooms or spaces for use in common by the residents, located on the levels served by the lift or ramp.

AS1428 – Design for Access and Mobility

The AS1428 Suite provides design requirements for accessibility generally, covering all types of disabilities. AS1428.1 and AS1428.4.1 are referenced by the NCC / BCA.

— Australian Standard AS1428.1 (2009) Amendment 1 & 2, – Design for Access and Mobility contains access requirements that are mandatory for the provision of access for persons with a disability
— Australian Standard AS1428.2(1992) – Design for Access and Mobility: Enhanced and additional requirements – Buildings and facilities provides enhanced and best practice requirements that will minimize DDA risk
— Australian Standard AS1428.4.1 (2009) Amendment 1 – Design for Access and Mobility: Means to assist the orientation of people with vision impairment – Tactile ground surface indicators

AS1735– Lifts, escalators and moving walks

AS1735.12 (1992) contains requirements for passenger lifts for persons with a disability.

SEPP Housing 2021

SEPP Housing Part 43C (b) Consideration of design of residential apartment development and Part 147 Determination of development applications and modification applications for residential apartment development (1)(b) apply to new construction of residential apartment buildings. Both parts reference the Apartment Design Guide (ADG).

The ADG includes a recommendation for universal housing – 20% of apartments designed to the silver level Livable Housing Australia Design Guidelines.

AS4299 Adaptable Housing

AS4299 (1992) provides housing for different community groups with different needs. It involves a move away from special accommodation for persons with a disability, avoiding social dislocation.

Livable Housing Australia Design Guidelines

The Livable Housing Design Guidelines, 2017 include Silver, Gold and Platinum Level which cater to differing levels of accessibility.

5 The Disability (Access to Premises) Standards

Any application for a building approval for a new building or upgrade of an existing building triggers the application of the Premises Standards.

The Premises Standards include an Access Code written in the same style as the Building Code of Australia. Additionally, it offers a number of concessions for existing buildings as outlined below.

5.1 Access Code

The Premises Standards include an Access Code written in the same style as the Building Code of Australia.

Compliance Summary:

Refer to BCA requirements throughout subsequent sections of this report.

Commentary:
While the introduction of NCC 2022 causes clause numbers to differ between documents, the intent of each code remains similar.

5.2 New Part and Affected Part (Existing Buildings)

The Disability (Access to Premises – Buildings) Standards apply to **...a new part, and any affected part, of a building,** to the extent that the part of the building is...a Class 3, 5, 6, 7, 8, 9 or 10 building (Clause 2.1).

New part is defined as follows (Clause 2.1 (4)):

- An extension to the building or a modified part of the building.

An **affected part** is defined as follows (Clause 2.1 (5)):

- The principal pedestrian entrance of an existing building that contains a new part; and
- Any part of an existing building, that contains a new part, that is necessary to provide a continuous accessible path of travel from the entrance to the new part.

Compliance Summary:

Not applicable

Commentary:
New work and affected part provisions (Part 2.1(4 & 5)) are applicable to modification works only, not new developments.

6 BCA | Access and Approach + External Areas Generally

The approach to the building needs to be addressed when considering access for persons with a disability. The BCA has three requirements for the approach to the building for persons with a disability.

An accessible path of travel is required to the building entrance from the main points of pedestrian entry at the allotment boundary, from another accessible building connected by a pedestrian link, and from required accessible carparking spaces on the allotment.

In this instance, the approach to the building has been considered as follows:

- from the main points of the pedestrian entry along Ocean Street at the allotment boundary, and
- from another accessible building connected by a pedestrian link (not applicable), and
- from the required accessible carparking space on the allotment.

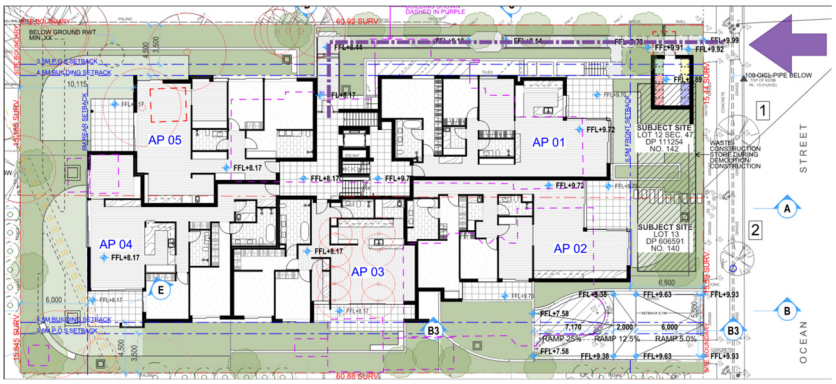

Figure 2 | Overall Site Plan

6.1 Approach from Allotment Boundary

The BCA requires that a continuous accessible path of travel be provided from the allotment boundary at the main points of pedestrian entry to the main entrance.

Compliance Summary:

Compliant configuration

Commentary:

An accessible path of travel is provided to the building entrance from the allotment boundary along Ocean Street via a formed footpath. Site levels indicate that on-grade access is achievable with walkways and ramp facilitating an accessible path of travel to the building entrance.

6.2 Approach from Accessible Carparking

The BCA requires that a continuous accessible path of travel be provided from the accessible carparking areas to the main entrance.

Compliance Summary:

Not applicable

Commentary:

Accessible car parking not applicable to class 2 residential developments. Approach is provided for the adaptable car parking via a passenger lift.

6.3 Accessways (Pedestrian Areas Generally)

The accessible path of travel refers to a pathway which is grade restricted and provides wheelchair access as per the requirements of AS1428.

Compliance Summary:

Compliant configuration

Commentary:

Footpaths that form the approach to the building are a dimensioned at least 1000mm wide. Site levels indicate a level surface is achievable. Ramps and walkways are provided to facilitate access.

6.4 Accessible Carparking

As this is a residential development (Class 2), there are no BCA requirements for the provision of accessible carparking within the development.

Compliance Summary:

Not applicable

Commentary:

Not applicable to Class 2 residential. Adaptable car parking provided per adaptable requirement.

6.5 Accessible Ramp

AS1428.1 defines a ramp as having a gradient between 1:14 and 1:20. The accessible path of travel refers to a pathway which is grade restricted and provides wheelchair access as per the requirements of AS1428.

Compliance Summary:

Compliant configuration

Commentary:

Straight ramps are provided at the front entrance. The configuration of the ramps are in keeping with accessibility requirements including length between landings, and the provision of handrails with extension to both sides.

Ensure tactile indicators are provided at the top and bottom of the ramp and that kerb rails are provided as necessary where ramp is not enclosed during detailed design.

6.6 Stairs

AS1428.1 has access requirements for all public access stairs and is applicable in this instance.

Compliance Summary:

Compliant configuration

Commentary:

Stair is provided as a part of the pedestrian egress from basement to ground floor.

Ensure that the detailed design includes the provision of handrails with extensions both sides, contrasting non-slip nosing to treads and tactile indicators top and bottom.

6.7 Walkways

AS1428.1 defines a walkway as having a gradient between 1:33 and 1:20. The accessible path of travel refers to a pathway which is grade restricted and provides wheelchair access as per the requirements of AS1428.

Compliance Summary:

Compliant configuration

Commentary:

1:20 walkways are provided and offer an accessible path of travel to the building.

6.8 Accessible Entrance

In a building required to be accessible, an accessway must be provided through the principal pedestrian entrance, and not less than 50% of all pedestrian entrances including the principal pedestrian entrance.

In a building with a total floor area more than 500 sqm a pedestrian entrance which is not accessible must not be located more than 50m from an accessible pedestrian entrance (not applicable).

Compliance Summary:

Compliant configuration

Commentary:

A single hinged doorway provide entry to the building and offer compliant circulation areas.

The selected door enables a clear opening width of 850mm.

A level threshold hold is provided at the doorway.

7 BCA | Interior

The building is designed over three (3) levels and accommodates three (3) adaptable apartments.

The interior areas are subject to accessibility requirements include the residential common areas being the entry foyer and corridors. The following do not apply to individual units.

7.1 Extent of Access Generally – BCA

Within a residential development (Class 2), access for people with disabilities is required from a pedestrian entrance required to be accessible to at least 1 floor containing sole-occupancy units and to the entrance doorway of each sole-occupancy unit located on that level.

Where a ramp or a passenger lift is installed, access is required to the entrance doorway of each sole-occupancy unit within the building.

Access is also required to and within not less than 1 of each type of room or space for use in common by the residents.

Compliance Summary:

Compliant configuration

Commentary:

Access has been provided to and within the common areas of the building.

7.2 Circulation Areas

BCA (Clause D4D4) requires the provision of turning spaces and passing areas to corridors to enable wheelchair circulation throughout a building.

Turning spaces 1540mm wide by 2070mm long are required within 2m of the end of corridors to enable a wheelchair to turn through 180° and passing areas 1800mm wide by 2000mm long are required every 20m along a corridor unless there is a clear line of sight.

Within corridor areas, 1500x1500mm is required to facilitate a 90° turn by a wheelchair. This must be accommodated within accessible areas.

Compliance Summary:

Compliant configuration

Commentary:

Compliant circulation space has been provided throughout the building.

7.3 Doorways Generally

AS1428.1 has requirements for doorways within the accessible path of travel to enable independent access for people using a wheelchair.

Compliance Summary:
Compliant configuration

Commentary:
Doorways within the accessible path of travel generally achieve the required circulation areas.

7.4 Exempt Areas

BCA Clause D4D5 does not require access for people with disabilities to areas that would be inappropriate due to the particular use of the area or would pose a health and safety risk. This includes the path of travel to these areas.

Compliance Summary:
None specified

Commentary:
Within this development, the following areas are considered to be exempt from requiring access for people with disabilities: mechanical plant and service access.

7.5 Floor Finishes

All floor finishes are to be flush to provide an accessible path of travel throughout the different areas of the building. Maximum allowable construction tolerance is 3mm (5mm for beveled edges) as part of the accessible path of travel. Refer to AS1428.1(2009), Clause 7.2 for further details.

Compliance Summary:
To be addressed during detailed design stages

7.6 Carpet

BCA requires a maximum carpet pile height of 11mm and carpet backing thickness not exceeding 4 mm.

Compliance Summary:
To be addressed during detailed design stage.

7.7 Controls

Controls such as light switches, GPOs, alarm keypads, card swipes, etc are to be located within the accessible height range of 900-1100mm above the floor level and not within 500mm of an internal corner to comply with AS1428.1(2009), Clause 14.

We recommend that video intercoms be installed at 1200mm affl - this is within the range of common view per AS1428.2 (1992).

Compliance Summary:
To be addressed during detailed design stage.

7.8 Visual Indication to Glazing

Provide decals to all full height glazing that can be mistaken for a doorway to assist persons with a vision impairment. Decals to be solid and have a minimum 30% luminance contrast to the background colour and be not less than 75mm high located within the height range of 900-1100mm above the finished floor level per AS1428.1, Clause 6.6.

Compliance Summary:

To be addressed during detailed design stage.

7.9 Tactile Indicators

For a building that is required to be accessible, tactile ground surface indicators must be provided to warn people who are blind or have a vision impairment that they are approaching a hazard (BCA D4D9).

Tactile indicators to be detectable, durable, non-slip and have a minimum 30% luminance contrast to the background color (45% for discrete tactile indicators and 60% for discrete two-tone tactile indicators).

Compliance Summary:

To be addressed during detailed design stage.

7.10 Signage

Signage to identify sanitary facilities, hearing augmentation and required exits are to be provided in accordance with BCA Clause D4D7. This includes provision of the International Symbol for Access or International Symbol for Deafness as appropriate. Signage to comply with AS1428.1 (2009), Clause 8.

Compliance Summary:

To be addressed during detailed design stage.

8 BCA | Vertical Circulation

Lifts provide the main means of access between levels of the building. One lift is provided within the development. Stairs within the building are non-fire isolated egress stairs.

8.1 Passenger Lift

Where passenger lifts are provided within a building to facilitate access between levels, they must meet the minimum requirements of the NCC / BCA with regard to the internal lift car size, which is dependent upon the total vertical distance that the lift travels.

Compliance Summary:

Compliant configuration

Commentary:

A lift is provided for access between levels.

The overall size of the lift shaft is capable of accommodating a lift car of adequate dimensions for compliance with BCA (1100 x 1400mm internal floor area required with 900mm clear opening to door).

Adequate circulation areas are provided at lift landings.

8.2 Stairs

AS1428.1 has access requirements for all stairs other than fire isolated egress stairs and is applicable in this instance.

Compliance Summary:

Capable of compliance

Commentary:

Stairs are provided and are centrally located adjacent to the lift.

Ensure provision of handrails with 1-tread extension at the base landing of a stair flight (or increase the landing to accommodate handrail extending 1-tread at the landing during detailed design.

Ensure tactile indicators top and bottom and contrasting non-slip nosing strips to treads.

8.3 Slip Resistance (Stairs and Ramps)

The BCA defines the following slip resistance requirements for stairs and ramps:

Application	Surface Conditions	
	Dry	Wet
Ramp steeper than 1:14	P4 or R11	P5 or R12
Ramp steeper than 1:20 but not steeper than 1:14	P3 or R10	P4 or R11
Tread or Landing surface	P3 or R10	P4 or R11
Nosing or landing edge strip	P3	P4

Compliance Summary:

To be addressed during detailed design stage.

9 Adaptable Housing (Council Requirement)

Council DCP requires the provision of two (2) adaptable apartments, based on a total of eleven (11) apartments (10%).

Three (3) adaptable apartments has been provided.

An adaptable housing unit is defined by AS4299 as follows:

> *A housing unit which is designed and constructed to meet the performance requirements stated in the standard. It is designed in such a way that it can be modified easily in the future to become accessible to both occupants and visitors with disabilities of progressive frailties.*

There are six (6) performance requirements being: visitability; avoidance of level changes; manoeuvrability; ease of adaption; ease of reach; and future laundry facilities.

Both the pre-adaption state and post-adaption state need to be considered. In the pre-adapted state, an adaptable unit is required to be "visitable", and these requirements are applicable at the time of construction. Other elements are to be provided on adaption of the unit. Documentation needs to demonstrate that compliance in the post-adapted state is achievable.

At time of construction, the following are required:

- An accessible entrance per AS1428.1 (2009).
- A visitable toilet at the entry level per AS4299.
- An accessible path of travel from the entrance to the visitable toilet and living areas within the meaning of AS1428.1 (2009).

At time of adaption, the following are required:

- Compliance with AS4299 Appendix A – essential criteria. This includes kitchen layouts, laundry layouts, carparking, etc.

The following requirements for adaptable apartments are based on AS4299, Section 4 – Design of the Housing Unit, essential criterion as listed in Appendix 1, AS4299 Schedule of Features for Adaptable Housing. Compliance with the following features will achieve a Class C adaptable housing unit.

> Commentary:
> Adaptable apartments are nominated on current documentation as apartments 02, 05 and 10.

Pre-Adaption Requirements:

9.1 Accessible Entrance

Entrances to adaptable housing units are to comply with AS4299 Clauses 4.3.1 and 4.3.2. AS4299 which require that the entry doors comply with AS1428.2 at time of

construction. The minimum clear opening width of the doorway is to be 850mm and allow for wheelchair maneuverability (provide minimum 1550mm long area in front of the doorway). Entrances to the adaptable housing units to be weatherproofed.

Door hardware is to comply with AS1428. In this regard, entry door hardware is to be in the accessible height range of 900-1100mm above finished floor level. The use of lever handles is encouraged to assist persons with a manual disability such as arthritis.

Compliance Summary:
Capable of compliance

Commentary:
The entry doorway to the adaptable unit offers areas conducive to an accessible entrance.

9.2 Visitable Toilet

Each adaptable housing unit is required to have a toilet on the entry floor that is a visitable toilet within the meaning of AS4299 at time of construction. The toilet is to be installed in compliance with AS1428 (correct set-out distance from fixed walls) and have the capacity to accommodate a grabrail that complies with Figure 4.5 of AS4299. The visitable toilet door is required to have a clear opening width of 820mm. Slip resistant floors are also required.

A visitable toilet is defined as a toilet which has a space of minimum 1250x900mm in front of the toilet clear of door swings.

Compliance Summary:
Capable of compliance

Commentary:
900x1250mm circulation front of toilet pan is achievable on the 1:100 plan.

9.3 Accessible Path of Travel from Entry to Visitable Toilet & Living Area

The performance requirements of AS4299 require the provision of an accessible path of travel, within the meaning of AS1428.1 (2009), from the entrance to the visitable toilet and a living area. Door circulation and corridor widths need to be designed to reflect this requirement.

Compliance Summary:
Compliant configuration

Commentary:
Access is provided between the entry doorway and the living areas and also to the visitable toilet is achievable as shown on the 1:100 plan.

Post Adaption Requirements:

9.4 Private Car Accommodations

Private carparking spaces for adaptable housing units shall be large enough to enable a person with a wheelchair to get in and out of both the car and the parking space. A width of 3.8m is necessary to enable the driver to alight, open the passenger door and assist a person with a disability into a wheelchair.

Carparking spaces for the adaptable units to have a minimum floor plan dimension of 3.8m x 6.0 (AS4299, Clause 3.7.2). A clear vertical clearance of 2.5m is desirable.

Compliance Summary:

Compliant configuration

Commentary:

Carparking for the adaptable units provided as double parking configuration.

9.5 Letterboxes

Letterboxes to adaptable housing units should be located on a hard standing area connected by an accessible path of travel to the adaptable housing unit.

Compliance Summary:

Compliant configuration

Commentary:

Letterboxes has been provided with turning circulations in front of the letterboxes.

9.6 Doorways

Doorways throughout adaptable housing units are required to have a clear opening width of 820mm. At time of construction, an accessible path of travel within the meaning of AS1428.1 is required from the entrance to the visitable toilet and living area. Other door circulation areas are to comply with AS1428.1 on adaption of the unit.

All door hardware is to be operable with one hand and in the height range of 900-1100mm above the floor level. The use of lever handles is encouraged to assist persons with a manual disability such as arthritis.

Compliance Summary:

Capable of compliance

Commentary:

Doorways are generally provided with adequate circulation areas.

9.7 Internal Corridors

There is a requirement for all corridors to be minimum 1000mm.

Compliance Summary:

Compliant configuration

Commentary:

Corridors within the adaptable units are a minimum of 1000mm wide.

9.8 Bathroom

Bathrooms within an adaptable housing unit are to comply with AS1428 after adaption. Issues to be considered include slip resistant floor, shower minimum 1100x1160mm with future provision for accessible features including handheld shower and grabrails, shower waterproofing to AS3740, recessed sop holder, washbasin with knee clearance, adequate circulation areas, automatic control of hot water, double GPO next to the mirror and the provision of capstan or lever taps. Refer to AS4299, Clause 4.4.4.

Compliance Summary:

Capable of compliance

Commentary:

Bathroom offers dimensions conducive to adaption.

9.9 Kitchen

Essential requirements for kitchens within an adaptable housing unit allow for future adaption and include items such as sinks, taps, cooktops, location of oven, cupboard handles, general power outlets, dimensions of the space and location of refrigerator.

Kitchens are required to have a clear space between benches of 1550mm. An area of bench top 800mm wide is required that can be adjusted through the height range of 750 – 850mm above floor level. Alternatively, a section of this dimension needs to be easily replaceable to achieve this requirement.

Compliance Summary:

Compliant configuration

Commentary:

Kitchen offers circulation areas per requirements.

9.10 Bedroom

At least one bedroom within an adaptable housing unit is required to have adequate space for a wardrobe and a queen size bed with minimum 1540mm wide circulation at the foot of the bed and 1000mm at the side of the bed (1200mm preferred) for compliance with AS1428.2, Clause 6.1.

Compliance Summary:
Compliant configuration

Commentary:
Bedroom 1 can offer compliant circulation areas.

9.11 Living Area

Living areas within an adaptable housing unit are required to have circulation areas that allow a wheelchair to maneuver within the space at time of construction. In this regard, an area with 2250mm diameter is required, clear of furniture. AS4299, Clause 4.7 outlines this requirement. A telephone outlet adjacent to a general power outlet is also a requirement for living areas.

Compliance Summary:
Compliant configuration

Commentary:
The living area within the adaptable unit is an open-plan area which meets the circulation requirements of AS4299.

9.12 Laundry

Requirements for laundry areas within adaptable housing units include the provision for an automatic washing machine / clothes dryer with clear space in front of the appliances. An area of 1550mm diameter will achieve this requirement. Laundries are to have slip resistant floors and door circulation areas in compliance with AS1428.1.

Compliance Summary:
Compliant configuration

Commentary:
Laundry offering compliance to adaptable housing requirements.

9.13 Floors Generally

AS4299 requires that all floor surfaces including bathrooms, laundry and external paved surfaces be slip resistant to comply with AS3661.1.

Non-essential items include that after modification, carpets should have short pile and consideration should be given to the fire hazard indices. Floors should be easily cleanable and bold patterns should be avoided to eliminate confusion for persons with vision impairment.

Compliance Summary:
To be addressed during detailed design

9.14 Ancillary Items

Ancillary items are not considered essential items. Switches such as light switches must be located within the accessible height range of 900-1100mm above the floor level.

Power outlets should be located at a height not less than 600mm affl – a height of 1000mm is preferred. They should be located not less than 500mm from internal corners.

Compliance Summary:
To be addressed during detailed design

10 Universal Housing Requirements (SEPP Housing 2021)

SEPP Housing 2021 makes reference to Universal Housing.

43C Consideration of design of residential apartment development states:
Before carrying out residential apartment development to which this division applies, the relevant authority must consider the following —

(a) the quality of the design of the development, evaluated in accordance with the design principles for residential apartment development set out in Schedule 9,

(b) the Apartment Design Guide.

The Apartment Design Guide Section Q4 Universal Design includes a benchmark of 20% of the total apartments to incorporate the Livable Housing Australia Design Guidelines silver level features.

Our understanding is that the provision of Universal Housing in accordance with the ADG is not a statutory requirement. It is included as a best practice approach to accessibility only. We recommend seeking advice from the project planner as to its implementation within this project.

Commentary:
Received documentation for review does not nominate livable units of silver level features. Further commentary can be provided once this information is received.

Livable housing requirements are summarised below:

10.1 Dwelling Access

There is a safe, continuous, step-free pathway from the street entrance and/or parking area to a dwelling entrance that is level.

10.2 Dwelling Entrance

There is at least one level (step-free) entrance into the dwelling to enable home occupants to easily enter and exit the dwelling.

10.3 Internal Corridors and Doors

Internal doors and corridors facilitate comfortable and unimpeded movement between spaces.

10.4 Toilet

The ground (or entry) level has a toilet to support easy access for home occupants and visitors.

10.5 Shower

The bathroom and shower are designed for easy and independent access for all home occupants.

10.6 Reinforcement of Bathroom & Toilet Walls

The bathroom and toilet walls are built to enable grabrails to be safely and economically installed.

10.7 Internal Stairways

Where installed, stairways are designed to reduce the likelihood of injury and also enable future adaptation.

11 Conclusion

This report demonstrates that the fundamental aims of accessibility legislation are achievable within the proposed development. Spatial planning and general arrangements of facilities will offer inclusion for all building users.

Disability is often defined as any limitation, restriction or impairment which restricts everyday activities and has lasted or is likely to last for at least 6 months. Disabilities can be very varied. They can be physical, cognitive, intellectual, mental, sensory, or developmental. They can be present at birth or can occur during a person's lifetime. They can also be permanent or temporary. In Australia, almost one in five people – 4.3 million – have a disability with one in three having severe or profound core activity limitation.

Equity and dignity are important aspects in the provision of access to buildings for all users. With respect to people with a disability, equity and dignity are sometimes overlooked in the construction of new buildings or refurbishment works. The design approach needs to maintain a high level of equity for people with disabilities and meet the performance requirements of the BCA. The performance requirements adopt two main concepts in the provision of access for people with a disability being to the degree necessary and safe movement. Both of these concepts need to be achieved within the context of equitable and dignified access.

In this respect, a wide range of disabilities needs consideration and a compromise reached between requirements of different disability groups. Measures need to be implemented to ensure inclusion of all users, not a particular disability group in isolation.

We consider that the drawings presented for assessment, for the purposes of a development application, demonstrate that compliance with current statutory requirements affecting accessibility is achievable subject to detailed design at the construction certificate stage (refer to Appendix 1 for requirements).

Appendix 1 | Accessibility Requirements

The following accessibility requirements are to be incorporated into the detailed design to ensure compliance of the built form.

Accessways Generally

The accessible path of travel refers to a pathway which is grade restricted and provides wheelchair access as per the requirements of AS1428 as follows:

a. The minimum unobstructed width of all pathways is to be 1000mm (AS1428.1, Clause 6.3). A width of 1200mm is preferred for compliance with AS1428.2.

b. All pathways are to be constructed with no lip or step at joints between abutting surfaces (a construction tolerance of 3mm is allowable, or 5mm for bevelling edges).

c. The maximum allowable crossfall of pathways is to be 1:40.

d. The ground abutting the sides of the pathways should follow the grade of the pathway and extend horizontally for 600mm. We note that this is not required where there is a kerb or handrail provided to the side of the pathway.

e. Pathways to have passing bays complying with AS1428.1 at maximum 20m intervals where a direct line of site is not available. They are required within 2m of the end of the pathway where it is not possible to continue travelling along the pathway. A passing space shall have a minimum width of 1800 for a minimum length of 2000mm. Refer to AS1428.1, Clause 6.4.

f. Grated drains within the accessible path of travel are to have circular openings no greater that 13mm in diameter and slotted openings not greater than 13mm wide – elongated openings must traverse the direction of travel.

Walkways

AS 1428.1 has access requirements for walkways as follows:

a. The minimum unobstructed width of walkways is to be 1000mm (AS1428.1, Clause 6.3). A width of 1200mm is preferred for compliance with AS1428.2.

b. Walkways are to be constructed with no lip or step at joints between abutting surfaces (a construction tolerance of 3mm is allowable, 5mm for bevelled edges -refer to Figure 6 of AS1428.1).

c. The maximum allowable crossfall of a walkway is to be 1:40.

d. Surface of the walkway to be slip-resistant.

e. The ground abutting the sides of the walkway should follow the grade of the pathway and extend horizontally for 600mm. This is not required where there is a kerb or handrail provided (refer to AS1428.1 Clause 10.2).

f. Maximum allowable gradient of the walkway is 1:20 and maximum length between landings to be 15m (for 1:20 gradient). Landings to be a minimum 1200mm in length (where there is no change in direction). For changes in direction of 180º, landings to be 1540mm in length – refer to AS1428.1(2009), Clause 10.8.

Accessible Ramps – External

AS 1428.1 has access requirements for accessible ramps as follows:

a. Ramp to comply with AS1428.1, Clause 10.3. Maximum allowable gradient of the ramp is 1:14, minimum clear width to be 1000mm (1500mm for curved ramps) and maximum length between landings to be 9m (for 1:14 gradient). Increased circulation areas are required at landings to facilitate wheelchair maneuverability.

b. Accessible ramp is to have a maximum rise of 3.6m (BCA Clause D4D12)

c. The ramp is required to be set back a minimum 900mm from the property boundary (AS1428.1, Clause 10.3 (f)). This allows tactile indicators and handrail extensions to occur within the boundary and not protrude into the footpath area.

d. Provide handrails, with extensions, to both sides of the ramp to comply with AS1428.1, Clause 12. Handrails to have an external diameter between 30-50mm to assist persons with a manual disability such as arthritis. Handrails are required on both sides of the ramp to cater for left and right handed disabilities.

e. Where ramp is not enclosed, provide kerb rails in accordance with AS1428.1. The height of kerb rails is to be less than 65mm or greater than 150mm above the finished surface level. This is to ensure that the foot plate of a wheelchair cannot become lodged on the kerb rail.

f. Provide tactile indicators at the top and bottom of the ramps to comply with BCA Clause D4D9 and AS1428.4. Tactile indicators to be detectable, durable, non-slip and have a minimum 30% luminance contrast to the background colour.

   Tactile indicators at the top and bottom of the ramps to be 600-800mm deep across the width of the ramp and set back 300mm from the edge of the ramp (refer AS1428.4, Figure A1).

Stairs – External

AS 1428.1 has access requirements for all public access stairs as follows:

a. Stairs to comply with AS1428.1(2009), Clause 11.2.

b. Stairs to have closed or opaque risers. Open risers cause confusion for persons with a vision impairment and may trigger conditions such as epilepsy due to light penetrating through the open riser.

c. Provide handrails, with extensions, to both sides of the stair (AS1428.1 (2009), Clause 11.2 & 12). Handrails to have an external diameter between 30-50mm to assist persons with a manual disability such as arthritis.

   Handrails are required on both sides of the stair to cater for left and right-handed disabilities.

d. Stair nosings to have minimum 30% luminance contrast strip 50-75mm wide to the top of the stair tread to assist persons with a vision impairment. The strip can be set back 15mm from the edge of the riser.

e. Stair nosings shall not project beyond the face of the riser.

f. Provide tactile indicators at the top and bottom of the stair to comply with BCA Clause D4D9 and AS1428.4.

   Tactile indicators to be detectable, durable, non-slip and have a minimum 30% luminance contrast to the background colour.

   Tactile indicators at the top and bottom of the stair to be 600-800mm deep across the width of the stair set back 300mm from the edge of the stair.

Accessible Entrances

Access requirements for entrances are as follows.

a. Entrance to comply with AS1428.1(2009), Clause 13 as part of the accessible path of travel.

b. Doors are to have a minimum clear opening width of 850mm to comply AS1428.1(2009), Clause 13.2 as part of the accessible path of travel.

c. Door threshold to be level to provide seamless entry as part of the accessible path of travel. Maximum allowable construction tolerance is 3mm for compliance with AS1428.1(2009), 5mm where beveled edges are provided between surfaces – refer to Figure 6.

d. Door to have hardware within the accessible height range of 900-1100mm above the finished floor level (AS1428.1(2009), Clause 13.5)

e. For glass doors, provide decals to assist persons with a vision impairment. Decals to be solid and have a minimum 30% luminance contrast to the background colour and be not less than 75mm high located within the height range of 900-1100mm above the finished floor level. Decals are to be solid. AS1428.1, Clause 6.6.

f. Where double door sets are provided, one door leaf is to be capable of being held in the closed position to provide door opening widths and circulation to comply with AS 1428.1.

g. For a best practice approach to access, and to assist people with a vision impairment locate the entrance, consider providing features with a minimum 30% luminance contrast to the background surface such as an entry mat or awning.

Circulation Areas Generally

BCA requires the provision of turning spaces and passing areas to corridors to enable wheelchair circulation throughout a building.

Turning spaces 1540mm wide by 2070mm long are required within 2m of the end of corridors to enable a wheelchair to turn through 90° and passing areas 1800mm wide by 2000mm long are required every 20m along a corridor unless there is a clear line of sight.

Within corridor areas, 1500x1500mm is required to facilitate a 90° turn by a wheelchair. This must be accommodated within accessible areas.

Doorways

Access requirements for doorways within the accessible path of travel are as follows:

a. Doorways within the accessible path of travel to have a minimum clear opening width of 850mm (AS1428.1(2009), Clause 13.2). We recommend the use of a 920 leaf door as a minimum to achieve adequate clear width.

   For double doors, the operable leaf must achieve this clear opening width to facilitate single leaf operation.

b. All doorways within the accessible path of travel to have complying circulation areas as illustrated in AS1428.1(2009), Figure 31. Circulation areas to have a maximum crossfall of 1:40.

c. Doors between indoor and outdoor spaces to have a level threshold for seamless transition.

d. Doorways to have minimum 30% luminance contrast as described in AS1428.1(2009), Clause 13.1.

e. Doors to have hardware within the accessible height range of 900-1100mm above the finished floor level (AS1428.1(2009), Clause 13.5).

Note that within a childcare centre, this is applicable to the unisex accessible sanitary facilities only.

f. Door handles and related hardware shall be able to be unlocked and opened with one hand per AS1428.1 (2009), Clause 13.5.1. The handles shall enable a person who cannot grip to operate the door without their hand slipping from the handle. We recommend the use of lever handles.

g. For manual controls to automatic doorways, buttons to be located no closer than 500mm from an internal corner and between 1000mm and 2000mm from the hinged door leaf or surface mounted sliding door in the open position. Height of controls to be 900-1100mm affl.

h. Doorways to external areas to achieve a level threshold as part of the accessible path of travel. Maximum allowable construction tolerance is 3mm for compliance with AS1428.1(2009), 5mm where beveled edges are provided between surfaces.

i. Doorways to have operational forces per AS1428.1 (2009), Clause 13.5.2. A maximum allowable force of 20N is required to operate the door.

Floor Finishes

All floor finishes are to be flush to provide an accessible path of travel throughout the different areas of the building. Maximum allowable construction tolerance is 3mm (5mm for bevelled edges) as part of the accessible path of travel. Refer to AS1428.1(2009), Clause 7.2 for further details.

Carpet

BCA requires that the pile height or pile thickness does not exceed 11 mm and the carpet backing thickness shall not exceed 4 mm.

Controls

Controls such as light switches, GPOs, alarm keypads, card swipes, etc are to be located within the accessible height range of 900-1100mm above the floor level and not within 500mm of an internal corner to comply with AS1428.1(2009), Clause 14.

We recommend that video intercoms be installed at 1200mm affl - this is within the range of common view per AS1428.2 (1992).

Visual Indication to Glazing

Provide decals to all full height glazing that can be mistaken for a doorway to assist persons with a vision impairment. Decals to be solid and have a minimum 30% luminance contrast to the background colour and be not less than 75mm high located within the height range of 900-1100mm above the finished floor level. Decals are to be solid.

Tactile Indicators

For a building that is required to be accessible, tactile ground surface indicators must be provided to warn people who are blind or have a vision impairment that they are

approaching a stairway (other than a fire isolated stair); an escalator; a moving walkway; a ramp (other than a fire isolated ramp, step ramp, kerb ramp or swimming pool ramp); and in the absence of a suitable barrier, an overhead obstruction less than 2m above the floor level or an accessway ,meeting a vehicular way if there is no kerb or kerb ramp (BCA D4D9).

Tactile indicators to be detectable, durable, non-slip and have a minimum 30% luminance contrast to the background color (45% for discrete tactile indicators and 60% for discrete two-tone tactile indicators).

Signage

Access requirements for signage are as follows. Note that this does not include general wayfinding signage.

a. Braille and tactile signage formats as outlined within BCA Specification 15 that incorporate the international symbol of access or deafness, as appropriate, in accordance with AS 1428.1 must be provided to identify the following:
   - a sanitary facility, except a sanitary facility associated with a bedroom in a Class 1b building or a sole-occupancy unit in a Class 3 or Class 9c building
   - a space with a hearing augmentation system
   - each door required by E5D5 to be provided with an exit sign and state level
   - an accessible unisex sanitary facility and identify if the facility is suitable for left or right handed use
   - an ambulant accessible sanitary facility 1 and be located on the door of the facility
   - where a pedestrian entrance is not accessible, directional signage incorporating the international symbol of access to direct a person to the location of the nearest accessible pedestrian entrance
   - where a bank of sanitary facilities is not provided with an accessible unisex sanitary facility, directional signage incorporating the international symbol of access must be placed at the location of the sanitary facilities that are not accessible, to direct a person to the location of the nearest accessible unisex sanitary

b. Braille and tactile components of the sign to be located not less than 1200mm and not higher than 1600mm affl.

c. Signage to be located at the latch side of the doorway with the leading edge of the sign 50-300mm from the architrave. Where this is not possible, the sign can be located on the door.

   Sample signs are as follows. These are examples only – ensure selected signage complies with BCA Specification 15 including provision of Braille locator for multiple lines of text and characters.

Passenger Lifts

The following access requirements apply to the lifts. These requirements are for disabled access only and do not include requirements for stretchers.

a. Lift is to comply with AS1735.12 and be fully automatic

b. Minimum internal dimensions of the lift car to be 1400mm wide x 1600mm deep a lift that travels over 12m or,
Minimum internal dimensions of the lift car to be 1100mm wide x 1400mm deep for a lift that travels less than 12m.

c. Clear opening of the lift door to be minimum 900mm.

d. Provide a handrail complying with the provisions for a mandatory handrail in AS1735.12.

e. All lift control buttons are to be in the accessible height range of 900-1100mm affl and have a minimum 30% luminance contrast to the background colour. This includes buttons within the lift car and at each public lift lobby. All buttons are to be provided with information in Braille and tactile formats.

f. Auditory / voice cues are to be provided within the lift car to assist persons with a vision impairment.

g. Series of door opening devices that will detect a 75mm diameter rod across the door opening between 50 mm and 1550mm above the floor level.

h. Emergency hands-free communication, including a button that alerts a call centre of a problem, a light to signal that the call has been received by the call centre and a light indicating assistance is being dispatched.

Stairs – Internal

Access requirements for public access stairs are as follows and should be addressed during construction to ensure compliance.

a. Stair construction to comply with AS1428.1, Clause 11.1.

b. Stairs to have closed or opaque risers. Open risers cause confusion for persons with a vision impairment and may trigger conditions such as epilepsy due to light penetrating through the open risers.

c. Where the stair intersects with an internal corridor, the stair shall be set back in accordance with AS2418.1 Figure 26C/D to allow adequate space for handrail extensions and tactile indicators.

d. Provide handrails, with extensions, to both sides of the stair (AS1428.1, Clause 11.2). Handrails to have an external diameter between 30-50mm to assist persons with a manual disability such as arthritis. Handrails should be continuous around the landings where possible.

   Handrails are required on both sides of the stair to cater for left and right-handed disabilities. A central handrail is also an acceptable solution where adequate width is available.

e. Stair nosings to have minimum 30% luminance contrast strip 50-75mm wide to the top of the stair tread to assist persons with a vision impairment. The strip can be set back 15mm from the edge of the riser.

f. Stair nosings shall not project beyond the face of the riser.

g. Provide tactile indicators at the top and bottom of the stair to comply with BCA Clause D4D9 and AS1428.4.1.

   Tactile indicators to be detectable, durable, non-slip and have a minimum 30% luminance contrast to the background colour. For discrete tactile indicators, 45% luminance contrast is required (60% where two-tone indicators are used).

Fire Isolated Egress Stairs

Designated fire egress stairs are not considered public access stairs and therefore are not subject to the requirements of AS1428.1 with the exception of contrasting nosing strips and handrail requirements. These are required per AS1428.1.

a. Stair nosings to have minimum 30% luminance contrast strip 50-75mm wide to the top of the stair tread to assist persons with a vision impairment. The strip can be set back 15mm from the edge of the riser.

b. Stair nosings shall not project beyond the face of the riser.

c. Handrails in a required exit serving an area required to be accessible, are to be designed and constructed to comply with AS 1428.1, Clause 12

   Note: handrails within fire-isolated stars are required to one side only and do not require the provision of handrail extensions. They must have a diameter between 30-50mm; be between 865-1000mm high above the noising; ne a consistent height along the length of the stair – no vertical sections; have a clearance to eh wall not less than 50mm; have no

obstruction along the length of its passage; and have an end that turns through 180, turns to the ground, or returns fully to an end post.

We recommend the use of the staggered stair to maintain a constant height along the length of the handrail per AS1428.,1 (2009), Clause 12.

Slip Resistance

The BCA defines the following slip resistance requirements for stairs and ramps:

Application	Surface Conditions	
	Dry	Wet
Ramp steeper than 1:14	P4 or R11	P5 or R12
Ramp steeper than 1:20 but not steeper than 1:14	P3 or R10	P4 or R11
Tread or Landing surface	P3 or R10	P4 or R11
Nosing or landing edge strip	P3	P4

Adaptable Units

An adaptable housing unit is defined by AS4299 as follows:

> *A housing unit which is designed and constructed to meet the performance requirements stated in the standard. It is designed in such as way that it can be modified easily in the future to become accessible to both occupants and visitors with disabilities of progressive frailties.*

There are requirements for both the pre-adaption state and post-adaption states. In the pre-adapted state, an adaptable unit is required to be “visitable” and these requirements are applicable at the time of construction. Other elements are to be provided on adaption of the unit.

At **time of construction**, the following are required:

- An accessible entrance per AS1428.1 (2009).
- A visitable toilet at the entry level per AS4299
- An accessible path of travel from the entrance to the visitable toilet within the meaning of AS1428.1 (2009)
- An accessible path of travel from the entrance to the living area within the meaning of AS1428.1 (2009)

At **time of adaption**, the following are required:

- Compliance with AS4299 Appendix A – essential criteria. This includes kitchen layouts, laundry layouts, carparking, etc

The following requirements for adaptable apartments are based on AS4299, Section 4 – Design of the Housing Unit, essential criterion as listed in Appendix 1, AS4299 Schedule of Features for Adaptable Housing. Compliance with the following features will achieve a Class C adaptable housing unit.

Private Car Accommodations

Private carparking spaces for adaptable housing units shall be large enough to enable a person with a wheelchair to get in and out of both the car and the parking space. A width of 3.8m is necessary to enable the driver to alight, open the passenger door and assist a person with a disability into a wheelchair. A clear vertical clearance of 2.5m is desirable.

The introduction of AS2890.6 in 2009 offers an approach to the provision of accessible carparking that can be easily accommodated in a standard carparking layout. It offers an accessible space 2400mm wide with a circulation area 2400mm wide adjacent to the space (4800mm for a single space). The circulation area can be "shared" between two accessible spaces (7200mm for two spaces). This offers carparking spaces in excess of the minimum requirement of AS4299 (3800mm).

Letterboxes

Letterboxes to adaptable housing units should be located on a hard standing area connected by an accessible path of travel to the adaptable housing unit. Letterboxes to adaptable apartments should be provided within the accessible height range of 900-1100mm affl.

Accessible Entrance

Entrances to adaptable housing units are to comply with AS4299 Clauses 4.3.1 and 4.3.2. AS4299 which require that the entry doors comply with AS1428.2 at time of construction. The minimum clear opening width of the doorway is to be 850mm and allow for wheelchair maneuverability (provide minimum 1550mm long area in front of the doorway). Entrances to the adaptable housing units to be weatherproofed.

Door hardware is to comply with AS1428. In this regard, entry door hardware is to be in the accessible height range of 900-1100mm above finished floor level. The use of lever handles is encouraged to assist persons with a manual disability such as arthritis.

Doorways

Doorways throughout adaptable housing units are required to have a clear opening width of 820mm. At time of construction, an accessible path of travel within the meaning of AS1428.1 is required from the entrance to the visitable toilet and living area. Other door circulation areas are to comply with AS1428.1 on adaption of the unit.

All door hardware is to be operable with one hand and in the height range of 900-1100mm above the floor level. The use of lever handles is encouraged to assist persons with a manual disability such as arthritis.

Internal Corridors

There is a requirement for all corridors to be minimum 1000mm.

Visitable Toilet

Each adaptable housing unit is required to have a toilet on the entry floor that is a visitable toilet within the meaning of AS4299 at time of construction. The toilet is to be installed in compliance with AS1428 (correct set-out distance from fixed walls) and have the capacity to accommodate a grabrail that complies with Figure 4.5 of AS4299. A circulation area 1200mm x 900mm in front of the toilet and clear of door swings and fixtures is required complying with Figure 1.1 of AS4299. Slip resistant floors are also required.

Bathrooms

Bathrooms within an adaptable housing unit are to comply with AS1428 after adaption. Issues to be considered include slip resistant floor, shower minimum 1100x1160mm with future provision for accessible features including handheld shower and grabrails, shower waterproofing to AS3740, recessed soap holder, washbasin with knee clearance, adequate circulation areas, automatic control of hot water, double GPO next to the mirror and the provision of capstan or lever taps. Refer to AS4299, Clause 4.4.4.

Kitchens

Essential requirements for kitchens within an adaptable housing unit allow for future adaption and include items such as sinks, taps, cooktops, location of oven, cupboard handles, general power outlets, dimensions of the space and location of refrigerator.

Kitchens are required to have a clear space between benches of 1550mm. An area of bench top 800mm wide is required that can be adjusted through the height range of 750 – 850mm above floor level. Alternatively, a section of this dimension needs to be easily replaceable to achieve this requirement.

Bedrooms

At least one bedroom within an adaptable housing unit is required to have adequate space for a wardrobe and a queen size bed with minimum 1540mm wide circulation at the foot of the bed (for compliance with AS1428.2, Clause 6.1).

Living Area

Living areas within an adaptable housing unit are required to have circulation areas that allow a wheelchair to maneuver within the space at time of construction. In this regard, an area with 2250mm diameter is required, clear of furniture. AS4299, Clause 4.7 outlines this requirement. A telephone outlet adjacent to a general power outlet is also a requirement for living areas.

Laundry

Requirements for laundry areas within adaptable housing units include the provision for an automatic washing machine / clothes dryer with clear space in front of the appliances. An area of 1550mm diameter will achieve this requirement. Laundries are to have slip resistant floors and door circulation areas in compliance with AS1428.1.

Floors Generally

AS4299 requires that all floor surfaces including bathrooms, laundry and external paved surfaces be slip resistant to comply with AS3661.1.

Non-essential items include that after modification, carpets should have short pile and consideration should be given to the fire hazard indices. Floors should be easily cleanable and bold patterns should be avoided to eliminate confusion for persons with vision impairment.

Ancillary Items

Ancillary items are not considered essential items. Switches such as light switches must be located within the accessible height range of 900-1100mm above the floor level.

Power outlets should be located at a height not less than 600mm affl – a height of 1000mm is preferred. They should be located not less than 500mm from internal corners.

Livable Housing – SILVER LEVEL

Livable housing requirements for Silver Level are summarised below:

Dwelling Access

There is a safe, continuous, step-free pathway from the street entrance and/or parking area to a dwelling entrance that is level.

- Path of travel to be minimum 1000mm wide with no steps and even, non-slip surface; crossfall shallower than 1:40; and maximum slope of 1:14.
- Where ramps are required, landings at 9m intervals are to be provided and are to be not less than 1200mm in length.
- Where a carparking space is relied upon as the safe and continuous pathway to the dwelling, it should be at least 3200mm wide….
- Step ramps where provided to have a maximum gradient of 1:10, clear width of 1000mm and maximum length of 1900mm.
- Where ramps adjoin gates or doorways, landings no less than 1200mm in length, exclusive of the door swing, are required.

Dwelling Entrance

There is at least one level (step-free) entrance into the dwelling to enable home occupants to easily enter and exit the dwelling.

- Entrance doors to have a clear opening with of 820mm and have a level transition (5mm allowable tolerance – where in excess of 5mm, threshold ramp up to 56mm high is allowable)).
- Reasonable shelter from the weather is required.
- 1200x1200mm level landing area required on the arrival side of the door.

Internal Corridors and Doors

Internal doors and corridors facilitate comfortable and unimpeded movement between spaces.

- Doorways on the entry level used for living, dining, bedroom, bathroom, kitchen, laundry and sanitary compartment purposes to have a clear

opening with of 820mm and level transition between surfaces (5mm allowable tolerance).
- Corridors to be 1000mm wide.

Toilet

The ground (or entry) level has a toilet to support easy access for home occupants and visitors.

- A toilet on the ground / entry floor is required to have a circulation area in front of the toilet pan 900x1200mm.
- Toilet pan is to be provided in a corner of a room.

Shower

The bathroom and shower are designed for easy and independent access for all home occupants.

- A bathroom is required to have a non-slip hobless shower, located on the corner of the room.

Reinforcement of Bathroom & Toilet Walls

The bathroom and toilet walls are built to enable grabrails to be safely and economically installed.

- Walls to enable safe installation of grabrails to toilet, bath and shower.
- Reinforcement to be in the form of 25mm noggins or plywood sheeting with 12mm thickness.

Internal Stairways

Where installed, stairways are designed to reduce the likelihood of injury and also enable future adaptation.

- Stairs to have a continuous handrail to one side of the stair where the rise is greater than 1m.

Appendix 2 | Best Practice Options for Consideration

We recommend a best practice approach to accessibility that goes beyond minimum standards and embraces the intent of the DDA. The following measures will promote inclusion and participation for all users.

Terminology (Best-practice recommendation)

The use of positive terminology such as “accessible” should be used when referring to accessible facilities such as toilets and carparking. This term is preferable to “disabled” which is commonly used. This principle is to be adopted through the design and documentation of a project and on signage throughout the completed building.

Accessways

We recommend that the accessible path of travel be a minimum 1200mm wide to comply with AS1428.2. Wider pathways will allow easy access for more people who have a permanent disability, people with a temporary disability, people pushing prams and elderly people using walking frames and the like. This is in keeping with the principles of Universal Design.

For a wheelchair and a pram to pass 1500mm is required and for two wheelchairs to pass requires 1800mm.

Automatic Entrance Doors

The provision of automatic sliding doorways maximizes access for people with a disability. Further, delivery drivers, people carrying parcels and the elderly also benefit from the provision of automatic doors.

Automatic doors provide safe, convenient access for everyone, regardless of age or ability in keeping with universal design principles. They also offer COVID-19 mitigation measures, reducing the transfer of germs and bacteria.

Fire Egress Doors

We recommend that fire egress doors achieve a clear opening width of 850mm as per doorways within the accessible path of travel.

This permits the use of the landings within fire isolated egress stairs to be used as a shelter in place option for people with disabilities.

Places of Comparative Safety

Consider providing a refuge area within fire isolated stairs by incorporating a 800mm x 1300mm area at stair landings of every accessible floor. A 1000mm unobstructed egress width to the area should be provided.

We recommend that signage displaying the International Symbol of Access (ISA) be provided to identify any places of comparative safety provided. Signage should state that the area is safe in the event of an emergency. Evacuation procedures for the building should address the provision of places of comparative safety for people with limited mobility.

We also recommend that as a part of the emergency evacuation plan for the building, egress for persons requiring assistance be addressed. The provision of places of

comparative safety within fire isolated passages would be advantageous to persons with a disability. This consists of a waiting area large enough to accommodate a wheelchair where persons can wait for assistance from emergency services. The waiting area should be identified with appropriate signage that incorporates the International Symbol for Access.

Lighting and Glare

Minimum interior lighting levels should generally consider AS1428.2 (1992) Clause 19. Consistent lighting levels should be provided throughout, without pools of light or dark areas. AS1428.2 (1992) recommends the following minimum illumination levels:

- Entrances 150lx
- Passages and walkways 150lx
- Stairs 150lx
- Toilets and Locker rooms 200lx
- Counter tops 250lx
- General displays 200-300lx

Glare and excessively reflective surfaces should be avoided. This includes glare from windows.