



Access Report

PLH Ashton

23-25 Ashton Avenue
THE ENTRANCE NSW

For: Pacific Link Housing

Ref: PAA_23122



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:			
Lindsay Perry	Draft	Issued for review	2 March 2026
Lindsay Perry	Revision 1	Issued for SSDA	5 March 2026

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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

State Significant Development Application documentation for the PLH Ashton project located at 23-25 Ashton Avenue The Entrance, 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
6.2	Accessible Carparking to Entrance	Compliant
6.3	Accessways (Pathways Generally)	Compliant configuration
6.4	Accessible Carparking	Compliant configuration
6.5	Accessible Entrances	Compliant configuration
Interior		
7.1	Extent of Access Generally	Compliant
7.2	Circulation Areas	Compliant
7.3	Doorways	Compliant configuration
7.4	Hearing Augmentation	Not applicable
7.5	Exempt Areas	None specified
7.6	Floor Finishes	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
Sanitary Facilities		
8.1	Distribution	Compliant
8.2	Accessible Toilets	Capable of compliance
Vertical Circulation		
9.1	Lifts	Capable of compliance
9.2	Accessible Ramp	Capable of compliance
9.3	Fire Isolated Egress Stairs	Capable of compliance
9.4	Slip Resistance (Ramps & Stairs)	To be addressed during detailed design
Adaptable Housing		
Pre Adaption Requirements		
10.1	Accessible Entrance	Compliant Configuration
10.2	Visitable Toilet	Compliant Configuration
10.3	Accessible Path of Travel	Compliant Configuration
Post Adaption Requirements		
10.4	Car Accommodations	Compliant Configuration
10.5	Letterbox	Compliant
10.6	Doorways	Compliant Configuration
10.7	Internal Corridors	Compliant Configuration
10.8	Bathroom	Compliant Configuration
10.9	Kitchen	Compliant Configuration
10.10	Bedroom	Compliant Configuration
10.11	Living Area	Compliant Configuration



Item No.	Description	Compliance Status
10.12	Laundry	Compliant Configuration
10.13	Floors Generally	To be addressed during detailed design
10.14	Ancillary Items	To be addressed during detailed design
SEPP 65 Universal Housing Requirements Livable Housing Silver level		
11.1	Dwelling Access	Compliant
11.2	Dwelling Entrance	Capable of compliance
11.3	Internal Corridors and Doors	Capable of compliance
11.4	Toilet	Compliant
11.5	Shower	Compliant
11.6	Reinforcement of Bathroom Walls	To be addressed during detailed design
11.7	Internal Stairways	Not applicable

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 Purple Apple Australia Pty Ltd. This may differ from that of other consultants.

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1 Project Background

The proposed development offers fifty (50) residential units over five (5) levels with carparking provided at the ground floor along with a retail tenancy. The units have been provided as one- and two-bedroom options.



Figure 1 | Proposed Development

2 Reviewed Documentation

Documentation prepared by Space Architecture Design (SDA) has been reviewed as follows:

dwg no.	drawing name	revision
DD000	Cover Page	D
DD001	Legend Notes Drawing List	D
DD002	Basix Commitments	D
DD003	3D Perspectives Sheet 1	D
DD004	3D Perspectives Sheet 2	D
DD005	3D Perspectives Sheet 3	D
DD006	Building Envelope – North	D
DD007	Building Envelope – East	D
DD008	Development Summary	C
DD100	Site Analysis Plan	D
DD101	Site Plan	D
DD102	Existing Demolition Site Plan	D
DD103	External Plan	D
DD104	Landscape Plan & Communal Area	A
DD200	Ground Floor Plan	G
DD201	First Floor Plan	G
DD202	Second Floor Plan	G
DD203	Third Floor Plan	G
DD204	Fourth Floor Plan	G
DD205	Fifth Floor Plan	G
DD206	Sixth Floor Plan	G
DD207	Roof Plan	F
DD300	Elevations Sheet 1	D
DD301	Elevations Sheet 2	D
DD302	Elevations Sheet 3	D
DD303	Materials & Finishes	A

dwg no.	drawing name	revision
DD401	Sections Sheet 1	D
DD500	Shadow Diagrams Sheet 1	D
DD501	Shadow Diagrams Sheet 2	D
DD502	Shadow Diagrams Sheet 3	D
DD500	Shadow Diagrams Sheet 4	A
DD501	Shadow Diagrams Sheet 5	A
DD502	Shadow Diagrams Sheet 6	A
DD500	Shadow Diagrams Sheet 7	A
DD503	Overshadowing	D
DD504	Solar Access Diagrams	C
DD505	Cross Ventilation Diagram	C
DD506	Glazed Door & Window Schedule	C
DD507	Glazed Door & Window Schedule	C
DD508	Glazed Door & Window Schedule	C
DD509	Glazed Door & Window Schedule	C
DD510	Glazed Door & Window Schedule	C
DD511	Glazed Door & Window Schedule	C
DD512	Glazed Door & Window Schedule	C
DD513	Glazed Door & Window Schedule	C
DD600	Notification Plan	D

3 Council DCP Requirements for Accessibility

We understand that a Pre-Development Advice meeting was held on 9 February 2026. These minutes of this meeting note the following regarding accessibility:

Housing Diversity and Social Interaction

- Persons with disabilities or restricted/impaired mobility area should be catered for through the provision of apartments for future adaptability, compliant with relevant Australian Standards.
- Provide a lift in the building to allow for wheelchair access to be accommodated to the entry door of all units on all floors for people with disabilities as required by the BCA.

Commentary:

We consider that the development is deemed to meet the above-mentioned requirements. All units have been designed to meet the silver level requirements of the LHA Design Guidelines (also referred to as Universal Housing under the ADG) with five (5) units provided as adaptable / accessible units.

There are two (2) lifts provided for access between all levels of the building. This allows for lift redundancy in the event that one of the lifts is not operational.

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 – Compilation No. 3, 23 November 2024 including Schedule 1 Access Code for Buildings
- The National Construction Code Building Code of Australia Volume 1 2022 Amendment 2 (BCA)
 - Part D3 D15 Landings (Slip Resistance)
 - Part D3 D22 Handrails
 - Part D4 – Access for People with Disabilities
 - Section E3D7 / ED38 – Lifts
- Australian Standard AS1428.1 (2021) – Design for Access and Mobility
- Australian Standard AS1428.2 (1992) – Design for Access and Mobility: Enhanced and additional requirements – Buildings and facilities
- 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
- Australian Standard AS2890.6 (2009) – Parking Facilities – Off street carparking For People with Disabilities.
- Australian Standard AS1735.12 – Lifts, escalators and moving walks: Lifts for persons with a disability
- Australian Standard AS4299 – Adaptable Housing
- State Environmental Planning Policy (Housing) 2021– Part 43C and Part 147 – Apartment Design Guide – July 2015
- 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.

For Class 2 buildings (residential units), 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.

For Class 5 buildings (commercial tenancy) access for people with disabilities is required to and within all areas normally used by the occupants.

For Class 7a buildings (carparking) access for people with disabilities is required to and within any level containing an accessible carparking space.

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.

AS2890.6 – Off-street Carparking for People with Disabilities

AS2890.6 (2009) applies to the carparking areas generally.

AS1735– Lifts, escalators and moving walks

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

AS4299 Adaptable Housing

AS4299 (1993) 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

The Disability (Access to Premises – Buildings) Standards 2010 (often called the Premises Standards) were introduced under the Disability Discrimination Act 1992 to ensure that new buildings, and new work on existing buildings, are designed and constructed so that they are accessible to people with disability.

They set out the minimum accessibility requirements that must be met in the design, construction, and certification of new buildings and major renovations in Australia. Their purpose is to ensure that people with disability have equitable, dignified, and safe access to public buildings and facilities. Working in tandem with the Building Code of Australia (BCA), the Premises Standards specify technical provisions such as accessible entrances, paths of travel, ramps, lifts, toilets, signage, car parking, and hearing augmentation.

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. While the introduction of NCC 2022 caused 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).

A **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 people with disabilities. The BCA has three requirements for the approach to the building with respect to accessibility. 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 from the main points of the pedestrian entry along Ashton Avenue at the allotment boundary, and from the required accessible carparking space on the allotment

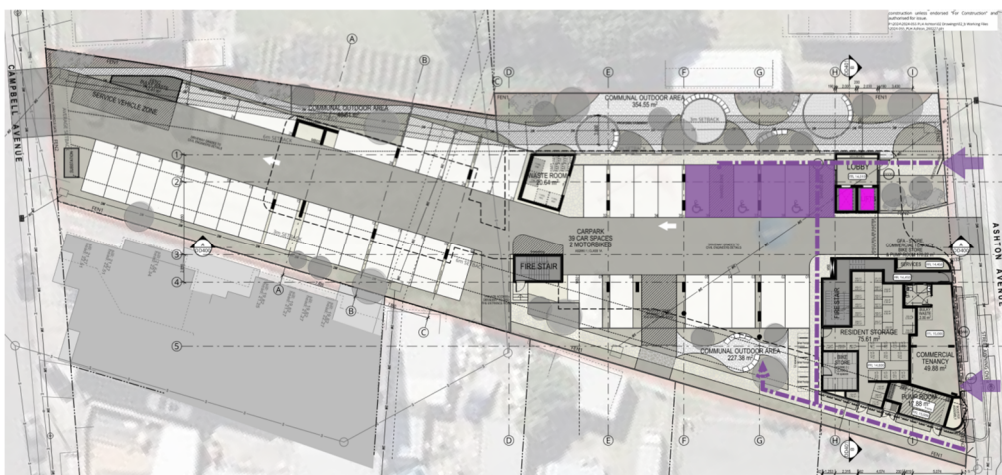


Figure 2 | Overall Site Plan

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

Commentary:

An accessible path of travel is provided to the building entrance from the allotment boundary along Ashton Avenue via a formed footpath. Site levels indicate that on-grade access is achievable.

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:

Compliant

Commentary:

An accessible path of travel is provided to the building entrance via a formed footpath. Site levels indicate that on-grade access is achievable.

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 AS 1428.

Compliance Summary:

Compliant configuration

Commentary:

Footpaths that form the approach to the building and external areas generally, are a minimum of 1220mm wide. Site levels indicate a level surface is achievable.

6.4 Accessible Carparking

Accessible car parking is provided within this development. Three (3) spaces are provided in close proximity to the residential entrance / lift lobby noting that there are no NCC requirements for the provision of accessible car parking within residential developments (Class 2).

Compliance Summary:

Compliant configuration

Commentary:

Carparking is provided at the ground floor level of the development. A total of thirty-nine (39) spaces are provided including three (3) accessible spaces.

The overall configuration of the accessible carparking achieves compliance with current legislation including dimensions of the space and associated shared areas, chevron markings and provision of a bollard.

Sections indicate there is adequate head height over the accessible carparking.

6.5 Accessible Entrances

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.

Compliance Summary:

Compliant configuration

Commentary:

Single hinged doorways provide entry to the residential lobby and commercial tenancy. Each door offers compliant circulation areas. Ensure that the selected doors enable a clear opening width of 850mm.

A level threshold hold is achievable at each doorway.

7 BCA | Interior

The building is designed over seven (7) levels and accommodates a retail tenancy at Ground Floor with residential units above. The interior areas subject to accessibility requirements include the Commercial Tenancy and residential common areas. The following do not apply to individual residential 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.

For a **commercial development** (Class 5), access for people with disabilities is required to and within all areas normally used by the occupants.

Compliance Summary:

Compliant

Commentary:

Access is provided to and within all areas within the commercial tenancy.

Access is provided to the entry door of all residential units and to areas used in common by the residents.

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

Commentary:

Compliant circulation space has been provided throughout the building. Wheelchair turning areas are available at the ends of corridors. While the corridors are approximately 1325mm wide and 28,400mm in length, there is a clear line of site along the corridor at each level.

7.3 Doorways Generally

AS 1428.1 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.

Doorways to external areas are required to have a level threshold to facilitate wheelchair access.

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.

We also recommend that doorways to individual apartments achieve a clear opening width of 850mm to promote visibility.

7.4 Hearing Augmentation

For buildings that are required to be accessible, the BCA (Clause D4D8) requires hearing augmentation systems within auditoriums, meeting rooms, and the like, and at service counters where the user is screened from the service provider if an inbuilt amplification system, other than the one used for emergency warning is installed.

Compliance Summary:

Not applicable to this development.

7.5 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: plant and service areas generally.

7.6 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.

Compliance Summary:

To be addressed during detailed design stages

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 AS 1428.1, Clause 10.

We recommend that video intercoms be installed at 1200mm affl - this is within the range of common view per AS 1428.2 (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.

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).

Compliance Summary:

Compliant configuration

Commentary:

Tactile indicators are shown to ramps.

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 AS 1428.1 Clause 5.

Compliance Summary:

To be addressed during detailed design stage.

8 BCA | Sanitary Facilities

The BCA / Access Code for Buildings (Clause F4D5) require the provision of sanitary facilities catering for people with disabilities.

8.1 Distribution of Accessible Sanitary Facilities

Accessible sanitary facilities are required as follows – these are general requirements and not project specific.

- A unisex accessible toilet at each level that provides sanitary facilities. Where more than one bank of toilets is provided at any level, at least 50% of those banks are required to have an accessible toilet facility.
- At each bank of toilets where there is one or more toilets in addition to a unisex accessible sanitary compartment, a sanitary compartment suitable for a person with an ambulant disability must be provided for use by males and females. (not required within this development).
- A unisex accessible shower is required where showers are required by F4D7. (not required within this development).
- A unisex accessible adult change facility must be provided in some public buildings (not required within this development).

Within a Class 2 building, where sanitary compartments are provided in common areas, not less than one (1) unisex accessible sanitary compartment is required. Where showers are provided in common areas, not less than one (1) accessible unisex shower is to be provided.

Compliance Summary:

Compliant

Commentary:

A unisex accessible sanitary facility is provided within the Commercial tenancy.

There are no sanitary facilities provided for use in common by the residents.

8.2 Unisex Accessible Sanitary Compartment

A unisex accessible sanitary compartment is provided within this development.

Compliance Summary:

Capable of compliance

Commentary:

Overall room dimensions and the arrangement of fixtures is conducive to compliance with current accessibility legislation.

9 BCA | Vertical Circulation

Lifts provide the main means of access between levels of the building. Two lifts are provided within the development. Stairs within the building are fire isolated egress stairs. Ramps are provided within corridor areas at the first and second floor levels.

9.1 Passenger Lifts

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:

Two lifts are provided for access between levels.

The overall size of the lift shafts is capable of accommodating a lift car of adequate dimensions for compliance with BCA (1400 x 1600mm internal floor area required with 900mm clear opening to door).

Adequate circulation areas are provided at lift landings for wheelchair turning / maneuvering.

Ensure that lift call buttons at landings are not located within 500mm of an internal corner.

The provision of more than one lift allows for redundancy measures in the event that one lift is not operational.

9.2 Accessible Ramps

AS 1428.1 defines an accessible ramp as having a gradient between 1:19 and 1:14. For curved ramps with a gradient of 1:14, a minimum width of 1500mm is required and the minimum allowable radius is to be 1900mm (AS 1428.1, clause 7.3).

Compliance Summary:

Not yet compliant

Commentary:

A ramp is provided at the first and second floor level. It is documented with a gradient of 1:14, handrails with extensions to both sides and tactile indicators at the top and base – these elements offer compliance with AS1428.1 accessibility requirements. The 1500mm clear width for a curved ramp is achieved. Detailed design will need to ensure provision of kerbrails to both sides of the ramp.

9.3 Fire Isolated Egress Stairs

Designated fire egress stairs are not considered public access stairs and therefore are not subject to the requirements of AS 1428.1 with the exception of contrasting nosing strips and handrail requirements. These are required per AS 1428.1.

Compliance Summary:

Capable of compliance

Commentary:

Stairs are provided throughout the development to enable egress in the event of a fire.

We note the provision of offset treads to maintain a constant height along the length of the handrail per AS 1428.1, Clause 9.

Ensure that contrasting non-slip nosing strips are provided to fire stairs.

9.4 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.

10 Adaptable Housing (Council Requirement)

There are five accessible / adaptable units provided within the development. Unit 103, 203, 303, 402 and 502. They have been designed to accommodate wheelchair access.

As these are private dwellings for residential use, we have considered the layout against AS4299 Adaptable Housing to maximise functionality and flexibility for the end user. 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 AS 1428.1.
- A visitable toilet at the entry level per AS 4299
- A path of travel from the entrance to the visitable toilet and living area

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

- Compliance with AS 4299 Appendix A – essential criteria. This includes kitchen layouts, laundry layouts, carparking, etc.

The following requirements for adaptable apartments are based on AS 4299, Section 4 – Design of the Housing Unit, essential criterion as listed in Appendix 1, AS 4299 Schedule of Features for Adaptable Housing. Compliance with the following features will achieve a Class C adaptable housing unit.

Pre-Adaption Requirements:

10.1 Accessible Entrance

Entrances to adaptable housing units are to comply with AS 4299 Clauses 4.3.1 and 4.3.2. AS 4299 which require that the entry doors comply with AS 1428.2 **at time of construction**. The minimum clear opening width of the doorway is to be 850mm and allow for wheelchair manoeuvrability (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 AS 1428. 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:

Compliant configuration

Commentary:

The entry doorway to each adaptable unit offers areas conducive to an accessible entrance.

10.2 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 AS 4299 **at time of construction**. The toilet is to be installed in compliance with AS 1428 (correct set-out distance from fixed walls) and have the capacity to accommodate a grabrail that complies with Figure 4.5 of AS 4299. The visitable toilet door is required to have a clear opening width of 820mm.

A visitable toilet is defined as a toilet which has a space of minimum 1250 x 900mm in front of the toilet clear of door swings.

Compliance Summary:

Compliant configuration

Commentary:

Bathroom within each adaptable unit offers a visitable toilet arrangement described above.

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

The performance requirements of AS 4299 require the provision of a path of travel from the entrance to the visitable toilet and a living area.

Compliance Summary:

Compliant configuration

Commentary:

Access is provided between the entry doorway and the living areas and also to the bathroom within each adaptable unit.

Post Adaption Requirements:

10.4 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 (AS 4299, Clause 3.7.2). A clear vertical clearance of 2.5m is desirable.

The introduction of AS 2890.6 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 AS 4299 (3800mm).



The abovementioned configuration has been adopted in the provision of carparking for the adaptable unit. With regard to the strata plan, the shared space could become a part of the common title to ensure it remains a circulation area.

Compliance Summary:

Compliant configuration

Commentary:

Carparking for the adaptable units has been provided at the ground floor level with other residential parking. The configuration is in keeping with AS2890.6.

10.5 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

Commentary:

Letterboxes are provided within the entrance / lift lobby at the ground floor level. An accessible path of travel is provided from the letterboxes to the entrance of each adaptable unit.

10.6 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 AS 1428.1 is required from the entrance to the visitable toilet and living area. Other door circulation areas are to comply with AS 1428.1 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:

Compliant configuration

Commentary:

Doorways are provided with adequate circulation areas for compliance with AS1428.1.

10.7 Internal Corridors

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

Compliance Summary:

Compliant

Commentary:

The design of the adaptable units eliminates corridors.

10.8 Bathroom

Bathrooms within an adaptable housing unit are to comply with AS 1428 after adaption. Issues to be considered include slip resistant floor, shower minimum 1100 x 1160mm with future provision for accessible features including handheld shower and grabrails, washbasin with knee clearance and adequate circulation areas,. Refer to AS 4299, Clause 4.4.4.

Compliance Summary:

Compliant configuration

Commentary:

Bathroom offers dimensions conducive to an accessible bathroom – circulation areas are shown on the floor plans.

10.9 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:

The kitchen within each adaptable unit offers circulation areas as described above.

10.10 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 AS 1428.2, Clause 6.1.

Compliance Summary:

Compliant

Commentary:

Bedroom offers compliant circulation areas – shown dashed on the floor plans.

10.11 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. AS 4299, 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

Commentary:

The living area within the adaptable unit is an open-plan area which meets the circulation requirements of AS 4299.

10.12 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 AS 1428.1.

Compliance Summary:

Compliant

Commentary:

Laundry offers compliance being in a cupboard configuration.

10.13 Floors Generally

AS4299 requires that all floor surfaces including bathrooms, laundry and external paved surfaces be slip resistant to comply with AS 3661.1.

Compliance Summary:

To be addressed during detailed design

10.14 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

11 Universal Housing Requirements

SEPP Housing 2021 makes reference to Universal Housing through the Apartment Design Guide (ADG). Section Q4 Universal Design includes a benchmark of 20% of the total apartments to incorporate the Livable Housing Australia Design Guidelines (LHADG) silver level features.

With the development, ALL units have been designed to reflect the requirements of the LHADG for silver level as summarised below.

11.1 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.

Compliance Summary:

Compliant

Commentary:

It is noted that the BCA requirements for accessibility are in keeping with LHA silver level requirements for dwelling access.

11.2 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.

Compliance Summary:

Compliant configuration |

Commentary:

Entrances offer shelter and the required landing area (1200x1200mm).

Door sizes and threshold details to be addressed during detailed design.

11.3 Internal Corridors and Doors

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

Compliance Summary:

Compliant configuration

Commentary:

Corridors offer adequate clear width (1000mm between skirting boards is achievable). Door sizes to enable 820mm clear opening to be addressed during detailed design.

11.4 Toilet

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

Compliance Summary:

Compliant

Commentary:

There is a toilet within each unit that is located in the corner of the room and achieves a 900x1200mm circulation area in front of the pan. For Units 401 & 501, the detailed design will need to provide a solid wall to shower enclosure for future grabrail.

11.5 Shower

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

Compliance Summary:

Compliant

Commentary:

There is a shower within each unit that is located in the corner of the room and offer step free access.

11.6 Reinforcement of Bathroom & Toilet Walls

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

Compliance Summary:

To be addressed during detailed design stages.

11.7 Internal Stairways

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

Compliance Summary:

Not applicable to this development



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 2.3). 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 3.4.
- f. Grated drains within the accessible path of travel are to have circular openings no greater than 13mm in diameter and slotted openings not greater than 13mm wide and not longer than 150mm – elongated openings must traverse the direction of travel.

Accessible Carparking

Access requirements for the accessible carparking are as follows and should be addressed during preparation of the construction certificate documentation.

- a. Accessible carparking to be a minimum of 2400mm wide with a shared area to one side of the space 2400mm wide. Circulation space can be shared between adjacent accessible carparks. For a single space, a total width of 4800mm is required.

For parallel parking arrangements, the accessible space is to be a minimum 3200mm wide x 7800mm long. A shared area 1600mm wide is required at the same level of the parking space.

- b. Provide a bollard to the shared circulation space as illustrated in AS2890.6, Figure 2.2.

- c. The maximum allowable crossfall of accessible carparking area to be 1:40. This crossfall applies both parallel and perpendicular to the angle of parking.
- d. For covered carparking, the clear height of the accessible carparking space to be 2500mm as illustrated in AS2890.6, Figure 2.7.
- e. Designated accessible carparking is to be identified using the International Symbol for Access (ISA) between 800 and 1000mm high placed as a pavement marking in the centre of the space between 500-600mm from its entry point. The perimeter of the space is to be identified by an unbroken yellow & slip resistant line 80-100mm wide (except where there is a kerb or wall)
- f. Shared space to be identified using yellow slip-resistant & unbroken stripes 150 to 200mm wide with spaces 200 to 300mm between stripes. Stripes to be at an angle of 45° to the side of the space.

Accessible Entrances

Access requirements for entrances are as follows.

- a. Not less than 50% of all pedestrian entrances including the principal pedestrian entrance must be accessible.
- b. Entrance to comply with AS1428.1, Clause 10 as part of the accessible path of travel.
- c. Doors are to have a minimum clear opening width of 850mm to comply AS1428.1, Clause 10.2 as part of the accessible path of travel (measured from the face of the opened door to the doorstep per AS1428.1, clause 10.2).
- d. 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 5mm where beveled edges are provided between surfaces.
- e. Door to have hardware within the accessible height range of 900-1100mm above the finished floor level (AS1428.1, Clause 10.5)
- f. 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 3.6.
- g. 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.

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 (measured from the face of the opened door to the doorstop per AS1428.1, clause 10.2). For hinged doors, we recommend the use of a 920mm leaf door as a minimum to achieve adequate clear width, **unless it is a fire or smoke door**, in which case 970mm leaf minimum is usually required. For sliding doors, a 1020mm minimum leaf is required to accommodate the 850mm opening, door D-Pull handle, and 60mm clearance each side of the handle.

For double doors, the dominant leaf must achieve this 850mm clear opening width to facilitate single leaf operation. The NCC D4D3 requires where a doorway on an accessway has multiple leaves (except an automatic opening door), one of those leaves must have a clear opening width of not less than 850 mm in accordance with AS 1428.1.

- b. All doorways within the accessible path of travel to have complying circulation areas as illustrated in AS1428.1, Figure 31 & 32. 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, Clause 10.1.
- e. Doors to have hardware within the accessible height range of 900-1100mm above the finished floor level (AS1428.1), Clause 10.5). 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, Clause 10.5.1. 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 500mm and 1000mm 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, 5mm where beveled edges are provided between surfaces.
- i. Doorways to have operational forces per AS1428.1, Clause 10.5.2. 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 4.2 for further details.

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, Clause 11. 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.

As a guide, AS1288 (2006) states that the following glazed areas are not considered capable of being mistaken for a doorway:

- The width is less than or equal to 500mm
- The height is less than or equal to 1000mm
- The lowest point of the opening is 500mm or greater above the floor level
- The glazing is opaque, patterned or a leadlight
- Where a chair / crash rail, handrail or transom is provided and located with its upper edges not less than 700mm or its bottom edge not more than 1000mm above the floor
- The panels are louvres with a blade width not greater than 230mm
- The glazing protects a difference in level of 1000mm or more (a balustrade system)

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 1



Unisex Accessible Sanitary Compartment

Access requirements for the accessible toilet facilities are as follows. These are **CLEAR** dimensions. Provision for wall linings needs to be considered.

- a. Accessible toilet facilities to be unisex facilities for compliance with the BCA.
- b. Unisex accessible facilities to comply with AS1428.1, Clause 12 including set-out of fittings and fixtures, circulation areas and doorways.
- c. Where more than one unisex accessible toilet is provided within the building, they should be in a mirrored configuration to allow for both left and right-handed use.

WC Pan:

- a. Crucial dimensions for the toilet are 450mm from centreline of pan to side wall, 800mm from front of pan to rear wall and a seat height of 470mm.
- b. A minimum clear dimension of 1400mm is required from the toilet pan to any other fixture (see figure 43).
- c. Grabrails to be provided at the side and rear of the toilet in compliance with AS1428.1 at a height of 800-820mm.
- d. Toilet seat shall be of the full round type, be securely fixed in position when in use and have fixings that create lateral stability. They should be load rated to 150kg, have a minimum 30% luminance contrast to the background colour (eg pan, wall or floor) and remain in the upright position when fully raised.
- e. Provide a backrest to accessible toilets to comply with AS1428.1, Clause 12.2.4.

Basin:

- f. For the basin, a minimum dimension of 425mm is required from the centreline of the basin to the side wall and height of basin to be between 800 and 830mm.
- g. Taps to have lever handles, sensor plates or similar controls. For lever taps, a minimum 50mm clearance to be provided to adjacent surfaces.

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 (1999) 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. Lift call buttons at landings are to comply with AS1735.12 1999. This includes; the centre of buttons shall not be less than 900mm or more than 1200mm affl and not within 500mm of an internal corner. They are to either have continuous illumination from within the button, or a minimum 30% luminance contrast to the background colour. All buttons are to be provided with information in Braille and tactile formats.
- f. Lift call buttons within the lift car are to comply with AS1735.12 1999. This includes; the centre of buttons shall not be less than 700mm or more than 1250mm affl and not within 300mm of an internal corner if adjacent the opening, or 400mm for all other locations. They are to either have continuous illumination from within the button, or a minimum 30% luminance contrast to the background colour. All buttons are to be provided with information in Braille and tactile formats.
- g. Auditory / voice cues are to be provided within the lift car to assist persons with a vision impairment.
- h. 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.
- i. 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.

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 9

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; be a

consistent height along the length of the stair – no vertical sections; have a clearance to the 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.

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

Accessible Ramps – Internal

AS 1428.1 has access requirements for accessible ramps as follows:

- Ramp to comply with AS1428.1, Clause 7.3. 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.
- Accessible ramp is to have a maximum rise of 3.6m (BCA Clause D3D12).
- Where the intersection is at an internal corridor, the ramp shall be setback by a minimum 400mm so that the handrail complying with Clause 8 does not protrude into the transverse path of travel (AS1428.1, Clause 7.3 (g)).
- Provide handrails, with extensions, to both sides of the ramp to comply with AS1428.1, Clause 8. 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.
- 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.
- 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).

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 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 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
- A visitable toilet at the entry level per AS4299
- A path of travel from the entrance to the visitable toilet and living area

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).



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 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 should be minimum 1000mm wide with no steps; an even, slip resistant surface; crossfall not more 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 and have been developed with consideration to the principles of Universal Design, enhanced Australian Standards for accessibility, industry partner accessibility and inclusion guidelines and international legislation.

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

Resting areas should be provided at 60m intervals along the accessway in keeping with AS1428.2 and include seating and wheelchair spaces.



Accessible Carparking

While there are mandatory requirements for the configuration and number of accessible car parking spaces within a development, there are no requirements around location or shelter. Going beyond minimum compliance to promote usability, dignity, and independence for people with disabilities is encouraged.

We recommend that accessible carparking be located as close to the building entrance as possible without the need to cross lanes of traffic.

Consideration should also be given to the provision of undercover accessible carparking. This offers protection from rain, heat, and wind, improving comfort and safety during entry and exit from vehicles and when travelling to the building entrances. It also reduces risk of slips or falls on wet or hot surfaces. The provision of undercover access between carparking and entrances aligns with universal design principles by offering equitable amenity and comfort.

Adequate, uniform lighting, especially for after-hours access and safety, that minimises glare or shadows near circulation paths is another factor for consideration.

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.

Luminance Contrast

Mandatory items within the BCA and AS1428.1 that require luminance contrast are tactile indicators, accessible toilet seats and doorways. Provision of a minimum 30% luminance contrast between the following elements can also be provided as a best practice measure to ensure ease of use:

	between floors and walls or between walls and skirting boards		between the ground surface and obstructions such as columns, bollards, and street furniture
	between the floor and the entrance mat, where provided (this allows people with vision impairment to locate the entrance).		between handrails and mounting surface
	between the door and door hardware		between bathroom fittings and the mounting surface
	between overhead cupboard doors and exposed edge when cupboard doors are open		between cupboard doors and handles; between cupboard doors and floor; between cupboard doors and benchtops; between benchtop and sink;

Visual Indication to Glazing (additional measures)

To ensure full height glazing that can be mistaken for a doorway is highlighted, we recommend the provision of a “double decal” as per international precedent.

This involves the provision of two (2) decal strips that have a minimum 30% luminance contrast to each other. As such, the background colour does not need to be relied upon.

Wayfinding – Signage

Signs and symbols should be provided to inform all users. A signage system which informs all users is encouraged. The use of pictograms and directional cues is recommended as is the use of luminance contrast to ensure the message is clear and legible.



Wayfinding – Landmarks and Tactile Indicators

To assist people with vision impairment navigate their environment, the use of directional tactile indicators can be implemented, noting that their use should be minimised. The design of directional tactile indicators is site / building specific.

Additionally, landmarks such as entry features, statues, sculpture, fountains, or other unique features can be used as a means of way-finding throughout a building. This especially assists people with intellectual disabilities.



Furniture and Joinery Hardware



The use of D-type pull handles to furniture and joinery that provide a minimum 35mm clearance between the rear face of the handle and the face of the drawer is generally recommended to promote accessibility and inclusion.

A minimum of 30% luminance contrast between the handle and the cupboard is also recommended to assist people with vision impairment locate the handle.

Doors to Residential Apartments

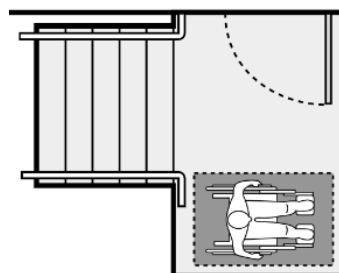
We recommend that doors that provide entry of residential apartments achieve a clear opening width of 850mm as per doorways within the accessible path of travel. This promotes visitability and aids in the moving of furniture to and from the apartment.

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 an 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

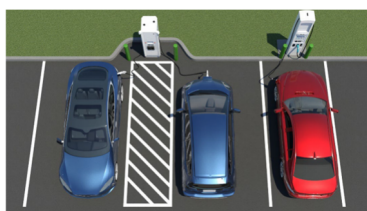
Minimum interior lighting levels should generally consider AS1428.2 (1992) Clause 19. Consistent lighting levels should be provided throughout, without pools of light or dark areas. Glare and excessively reflective surfaces should be avoided. This includes glare from windows.

Electric Vehicle Charging Stations

An accessible electric vehicle (EV) charger ensures that people with disabilities—including drivers or passengers who use wheelchairs, have limited mobility, or sensory impairments—can independently use EV charging infrastructure.

Key features should include a clear floor areas adjacent to the charger to facilitate a wheelchair turning area (1540x2070mm); kerb-free / step-free access; reachable controls (within the accessible height range and not within 500mm of an internal corner); a level non-slip surface; lightweight cables; adequate lighting accessible user

interface and visual status indicators, like the status of ev charging, should also be discernible by sound (or touch)



Wheelchair Charging Stations

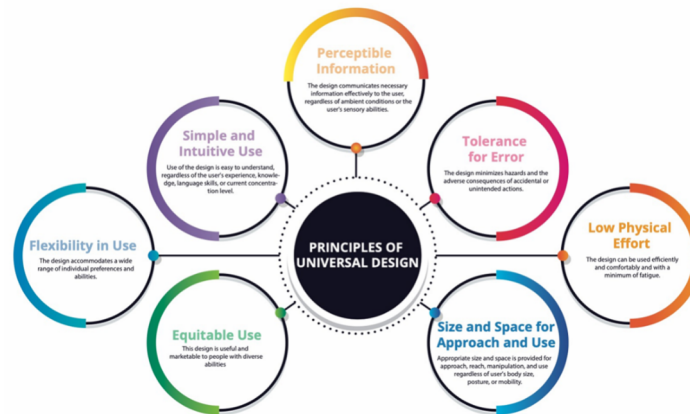
Wheelchair charging stations are designated locations where people using electric or powered wheelchairs and mobility scooters can safely recharge their devices. They help promote independence, reduce anxiety about battery depletion, and support accessibility in public and private spaces.

Key features include: power outlets (standard and USB) within the accessible height range and not within 500mm of an internal corner; a sheltered location that is protected from the weather; a seating / resting space or waiting area for comfort during charging; clear signage; and overall protections, timers to prevent over charging.

Wheelchair charging stations are commonly provided within transport hubs, shopping centre, universities, libraries, hospitals, museums and galleries.

The Principles of Universal Design

At the Center for Universal Design at North Carolina State University, a group of architects, product designers, engineers, and environmental design researchers established the following set of principles of universal design to provide guidance in the design of environments, communications, and products. We recommend that they be implemented within the design of the built environment.



Equitable Use

The design is useful and marketable to people with diverse abilities. For example, a website that is designed so that it is accessible to everyone, including people who are blind, employs this principle.

Flexibility in Use

The design accommodates a wide range of individual preferences and abilities.

Simple and Intuitive Use

Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.

Perceptible Information

The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

Tolerance for Error

The design minimises hazards and the adverse consequences of accidental or unintended actions.

Low Physical Effort

The design can be used efficiently and comfortably and with a minimum of fatigue.

Size and Space for Approach and Use

Appropriate size and space are provided for approach, reach, manipulation, and use regardless of the user's body size, posture, or mobility.

