



lindsay perry access

Disability Access Report

Mixed-Use Development
38-40 Orth Street &
26 Somerset Street
KINGSWOOD NSW

For: Biogene Property Investment Pty Ltd
Ref: LP_19130



Executive Summary

Development application documentation for the proposed Mixed-Use Development located at 38-40 Orth Street and 26 Somerset Street Kingswood, has been reviewed against the requirements of the Building Code of Australia 2019 and The Disability Discrimination Act 1992 with regard to access for persons with a disability. The requirements of the Disability Standards for Access to Premises (Buildings) and the Access Code for Buildings have also been addressed.

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

The following table summarises compliance status.

Item No.	Description	Compliance Status
Access and Approach		
4.1	Allotment Boundary to Entrance	Compliant
4.2	Accessible Carparking to Entrance	Compliant
4.3	Pathways	Capable of compliance
4.4	Accessible Carparking	Capable of compliance
4.5	Stairs	Capable of compliance
4.6	Entrances	Capable of compliance
Interior		
5.1	Extent of Access Generally	Compliant
5.2	Circulation Areas	Compliant
5.3	Doorways	Capable of compliance
5.4	Exempt Areas	Compliant
5.5	Floor Finishes	To be addressed during detailed design
5.6	Visual Indication to Glazing	To be addressed during detailed design
5.7	Carpet	To be addressed during detailed design
5.8	Controls	To be addressed during detailed design
5.9	Tactile Indicators	To be addressed during detailed design
5.10	Signage	To be addressed during detailed design
5.11	Thresholds	To be addressed during detailed design
5.12	Slip Resistance	To be addressed during detailed design
Sanitary Facilities		
6.1	Distribution	Compliant
6.2	Accessible Toilets	Capable of compliance
6.3	Ambulant Toilet Cubicles	Capable of compliance
Vertical Circulation		
7.1	Lifts	Capable of compliance
7.2	Fire Isolated Egress Stairs	Capable of compliance
Adaptable Housing		
7.1	Pre-adaption Requirements	Capable of Compliance
7.2	Post-adaption Requirements	Capable of Compliance



Livable Housing		
8.1	Dwelling Access	Compliant
8.2	Dwelling Entrance	To be addressed during detailed design
8.3	Internal Corridors and Doors	To be addressed during detailed design
8.4	Toilet	To be addressed during detailed design
8.5	Shower	To be addressed during detailed design
8.6	Reinforcement of Bathroom Walls	To be addressed during detailed design
8.7	Internal Stairways	Not applicable

Construction is to be in accordance with the recommendations made in this access report to ensure compliance. Where construction differs from the drawings, further assessment will be required to ascertain compliance.

This report is limited to items within drawings listed in this report only. Future alterations and additions to the building will render the recommendations in this report null and void as we cannot guarantee continued compliance where changes to the building fabric are made. A high level of maintenance is recommended to ensure continued compliance with access legislation.

All dimensions quoted throughout this report and within Australian Standards are CLEAR dimensions, not structural. This needs to be considered in the preparation of the construction certificate documentation to account for wall linings and the like.

Best practice options, as noted in the report, are not mandatory but will minimise the risk of a complaint made under the DDA.

It is estimated that one in five people in Australia have a long-term disability (Australian Bureau of Statistics – 2003). This includes physical disability, intellectual disability, and sensory impairments such as vision and hearing. It does not include those with a short-term (temporary) disability or the continuing aging population.

Lindsay Perry Access have adopted a best practice, performance-based approach to access. Assessment is based on project specifics and takes into account various factors such as site topography, heritage and existing site conditions.

The recommendations throughout this report reflect the professional opinion and interpretation of Lindsay Perry. This may differ from that of other consultants. We aim to provide practical, performance-based advice based on project specifics that will maximize access for persons with a disability to the built environment.

Lindsay Perry is a qualified Access Advisor, being an accredited within Australia (ACAA No. 136) and at the international level (GAATES No. BE-02-106-18). Lindsay Perry Access Pty Ltd carries public liability insurance, professional indemnity insurance and workers compensation insurance.



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Revision Summary

Date	Description	Revision
1 July 2019	draft DA Disability Access Report	draft
4 July 2019	DA Disability Access Report	1
18 July 2019	DA Disability Access Report	2
9 August 2019	DA Disability Access Report	3



1. Project Background

This Access Report considers the proposed Mixed-Use Development located at 38-40 Orth Street and 26 Somerset Street Kingswood, against the requirements of the Building Code of Australia 2019 (BCA), Disability (Access to Premises) Standards 2010 and The Disability Discrimination Act 1992 (DDA), with regard to access for persons with a disability.

The proposed development offers forty-one (41) residential apartments over five (5) levels with a commercial area comprising seven (7) tenancies at the ground floor and first floor levels. Three (3) levels of basement carparking is provided.



Figure 1 | Proposed Development

The accessible pedestrian approach to the building is from the Orth Street footpath with distinct residential and commercial lobbies provided.

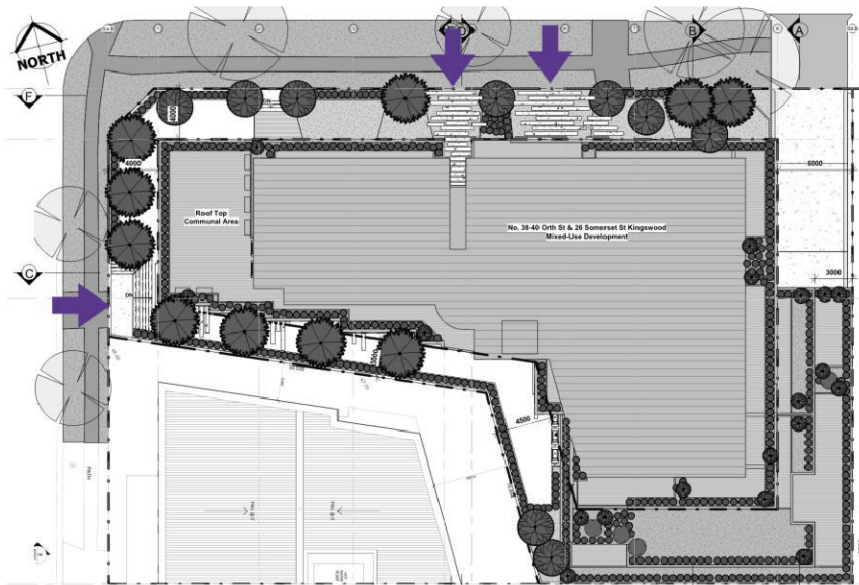


Figure 2 | Approach from Orth Street



Communal open space is provided at the ground floor level of the development and includes a barbeque area and access to sanitary facilities. There is also a roof top communal area provided at the Sixth Floor. This also provides barbeque facilities.

Documentation prepared by AC Project Group – Issue A dated 3 July 2019 – has been reviewed as follows:

DA00	Cover Page
DA01	Survey/Demolition Plan
DA02	Context & Site Analysis Plan
DA03	Site Plan
DA04	Basement 1
DA05	Basement 2
DA06	Basement 3
DA07	Ground Floor Office
DA08	First Floor Office
DA09	2nd Floor Plan
DA10	3rd Floor Plan
DA11	4th Floor Plan
DA12	5th Floor Plan
DA13	6th Floor Plan
DA14	Roof Plan
DA15	East Elevation
DA16	South Elevation
DA17	North Elevation
DA18	West Elevation
DA19	Section A
DA20	Section B
DA21	Section C
DA22	Section D
DA23	Section E
DA24	Floor Area Calculation
DA25	Solar Access Study
DA26	Cross Ventilation
DA27	Sun & Shadow Diagram
DA28	2-5th Pre & Post Adaptable Layout
DA29	3D Building Height Envelope
DA30	Materials & Finishes Schedule

2. Council Requirements

Penrith City Council Development Control Plan 2014, Section D2.5.20 Accessibility and Adaptability is applicable to this development.

The objective of this section is as follows:

To provide safe and easy access to buildings to enable better use and enjoyment by people regardless of age and physical condition, while also contribution to the vitality and vibrancy of the public domain.

The controls are as follows:



1. *Demonstrate that planning and design measures do not prevent access by people with disabilities:*
2. *Demonstrate that dwellings have been designed to meet the needs of an ageing population:*
3. *10% of all dwellings or a minimum one dwelling, whichever is greater, must be designed in accordance with the Australian Adaptable Housing Standard (AS4299-1995), to be capable of adaptation for people with a disability or elderly residents.*
4. *Where possible, the mandatory adaptable dwellings shall be located on the ground floor.*
5. *The development application must be accompanied by certification from an accredited Access Consultant confirming that the adaptable dwellings are capable of being modified, when required by the occupant, to comply with the Australian Housing Standard (AS4299-1995).*
6. *Car parking and garages allocated to adaptable dwellings must comply with the*
7. *requirements of the relevant Australian Standard regarding parking for people with a disability.*

Four (4) adaptable apartments are provided within the development meeting DCP requirements.

3. 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 Building Code of Australia 2019 (BCA) Section D3 – Access for People with Disabilities
- The Building Code of Australia 2019 (BCA) Section D2 (in part) – thresholds and slip resistant
- The Building Code of Australia 2019 (BCA) Section E3.6 – Lifts
- Australian Standards AS1428.1(2009) Amendment 1, AS1428.2(1992), AS1428.4(2009) – Design for Access and Mobility
- Australian Standard AS2890.6 (2009) – Parking Facilities – Off street carparking For People with Disabilities.
- Australian Standard AS4299 – Adaptable Housing
- Australian Standard AS1735.12 – Lifts, escalators and moving walks: Lifts for persons with a disability
- State Environmental Planning Policy 65 – Residential Design Quality of Residential Apartment Development (SEPP65) – Apartment Design Guide – July 2015
- The Livable Housing Design Guidelines – Edition 4

A summary of the requirements of relevant legislation follows.

- 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 DDA 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.
- BCA 2019 for Class 2 buildings (residential apartments), requires access 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 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.

Access for people with disabilities is also required 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, individual shop, eating area, or the like.

- The BCA 2019 for Class 5 (commercial tenancies) buildings requires access for people with disabilities to and within all areas normally used by the occupants.
- The BCA 2019 for Class 7a buildings (carparking) requires access for people with disabilities to and within any level containing an accessible carparking space.
- SEPP 65 Residential Design Quality of Residential Apartment Development (SEPP65) – Apartment Design Guide 1.
The Apartment Design Guide includes a requirement for livable housing. Developments are to provide a minimum 20% of apartments that achieve silver level for livable housing.
- AS1428 – Design for Access and Mobility
Part 1 (2009) of this standard contains access requirements that are mandatory for the provision of access for persons with a disability and is referred by the BCA. Part 2 (1992) provides enhanced and best practice requirements. Requirements for tactile indicators are included in Part 4.1 (2009) of this standard.
- AS4299 – Adaptable Housing 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.
- AS2890.6 applies to the carparking areas generally.
- AS1735.12 contains requirements for passenger lifts for persons with a disability.
- The Livable Housing Design Guidelines include Silver, Gold and Platinum Level which cater to differing levels of accessibility.



4. Access and Approach

The approach to the building needs to be considered 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 allotment boundary at the main points of pedestrian entry, from accessible carparking areas and from any adjacent and associated accessible building.

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

- from the allotment boundary at the pedestrian entrances along Orth Street to the building entrances;
- from the accessible carparking areas to the building entrance.

4.1 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

Level access is provided from the allotment boundary along Orth Street to both the Commercial and Residential Entrance Lobbies.

4.2 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

Lift access is available between the accessible carparking and entrance lobbies.

4.3 Pathways 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:

Capable of compliance

Recommendations:

For compliance with AS1428.1, the following access requirements apply and should be addressed during preparation of the construction certificate documentation to ensure compliance.

The pedestrian areas appear to be conducive to the provision of access for persons with a disability.



- 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.

4.4 Accessible Carparking

Where in excess of five carparking spaces are provided on the site, there is a requirement for the provision of accessible carparking.

Compliance Summary:

Capable of compliance

Carparking is provided at the basement levels of the development and we note the provision of accessible carparking allocated to the Commercial component of the development (1 space as per BCA requirements) and residential component (accessible visitor space and accessible carparking associated with the adaptable units). Configuration of the accessible carparking spaces is in accordance with AS2890.6.

Recommendations:

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

- 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.
- 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, 1:33 (for outdoor spaces). 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) –ground and vertical signage is required. Signage is to comply with AS1428.1.

4.5 Stairs

Stairs are provided as a part of the pedestrian access Somerset Street to the building. This does not constitute the principle pedestrian access to the site. AS1428.1 has access requirements for all public access stairs and is applicable in this instance.

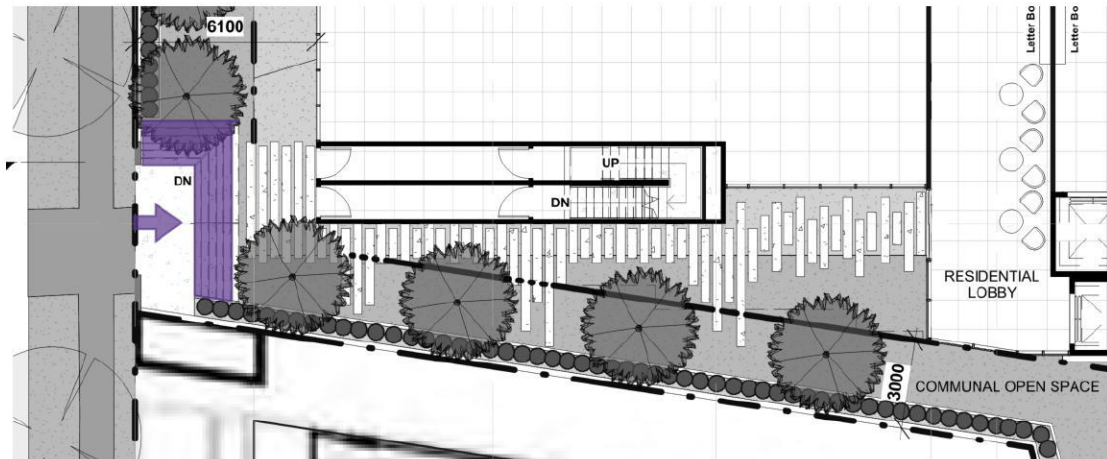


Figure 3 | Stairs from Somerset Street

Compliance Summary:

Capable of compliance

Recommendations:

Access requirements for stairs are as follows and should be addressed during preparation of the construction certificate documentation to ensure compliance.

- a. Stairs to comply with AS1428.1(2009), Clause 11.2.
- b. Where the stair intersects the property boundary, the stair shall be set back a minimum of 900mm so that handrail extensions and tactile indicators do not protrude into the traverse path of travel.
- c. 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.



- d. 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. A central handrail is also an acceptable solution where adequate width is available. In this instance, the use of a double handrail is encouraged so that two users can travel in opposite directions and maintain their grip on the handrail.
- 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 D3.8 and AS1428.4.

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).

4.6 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.

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.

Compliance Summary:

Capable of compliance

An automatic sliding door is provided for entrance to both the residential and commercial lobbies. The use of this type of door is encouraged as it maximizes access for persons with a disability to the tenancy.

Recommendations:

The following access requirements apply to the entrance and should be addressed during preparation of the construction certificate documentation to ensure compliance.

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

5 Interior

The interior areas subject to accessibility requirements include the commercial levels (Ground and First Floor) and the residential common areas being the entry foyer, lift lobbies, corridors and outdoor terrace at the third floor. The following requirements do not extend to individual apartments.

5.1 Extent of Access Generally – BCA

Access for people with disabilities is required to and within the commercial tenancy and to the door of individual sole occupancy units. An accessible path of travel is also required to the residential communal areas.

Access for people with disabilities is required to and within all areas normally used by the occupants.

Compliance Summary:

Compliant

Access is provided to and within all areas of the commercial areas and to the doorway of all residential units. Communal areas within the development are also in an accessible location.

5.2 Circulation Areas

BCA (Clause D3.3) 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.

Compliance Summary:

Compliant



5.3 Doorways Generally

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

Compliance Summary:

Compliant circulation areas provided.

Recommendations:

Access requirements for doorways within the accessible path of travel are as follows and should be addressed during preparation of the construction certificate documentation to ensure compliance

- 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.
- 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. Doorways to have minimum 30% luminance contrast as described in AS1428.1(2009), Clause 13.1.
- d. Doors to have hardware within the accessible height range of 900-1100mm above the finished floor level (AS1428.1(2009), Clause 13.5).

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.

- e. 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.

5.4 Exempt Areas

BCA Clause D3.4 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.

5.5 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 bevelled edges) as part of the accessible path of travel. Refer to AS1428.1(2009), Clause 7.2 for further details. This should be implemented during construction to ensure compliance.

Compliance Summary:

To be addressed during detailed design stages.



5.6 Carpet

AS1428.1 has access requirements for carpet. Where new carpet is used as the floor surface, pile height should not exceed 4mm. Exposed edges will be fastened to the floor surface. Carpet trims shall have a vertical face not more than 3mm high.

Compliance Summary:

To be addressed during detailed design stage.

5.7 Controls

New controls such as light switches, GPOs, alarm keypads, card swipes, intercoms, 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. This should be implemented during construction to ensure compliance.

Compliance Summary:

To be addressed during detailed design stage.

5.8 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. Decals are to be solid. AS1428.1, Clause 6.6.

Compliance Summary:

To be addressed during detailed design stage.

5.9 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 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 D3.8).

The use of tactile indicators should be minimized through good design.

Tactile indicators are generally required to be 600-800mm deep across the width of the hazard and set back 300mm from the edge of the hazard (refer AS1428.4.1, Figure A1). 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.



5.10 Signage

Signage to identify sanitary facilities, hearing augmentation and required exits are to be provided in accordance with BCA Clause D3.6. 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.

Recommendations:

Signage to include information in Braille and tactile signage formats as outlined within BCA Specification D3.6.

- a. Braille and tactile components of the sign to be located not less than 1200mm and not higher than 1600mm affl.
- b. Signage identifying rooms with accessible features or facilities nominated in Clause D3.6 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. This is to allow use of the Braille without obstructing pedestrian traffic through the doorway.
- c. For signage identifying an exit, "exit" and the level must be stated on the sign. It must 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.

5.11 Thresholds

The threshold of a doorway must not incorporate a step or ramp at any point closer to the doorway than the width of the door leaf unless in a building required to be accessible by Part D3, the doorway opens to a road or open space; and is provided with a threshold ramp or step ramp in accordance with AS 1428.1.

Compliance Summary:

To be addressed during detailed design stages.

5.12 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

Compliance Summary:

To be addressed during detailed design stage.



6 Sanitary Facilities

The BCA / Access Code for Buildings (Clause F2.4) require the provision of sanitary facilities catering for persons with a disability.

6.1 Distribution of Accessible Sanitary Facilities

The following is required to satisfy BCA requirements:

- A unisex accessible toilet at each level. Where more than one bank of toilets is provided at any level, at least 50% of those banks will have an accessible toilet facility.
- A unisex accessible shower is required where showers are required by F2.3. In this regard, BCA only requires accessible showers within hospitals, early childhood centres, theatres and sporting venues. Showers are not *required* within commercial, retail or industrial premises. If *required by Clause F2.3*, where one or more showers are provided, 1 accessible shower for every 10 or part thereof must be provided.
- To minimize the risk of a complaint made under the DDA, we recommend that where showers are provided for general use, an accessible shower should be provided.
- At each bank of toilets where there is one or more toilets in addition to an unisex accessible sanitary compartment at the bank of toilets, a sanitary compartment suitable for a person with an ambulant disability in accordance with AS1428.1 must be provided for use by males and females
- One unisex accessible adult change facility must be provided:
 - in an accessible part of a shopping centre having a design occupancy of not less than 3,500 people (calculated in the basis of floor area);
 - a sporting venue that has a design occupancy of not less than 35,000 spectators or contains a swimming pool that has a perimeter greater than 70m;
 - a museum or art gallery having a design occupancy of not less than 1,500 patrons;
 - a theatre or the like having a design occupancy of not less than 1,500 patrons;
 - a passenger use area of an airport terminal building providing public transport services.

Compliance Summary:

Compliant

Ambulant toilets are provided within both male and female toilet at the ground and first floor levels.

A unisex accessible toilet is provided at the ground and first floor levels.



6.2 Unisex Accessible Toilets

A unisex accessible toilet is provided at the ground and first floor levels, achieving compliance with BCA. Dimensions and basic arrangement of fixtures is conducive to compliance.

Compliance Summary:

Capable of compliance

Recommendations:

Access requirements for the accessible toilet facilities are as follows and should be addressed during preparation of the construction certificate documentation to ensure compliance. For compliance with AS1428.1(2009), the minimum room dimensions of the accessible toilet are to be 1900x2300mm plus additional area for the handbasin. 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(2009), Clause 15 including set-out of fittings and fixtures, circulation areas and doorways.

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. A minimum clear dimension of 1400mm is required from the toilet pan to any other fixture (see figure 43).

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.

Grabrails to be provided at the side and rear of the toilet in compliance with AS1428.1 at a height of 800mm.

- c. Taps to have lever handles, sensor plates or similar controls. For lever taps, a minimum 50mm clearance to be provided to adjacent surfaces.
- 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 15.2.4.
- f. Accessible toilet to be identified using the International Symbol for Access. Pictograms / lettering to have a minimum 30% luminance contrast to the background colour. Signage is to comply with AS1428.1, Clause 8 and include information in tactile and Braille formats (as required by the BCA).



- g. Doorways 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. Adequate circulation area at the latch side of the doorway is required to allow independent access to the facility – for details refer to AS1428.1, Figure 31.
- h. Door hardware to be located within the accessible height range of 900-1100mm above the finished floor level. The use of lever handles is encouraged to assist persons with a manual disability such as arthritis.
- i. Controls such as light switches within the accessible toilet facilities to be in the accessible height range of 900-1100mm above the finished floor level to comply with AS1428.1(2009), Clause 14. Controls should be located not less than 500mm to a corner.
- j. 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.

6.3 Cubicles for People with an Ambulant Disability

Ambulant cubicles are provided within male and female toilets at the ground and first floor levels achieving compliance with BCA.

Compliance Summary:

Capable of compliance

Recommendations:

Options for the configuration of the ambulant cubicles are illustrated in AS1428.1, Figure 53. The following should be addressed during preparation of the construction certificate documentation to ensure compliance.

- a. Ambulant cubicles to offer compliance with AS1428.1, Clause 16.
- b. Minimum width of ambulant cubicles to be 900-920mm.
- c. Provide grabrails to ambulant cubicles to comply with AS1428.1, Clause 17 and Figure 53A.
- d. Doors to have a minimum opening width of 700mm and comply with AS1428.1, Figure 53B.
- e. Provide signage to the ambulant cubicles to comply with AS1428.1, Clause 16.4.



7 Vertical Circulation

Lifts provide the main access between levels of the building. Two lifts are provided within the development. Stairs within the building are fire isolated egress stairs.

7.1 Lifts

Two lifts are provided for access between levels. One caters to the commercial component of the development, the other to the residential component. Both provide access to basement carparking levels. The size of the lifts appears to satisfy the requirements of AS1735.12.

Compliance Summary:

Capable of compliance

Recommendations:

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 as required by the BCA, Clause E3.6.
- b. Minimum internal dimensions of the lift car to be 1400mm wide x 1600mm deep BCA, Clause E3.6 – for a lift that travels over 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.



7.2 Fire Isolated Egress Stairs

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

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.

Compliance Summary:

Capable of compliance

Recommendations:

- 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 (BCA D2.17).

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.

8 Adaptable Housing

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.

Note that the 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 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.

Units 209, 309, 409 and 509 have been nominated as the adaptable units and provide the pre-adaption requirements of AS4299. The adaptable units offer one bedroom, one bathroom and open plan living areas.

Pre-Adaption Requirements:

8.1 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:

Compliant

The entry doorway to the adaptable units is conducive to an accessible entrance.

Recommendations:

We recommend the use of a 920 door leaf to achieve adequate clear width.

8.2 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. 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:

Compliant

A visitable toilet arrangement is provided in each adaptable unit.



8.3 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

Post Adaption Requirements:

8.4 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.

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).

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

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

8.5 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:

To be confirmed.

An accessible path of travel is required from the letterboxes to the entrance of each adaptable unit.

Recommendations:

Letterboxes to adaptable apartments should be provided within the accessible height range of 900-1100mm affl.



8.6 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:

Compliant

Doorways are generally provided with adequate circulation areas

8.7 Internal Corridors

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

Compliance Summary:

Compliant

8.8 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.

Compliance Summary:

Compliant

Bathroom offers dimensions conducive to adaption

8.9 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.

Compliance Summary:

Compliant

With minor alterations, the kitchen offers circulation areas as described above.



8.10 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 and 1000mm at the side of the bed (1200mm preferred) for compliance with AS1428.2, Clause 6.1.

Compliance Summary:

Compliant

Bedroom offers compliant circulation areas.

8.11 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

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

8.12 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

Laundry offers compliance being in a cupboard configuration.

8.13 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

8.14 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

9 Livable Housing

The NSW Government promotes better apartment design across NSW through the State Environmental Planning Policy No. 65 – Design Quality of Residential Apartments Development. Developments are to provide a minimum 20% of apartments that achieve silver level for livable housing.

Within this development, a total of eight units are required to be capable of achieving silver level livable housing requirements per the Livable Housing Design Guidelines – Fourth Edition.

- The adaptable units serve as silver level LHA units. Therefore, an additional four (4) units are to achieve the requirements of silver level LHA.

Livable housing requirements are summarised below and should be incorporated to achieve compliance with SEPP 65:

7.1 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.

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.

7.2 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.

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.

7.3 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.

7.4 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.

7.5 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.

7.6 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.

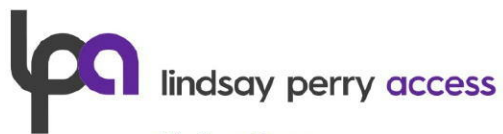
Reinforcement to be in the form of 25mm noggins or plywood sheeting with 12mm thickness.

7.7 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.

NOT APPLICABLE



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