

Appendix R

Access Design Assessment



Landcom

Concept SSDA Access Design Assessment Report

CUDGEGONG ROAD STATION PRECINCT SOUTH
ROUSE HILL
NSW 2155



BUILDING REGULATIONS | ACCESSIBILITY | FIRE SAFETY ENGINEERING | ESD ENGINEERING | ACOUSTICS

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Project: Cudgegong Road Station Precinct South, Rouse Hill NSW 2155
Document Type: Access Design Assessment Report
Report Number: P218_043-4 (ACCESS) LD

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Revision History—

OUR REFERENCE	REMARKS	ISSUE DATE
P218_043-1 (ACCESS) LD	Report issued to client	15 March 2018
P218_043-2 (ACCESS) LD	Report issued to client	27 March 2018
P218_043-3 (ACCESS) LD	Final report issued to client	28 March 2018
P218_043-3 (ACCESS) LD	Minor amendment made at request of client	11 May 2018



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1.0 INTRODUCTION

1.1 Purpose of Report

The purpose of this report is to address the Secretary's Environmental Assessment Requirements dated 16 February 2018 for the Stage 1 concept proposal for a mixed use development at Cudgegong Road Station Precinct South. The report considers the extent to which the architectural design documentation complies with the accessibility provisions of the Building Code of Australia 2016 and how advisory inclusive design provisions might be implemented within the public realm.

This report is based upon, and limited to, the information depicted in the documentation provided for assessment and does not make any assumptions regarding design intention or the like.

1.2 Documentation Provided for Assessment

This assessment is based upon the urban design documentation prepared by Bennett and Trimble and the public domain and landscape strategy prepared by Clouston, listed within **Appendix 1**.

1.3 Report Exclusions

It is conveyed that this report should not be construed to infer that an assessment for compliance with the following has been undertaken—

- (i) Work Health & Safety Act and Regulations;
- (ii) WorkCover Authority requirements;
- (iii) Structural and Services Design Documentation;
- (iv) The Disability Discrimination Act (DDA) 1992; and
- (v) Any parts of the BCA or any standards other than those directly referenced in this report.

2.0 DEVELOPMENT DESCRIPTION

2.1 General

In accordance with the BCA, the assessment undertaken relates to the concept proposal on a 7.8ha site.

2.2 Development Description

In the context of this report and the BCA the proposed building uses within the masterplan can be described as follows—

CLASS OF BUILDING	DESCRIPTION	DETAIL
N/A	Town Park	0.29 hectare
N/A	Plaza	
TBC	Community floor space	1500 m ²
Class 2	Multi-unit residential	1100 dwellings
Class 5	Office for Professional or Commercial use / Medical Centre	3000 m ² Commercial
Class 6	Retail (Shop / Restaurant / Café)	4500m ² retail



Figure 01 – Cudgegong Road Station Precinct South Location

3.0 BCA COMPLIANCE

3.1 Requirement for compliance with the BCA

It should be noted that the BCA provides technical provisions for the design and construction of buildings. Requirements pertaining to access apply to building parts only, with the following exceptions—

An accessway is required—

- From the main points of a pedestrian entry at the allotment boundary;
- From another accessible building connected by a pedestrian link; and
- From any required accessible car parking space on the allotment.

The public domain is subject to the requirements of the BCA only in the instances described above, therefore guidance for external works is provided on an advisory basis to assist in the development of an accessibility strategy for the masterplan community.

3.2 General

This report summarises the compliance status of the architectural design in terms of each applicable prescriptive provision of the BCA and indicates a capability for compliance with the BCA.

At this early stage in the design, documentation has not been provided for assessment, therefore in all instances design detail is required and refers to matters which need to be considered by the design team and any assessment authority at relevant stages of design and/or assessment.

BCA and technical requirements are provided within **Section 5.0** of this report.

4.0 ACCESS STRATEGY

4.1 Proposed Access Aims

It is proposed that the development be designed to incorporate the following access principles—

- To provide liveable and active public domain spaces that integrate with the Metro station and proposed land used and are accessible for new residents and the neighbouring community;
- To address the anticipated aging population and their needs;
- To maximise access to all parts of the site, especially the Metro Station for all future visitors and members of the community; and
- To provide a strong, legible framework for pedestrians and cyclists, considering desire lines;
- To design inclusively, beyond the requirements of the BCA to ensure that people, regardless of age, sex or ability can use and enjoy the built environment; and
- To meet the aims of the Disability Discrimination Act.

This assessment considers the proposed pedestrian and cycle network, and public domain and landscape strategy, assesses the access routes and that consideration has been given to the principles of inclusive design throughout the design process.

4.2 Site Planning

Buildings and public spaces are to be organised with the following considerations—

- Making optimum use of contours and level changes;
- To enable easy navigation and wayfinding;
- To provide prominent features from the point of arrival to the masterplan;
- Key facilities to be provided along axial routes; and
- To accommodate the anticipated level and volume of use.

4.3 Current Site Constraints

The site slopes to the South-east, which has been identified as a challenge when providing level changes. It is recommended that as far as possible walkways, ramps and stairways within the public realm be designed in accordance with AS1428.1-2009. This includes limitation on allowable gradients, and accessible features such as handrails and kerb rails where appropriate to ensure users with a disability can safely navigate the environment.

4.4 Description of Proposed Access

The proposed connectivity network is shown in **Figure 02** below, being the pedestrian links in **red** and the shared pedestrian/cycle links in **orange**.

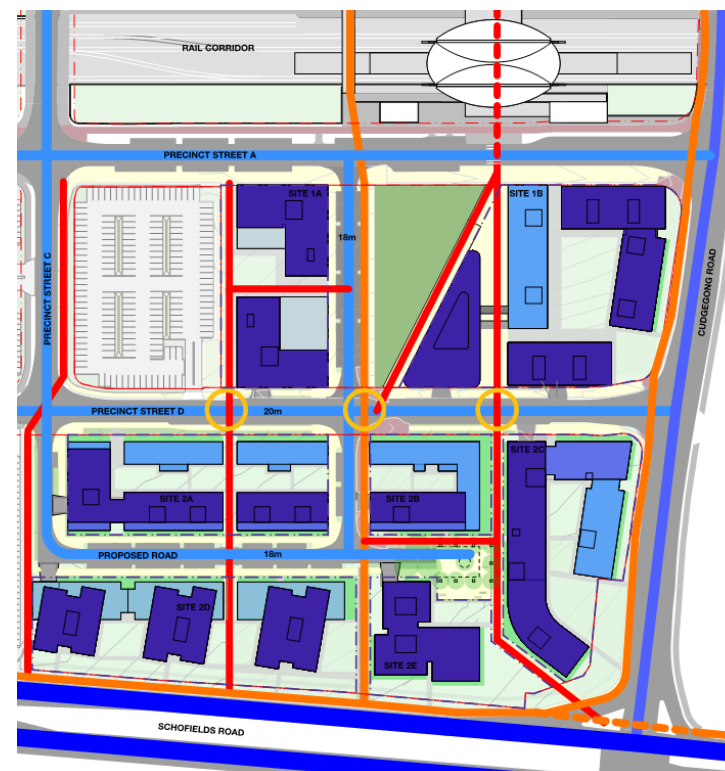


Figure 02 –Pedestrian and Cycle Network

As proposed in the Civil Package provided by AECOM, the paths for exclusive pedestrian use are not less than ~1800mm wide, the bike path is ~3000mm wide and the combined foot and bike path is ~3500mm wide. The width of the paths are inclusive of the kerb on both sides, thus the unobstructed width might be slightly reduced.

These proposed widths are acceptable for all users and will allow wheelchair users to pass one another perform turns where necessary.

4.5 Assessment of Public Domain Access

The pedestrian and cycle network is proposed with a crossfall of 2.5% (or 1:40) and the longitudinal gradient is proposed to follow the roads' gradient.

The proposed pathways provide an appropriate level of access to the buildings located within the precinct, as well as to and from the Metro Station, the commuter car park and the adjacent neighbourhood, being The Ponds.

All pedestrian paths are provided with a minimum of ~1800mm width, which is capable of accommodating a ramp or walkway compliant with AS1428.1-2009.

In regards to the gradients proposed, it should be noted the requirements for walkways and ramps to achieve compliance with AS1428.1-2009 are as follows. Refer to **Section 3.1** for areas which are *required* to comply, for all other areas the below commentary is offered on an advisory basis only —

- Ramps: gradient not steeper than 1:14 (or 7.14%) and not shallower than 1:20 (or 5%), handrails on both sides and TGSIs at the top and bottom landing are required. Landings are required at intervals not greater than 9m (for a gradient of 1:14) or 15m (for a gradient of 1:20). For gradients between 7.14% and 5%, intervals shall be obtained by linear interpolation.
- Walkways: gradient not steeper than 1:20 (or 5%) and not shallower than 1:33 (or 3%). Landings are required at intervals not greater than 15m (for a gradient of 1:20) or 25m (for a gradient of 1:33). For gradients less than 3%, no landings are required. For gradients between 5% and 3%, intervals shall be obtained by linear interpolation.

In accordance with the longitudinal sections and contour lines provided by AECOM, there is a need to review approximate gradients of the following areas circled in **red** in **Figure 03** below.

Confirmation of these gradients via longitudinal sections of the proposed paths will be required as the design progresses at detailed development application stage. Accessibility features may be required depending on the gradient of the path, as summarised above and in **Appendix A1**.

Moreover, it is recommended that the kerb / pram ramps are provided with accessibility features as required by AS1428.1-2009 as described in **Appendix A1**.

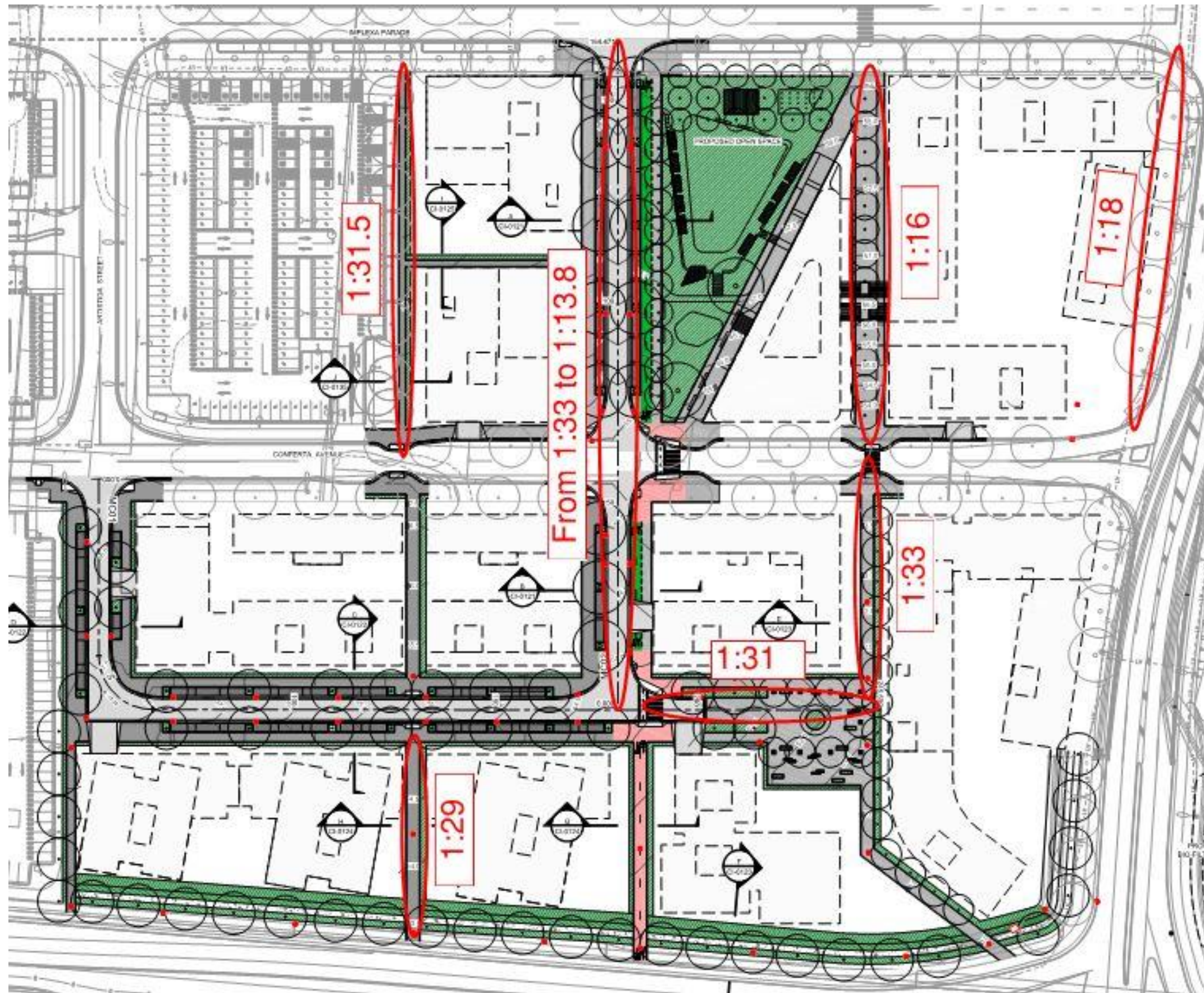


Figure 03 – Gradients

A series of connected walkways and ramps is provided at the park in front of the Metro Station. The rise in elevation proposed is 3690mm (refer to **Figure 04** below), while the maximum vertical rise recommended by Clause D3.11 of the BCA is 3600mm for a series of connected ramps.

This is considered acceptable having regard that the provision of an accessible path of travel compliant with the BCA is advisory. Moreover, landings are provided at intervals not less than 7 meters (1:14 ramps) and 14.5 meters (1:20 walkways).



Figure 04 – Proposed Central Park

3.6 Transport Connections

Accessible transport facilities are critical to the accessibility or urban developments. Sydney Metro works will inform design and material choices to provide consistency. It is recommended that the design provisions of the BCA and AS1428.1-2009 are implemented on key or all accessways to transport connections.

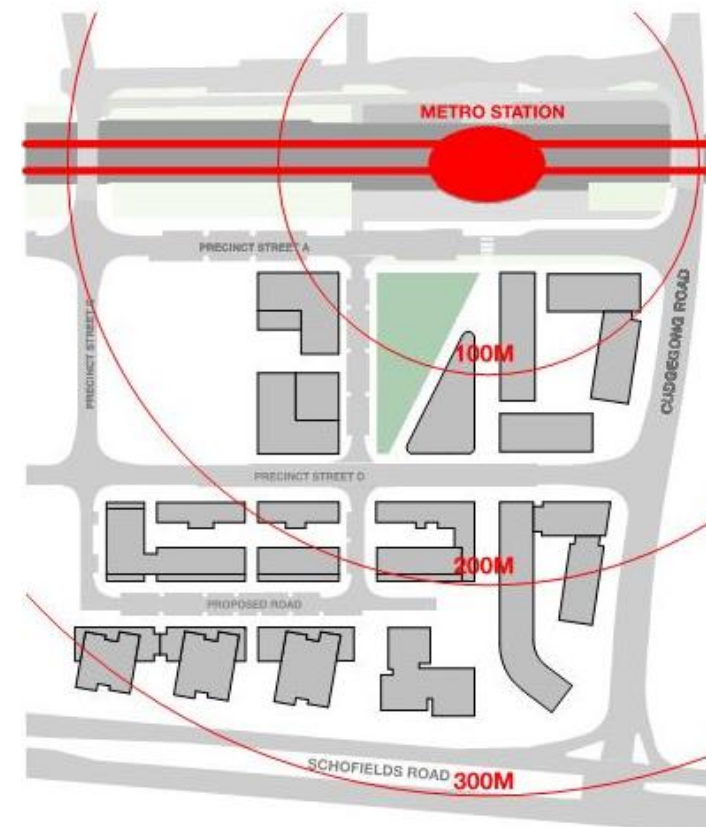


Figure 05 – Location of metro station

5.0 FURTHER DESIGN ISSUES

5.1 Wayfinding

Orientation and wayfinding will include the provision of recognisable routes, intersections and landmarks, which allow users of the environment to independently navigate their surroundings with ease. The following items are to be considered during detailed design progression—

- Visual clutter to be avoided;
- Street furniture is to be well integrated;
- Pedestrian paths to consider the needs of those with visual impairments with the provision of elements for shore-lining (e.g. kerb edges and change of texture underfoot); and
- Graphic, audible and tactile communication to be provided (e.g. Braille or embossed signage, tapping rails, maps and directories, changes in walking surfaces and water features to provide audible cues to location).

Report By



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 For Design Confidence (Sydney) Pty Ltd

Verified By



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Principal
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APPENDIX 1 – BCA REQUIREMENTS

A1.1 General

At this early stage in the design, it is not expected that documentation of detailed design be provided for assessment.

A1.2 BCA Compliance

It should be noted that the BCA provides technical provisions for the design and construction of buildings. Requirements pertaining to access apply to building parts only, with the following exceptions—

An accessway is required—

- From the main points of a pedestrian entry at the allotment boundary;
- From another accessible building connected by a pedestrian link; and
- From any required accessible car parking space on the allotment.

The public domain is subject to the requirements of the BCA only in the instances described above, therefore guidance for external works is provided on an advisory basis to assist in the development of an accessibility strategy for the masterplan community.

A1.3 Part D.3 – Access for People with Disabilities

D3.1

GENERAL ACCESS REQUIREMENTS

Access within class 2 buildings is required to be provided from a pedestrian entrance required to be accessible to the entrance of each sole occupancy unit and to and within rooms or spaces for use in common by residents.

Access within class 5 and 6 buildings is required to be provided to and within all areas normally used by occupants (excluding those areas identified within **Section 2.3** above).

TECHNICAL REQUIREMENTS

DOORWAYS AND DOORS

All doors to have a minimum 850mm clear width and appropriate hinge and latch side clearance compliant with AS1428.1-2009; (See **Figure 02** above in section D3.2)—

Doors to be located on level landing areas with maximum 1:40 grade fall over a 1450mm depth clearance;

Doors to have minimum 1450mm clearances between open door swings within airlocks/vestibules and other similarly enclosed spaces;

Door operational force to be lightweight in design to satisfy the operational requirements of AS1428.1-2009. Where this cannot be achieved, automatic or power-operated doors are required;

All doorways shall have a minimum luminance contrast of 30% between—

- door leaf and door jamb;
- door leaf and adjacent wall;
- architrave and wall;
- door leaf and architrave; or
- door jamb and adjacent wall.

The minimum width of the area of luminance contrast shall be 50mm; and

Provide compliant door hardware located at a suitable location in accordance with AS1428.1-2009.

shall activate the door before the button becomes level with the surrounding surface.

DOOR HARDWARE AND CONTROLS

Clearance between the handle and back plate or door face to be **35-45mm**;

'D' type handles to be provided on sliding doors;

Where snibs are installed, they shall have a lever handle length of a minimum **45mm** from the centre of the spindle

The force required to operate the door shall not be more than **20N**;

Where an outward opening door is not self-closing, a horizontal handrail or pull bar shall be fixed on the closing face of the side-hung door;

Except in early childhood centres, swimming pool barriers or instances where locking controls are prescribes by a statutory authority, door controls are to be located as follows—

- Controls to be grasped or turned, **900-1100mm** above FFL;
- Controls to be pushed **900-1200mm** above FFL;
- Controls to be touched (including intercom) **900-1250mm** above FFL, no closer than **500mm** from and internal corner and 1000-2000mm from the hinged door leaf and **1000-2000mm** from the hinged door leaf (in any position) or surface-mounted sliding door (in open position);

Power-operated door controls to have a minimum dimension of 25mm diameter and be proud of the surface.

CONTROLS, SWITCHES AND GPOs

Intercoms and door release devices to be located between 900-1250mm from FFL and no less than 500mm from an internal corner, compliant with AS1428.1-2009;

Power-operated doors to have raised buttons of 25mm in diameter. Controls to be located between 1-2m of door in its open position, 900-1250mm from FFL and no less than 500mm from an internal corner in accordance with AS1428.1-2009;

All light switches located on the accessible path of travel and in accessible sanitary compartments shall be located at least 500mm from internal corners. The centre-line of all light switches shall be horizontally aligned with the centre-line of all door handles;

All general purpose outlets within accessible sole-occupancy units and accessible sanitary facilities shall be located not less than 600mm and not more than 1100mm above the FFL and at least 500mm from internal corners;

Rocker action and toggle light switches in accessible sanitary compartments and in accessible sole occupancy units shall have a minimum dimension of 30mm x 30 mm; and

All push pad switches shall have a minimum diameter of 25mm.

D3.2
ACCESS TO BUILDINGS
Accessways complying with AS1428.1-2009 will be required from the main points of pedestrian entry at the allotment boundary and from any required accessible parking and from another accessible building connected by a pedestrian link.
Accessways complying with AS1428.1-2009 will be required from another accessible building connected by a pedestrian link.
Accessways complying with AS1428.1-2009 will be required from any required accessible car parking space on the allotment.
Principal pedestrian entrances are to be accessible as per AS1428.1-2009. Where there is more than 1 entrance, ensure that no less than 50% of entrances are accessible.
Where buildings have a total floor area of more than 500m ² , the pedestrian entrance which is not accessible may not be located more than 50m from an accessible entry.
Where pedestrian entrances have multiple doorways, if less than three (3) are provided, not less than one (1) is to be accessible, if more than three (3) are provided not less than 50% are to be accessible.
Where a doorways have multiple leaves (except where automated) one of the leaves must have a clear opening width in accordance with AS1428.1-2009.

TECHNICAL REQUIREMENTS

ENTRANCE WALKWAYS

With a maximum gradient of 1:20 shall have landings at maximum 15m intervals;

With a maximum gradient of 1:33 shall have landings at maximum 25 m intervals; and

If no wall of minimum 450mm height, kerb or handrail and kerbrail is provided, the floor or ground surface abutting the sides of a walkway shall have a minimum 600mm wide firm and level surface of a different material to that of the walkway and at the same level of the walkway.

ENTRANCE RAMPS

Shall have a maximum gradient of 1:14, the gradient shall be constant throughout its length and shall have a maximum allowable tolerance of 3% (provided no section of the ramp is steeper than 1:14);

Shall provide top, bottom and mid-landings, suitable for wheelchair turning in accordance with clause 10.8 of AS1428.1-2009;

The ramp shall be provided with a handrail on each side complying with clause 12 of AS1428.1-2009;

Handrails shall extend a minimum of 300mm horizontally past the transition point at the top and bottom of the ramp; and

Ramps and intermediate landings shall have kerbs or kerb rails on both sides of the ramp, complying with clause 10.3 of AS1428.1-2009—

- Kerb to be between 65-75mm height above FFL; or
- At least 150mm height above FFL.

ENTRANCE THRESHOLD RAMPS

Threshold ramps at doorways shall—

Have a maximum rise of 35mm;

Have a maximum length of 280mm;

Have a maximum gradient of 1:8; and

Be located within 20mm of the door leaf.

ENTRANCE STEP RAMPS

Step ramps shall—

Have a maximum rise of 190mm;

Have a maximum length of 1900mm;

A maximum gradient of 1:10; and

The edges of the ramp shall have a 45° splay where there is pedestrian cross-traffic, otherwise it shall have a suitable barrier of minimum 450mm height or a kerb/kerb rail where there is an open balustrade.

ENTRANCE KERB RAMPS

Kerb ramps shall have—

A maximum rise of 190 mm;

A length not greater than 1520 mm; and

A gradient not steeper than 1 in 8, located within or attached to a kerb.

ENTRANCE STAIRWAY/S

Any stair located at the site boundary is to be recessed 900mm from the site boundary to allow handrail extensions and TGSIs not to protrude into the transverse path of travel;

Any riser contained within a stairway must be opaque;

Riser to have a maximum vertical splay of 25mm from the nosing;

Stair nosing profiles shall

- be chamfered up to 5 mm × 5 mm; or
- have a sharp intersection; or
- be rounded up to 5 mm radius.

At the nosing, each tread shall have a strip not less than 50 mm and not more than 75mm deep across the full width of the path of travel with 30% luminance contrast to the background;

The contrast strip may be set back a maximum of 15mm from the front of the nosing; and

Stairway/s, other than fire-isolated stairways, must comply with clause 11 and 12 of AS1428.1-2009.

ENTRANCE DOORWAYS, DOORS AND GATES

All doors and gates on the continuous accessible path to have a minimum 850mm clear width and appropriate hinge and latch side clearance compliant with AS1428.1-2009; (See **Figure 04** below)—

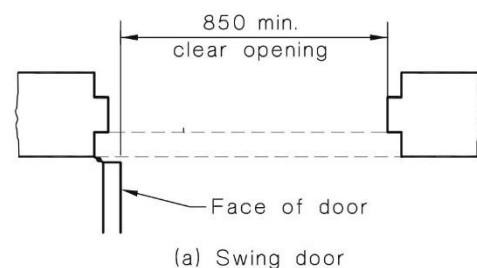


Figure 04 – Door clear opening width

Doors to be located on level landing areas with maximum 1:40 grade fall over a 1450mm depth clearance;

Doors to have minimum 1450mm clearances between open door swings within airlocks/vestibules and other similarly enclosed spaces;

Door operational force to be lightweight in design to satisfy the operational requirements of AS1428.1-2009. Where this cannot be achieved, automatic or power-operated doors are required;

All doorways shall have a minimum luminance contrast of 30% between—

- door leaf and door jamb;
- door leaf and adjacent wall;
- architrave and wall;
- door leaf and architrave; or
- door jamb and adjacent wall.

The minimum width of the area of luminance contrast shall be 50mm; and

ENTRANCE DOOR HARDWARE AND CONTROLS

Clearance between the handle and back plate or door face to be **35-45mm**;

'D' type handles to be provided on sliding doors;

Where snibs are installed, they shall have a lever handle length of a minimum **45mm** from the centre of the spindle

The force required to operate the door shall not be more than **20N**;

Where an outward opening door is not self-closing, a horizontal handrail or pull bar shall be fixed on the closing face of the side-hung door;

Except in early childhood centres, swimming pool barriers or instances where locking controls are prescribed by a statutory authority, door controls are to be located as follows—

- Controls to be grasped or turned, **900-1100mm** above FFL;
- Controls to be pushed **900-1200mm** above FFL;

- Controls to be touched (including intercom) **900-1250mm** above FFL, no closer than **500mm** from and internal corner and 1000-2000mm from the hinged door leaf and **1000-2000mm** from the hinged door leaf (in any position) or surface-mounted sliding door (in open position);

Power-operated door controls to have a minimum dimension of 25mm diameter and be proud of the surface and shall activate the door before the button becomes level with the surrounding surface.

ENTRANCE FLOOR OR GROUND SURFACES

A continuous accessible path of travel and any circulation spaces shall have a slip-resistant surface. The texture of the surface shall be traversable by people who use a wheelchair and those with ambulant or sensory disability;

Abutment of surfaces shall have a smooth transition. Design transition shall be 0mm, however, construction tolerances are as follows—

- 0 ±3mm vertical change in level; and
- 0 ±5mm change in level provided the edges have a bevelled or rounded edge to reduce the likelihood of tripping.

Matting recessed within an accessible path of travel—

- Where of metal and bristle type construction or similar, its surface shall be no more than 3mm if vertical or 5mm if rounded or bevelled, above or below the surrounding surface; and
- Where of a mat or carpet type material, shall have the fully compressed surface level with or above the surrounding surface with a level difference no greater than 3mm if vertical or 5mm if rounded or bevelled.

Grates within an accessible path of travel—

- Circular openings shall be not greater than 13 mm in diameter;
- Slotted openings shall be not greater than 13 mm wide and be oriented so that the long dimension is transverse to the dominant direction of travel; and
- Where slotted openings are less than 8 mm, the length of the slots may continue across the width of paths of travel.

D3.3
PARTS OF BUILDING TO BE ACCESSIBLE
Ramps, except a fire-isolated ramps are required to comply with AS1428.1
Stairways, except fire-isolated stairways are required to comply with AS1428.1
Fire-isolated stairways are required to comply with Clause 11.1 (f) and (g) of AS1428.1
Passenger Lifts are required to be specified in accordance with E3.6 (refer to Section 5.3)
Passing spaces (1800 x 2000mm) are required to be provided at maximum 20m intervals if a direct line of sight is not available.
Turning spaces (1540 x 2070mm) are required to be provided within 2m of the end of an accessway where it is not possible to continue and at maximum 20m intervals along an accessway.
A ramp/passenger lift need not be provided to serve a storey or level other than the entrance storey in Class 5, 6, 7b or 8 building— <ul style="list-style-type: none"> Containing no more than 3 storeys; and With a floor area for each storey not more than 200m².
TECHNICAL REQUIREMENTS

PATHS OF TRAVEL

The minimum width of the continuous accessible path to be 1000mm, with a minimum unobstructed height of 2000mm, or 1980mm at doorways;

Turning spaces for wheelchair 180° turns require 1540mm wide by 2070mm (in the direction of travel) within 2m of the ends of accessways and at maximum 20m intervals;

90° turns on the continuous accessible path of travel to have minimum circulation space of 1500 x 1500mm (inside corner can be splayed); and

Where the width of the continuous accessible path is less than 1200mm, 30° - 60° turns to have a splay of 500 x 500mm on the internal corner of the turn.

FLOOR OR GROUND SURFACES

A continuous accessible path of travel and any circulation spaces shall have a slip-resistant surface. The texture of the surface shall be traversable by people who use a wheelchair and those with ambulant or sensory disability;

Abutment of surfaces shall have a smooth transition. Design transition shall be 0mm, however, construction tolerances are as follows—

- 0 ±3mm vertical change in level; and
- 0 ±5mm change in level provided the edges have a bevelled or rounded edge to reduce the likelihood of tripping.

Where carpets or any soft flexible materials are used on the ground or floor surface—

- The pile height or pile thickness, shall not exceed 11mm and the carpet backing thickness shall not exceed 4mm;
- Exposed edges of floor covering shall be fastened to the floor surface and shall have a trim along the entire length of any exposed edge; and
- At the leading edges, carpet trims and any soft flexible materials shall have a vertical face no higher than 3mm or a rounded bevelled edge no higher than 5mm or above that height a gradient of 1:8 up to a total maximum height of 10mm.

Matting recessed within an accessible path of travel—

- Where of metal and bristle type construction or similar, its surface shall be no more than 3mm if vertical or 5mm if rounded or bevelled, above or below the surrounding surface; and
- Where of a mat or carpet type material, shall have the fully compressed surface level with or above the surrounding surface with a level difference no greater than 3mm if vertical or 5mm if rounded or bevelled.

Grates within an accessible path of travel—

- Circular openings shall be not greater than 13 mm in diameter;
- Slotted openings shall be not greater than 13 mm wide and be oriented so that the long dimension is transverse to the dominant direction of travel; and
- Where slotted openings are less than 8 mm, the length of the slots may continue across the width of paths of travel.

WALKWAYS

With a maximum gradient of 1:20 shall have landings at maximum 15m intervals;

With a maximum gradient of 1:33 shall have landings at maximum 25 m intervals; and

If no wall of minimum 450mm height, kerb or handrail and kerbrail is provided, the floor or ground surface abutting the sides of a walkway shall have a minimum 600mm wide firm and level surface of a different material to that of the walkway and at the same level of the walkway.

RAMPS

Shall have a maximum gradient of 1:14, the gradient shall be constant throughout its length and shall have a maximum allowable tolerance of 3% (provided no section of the ramp is steeper than 1:14);

Shall provide top, bottom and mid-landings, suitable for wheelchair turning in accordance with clause 10.8 of AS1428.1-2009;

The ramp shall be provided with a handrail on each side complying with clause 12 of AS1428.1-2009;

Handrails shall extend a minimum of 300mm horizontally past the transition point at the top and bottom of the ramp; and

Ramps and intermediate landings shall have kerbs or kerb rails on both sides of the ramp, complying with clause 10.3 of AS1428.1-2009—

- Kerb to be between 65-75mm height above FFL; or
- At least 150mm height above FFL.

THRESHOLD RAMPS

Threshold ramps at doorways shall—

Have a maximum rise of 35mm;

Have a maximum length of 280mm;

Have a maximum gradient of 1:8; and

Be located within 20mm of the door leaf.

STEP RAMPS

Step ramps shall—

Have a maximum rise of 190mm;

Have a maximum length of 1900mm;

A maximum gradient of 1:10; and

The edges of the ramp shall have a 45° splay where there is pedestrian cross-traffic, otherwise it shall have a suitable

barrier of minimum 450mm height or a kerb/kerb rail where there is an open balustrade.

KERB RAMPS

Kerb ramps shall have—

A maximum rise of 190 mm;

A length not greater than 1520 mm; and

A gradient not steeper than 1 in 8, located within or attached to a kerb.

STAIRWAY/S

Stair located within internal corridors to be recessed one (1) tread-width and handrail extension with downturn to avoid protrusion into transverse path of travel

Any riser contained within a stairway must be opaque;

Riser to have a maximum vertical splay of 25mm from the nosing;

Stair nosing profiles shall

- be chamfered up to 5 mm × 5 mm; or
- have a sharp intersection; or
- be rounded up to 5 mm radius.

At the nosing, each tread shall have a strip not less than 50 mm and not more than 75mm deep across the full width of the path of travel with 30% luminance contrast to the background;

The contrast strip may be set back a maximum of 15mm from the front of the nosing;

Stairway/s, except a fire-isolated stairway, must comply with clause 11 and 12 of AS1428.1-2009 This may require an offset tread (see **Figure 05** below);

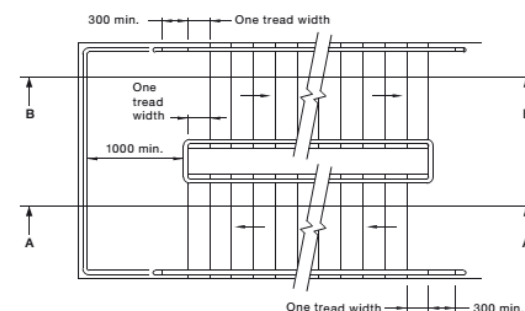


Figure 05 – Offset tread within stairs

D3.5

ACCESSIBLE CARPARKING

All parts of the building comprised of different building classifications shall be provided with the correct number of dedicated car spaces in accordance with Table D3.5 of the BCA.

Where required, accessible carparking spaces and associated shared areas are required to be provided with dimensions and features in accordance with AS/NZS 2890.6:2009.

Accessible carparking need not be provided in a class 7a building or carparking area where a parking service is provided and direct access to carparking spaces is not available to the public.

Accessible carparking spaces need not be designated where a total of not more than 5 carparking spaces are provided.

TECHNICAL REQUIREMENTS

ACCESSIBLE CAR PARKING DIMENSIONS

Accessible angle car space/s are to have minimum dimensions of 2400 x 5400mm with an adjacent shared zone of 2400 x 5400mm at the same level on one side of the car parking space and a shared area (not required to be outlined) of 2400 x 2400mm at one end of the dedicated space.

Accessible parallel parking space/s to be minimum of 3200mm wide x 7800mm long with an adjacent shared area on the non-trafficked side with minimum dimensions of 1600 x 7800mm. The shared zone may be higher than the dedicated space id served by a kerb of no more than 190mm and if provided with a width increase to accommodate a kerb ramp designed in accordance with AS1428.1-2009

Accessible car spaces and associated shared zone to have a minimum vertical clearance no less than 2500mm. The vertical clearance leading to the accessible car spaces may not be less than 2200mm;

ACCESSIBLE CAR PARKING DELINEATION

The dedicated space shall be outlined with yellow unbroken lines 80mm-100mm wide on all sides.

The shared area shall be outlined with yellow unbroken lines 80mm-100mm wide on all sides and marked with diagonal stripes 150mm-200mm wide at 45° with spaces 200mm-300mm between stripes; and

A bollard shall be located at the front of the shared area, centred on the area and 800mm ± 50mm from the front of the area.

ACCESSIBLE CAR PARKING SPACE IDENTIFICATION

Accessible car parking space to be identified by means of a white symbol of access in accordance with AS1428.1-2009 between 800mm-1,000mm high placed on a blue rectangle with no side more than 1,200mm, placed in the centre of the space between 500mm-600mm from its entry point and.

The requirement for a symbol of access to be placed on the pavement shall not apply to any privately owned parking space for people with disabilities associated with a single residence and intended primarily for use by occupants of that residence.

BRAILLE AND TACTILE REQUIREMENTS

Braille is to be as follows—

- Grade 1, uncontracted Unified English Braille, in accordance with the Australian Braille Authority;
- Raised and domed;
- Located 8mm below the bottom line of text;
- Left justified;
- If an arrow is used, a solid arrow must be provided for Braille users;
- Braille numbers shall be preceded by a Braille numerical sign.
- Braille indicator is to be semicircular, located at the left margin, horizontally aligned with the first line of Braille text and is only to be used where there are multiple lines of text.

Braille and tactile sign specification to be as follows—

- Tactile characters to be raised or embossed to a height of not less than 1mm and not more than 1.5mm;
- Sentence case to be used for all tactile characters;
- Upper case tactile characters to have a height of 15-55mm, except exit signage required by E4.5, which is required to have a height of **20-55mm**;
- Lower case tactile characters to have a height of **50%** of the related upper characters;
- Minimum letter spacing to be **2mm**;
- Minimum word spacing to be **10mm**;
- Thickness of letter strokes to be **2-7mm**;
- Tactile text to be left justified, single words may be centre justified;
- Tactile text must be Arial typeface;
- Tactile characters and symbols to have rounded edges;
- The sign and frame must have rounded edges; and
- Sign characters, symbols, logos and background, must have a matte or low sheen finish.

TECHNICAL REQUIREMENTS

GENERAL SIGNAGE REQUIREMENTS

Elements of a sign shall be arranged horizontally or vertically, where words are used they should be displayed horizontally.

The International symbol of Access and the International Symbol for Deafness may be used without explanatory text.

International symbol of access to incorporate—

- a stylized figure in wheelchair pointing to the right on a plain square background (proportional layout to be in accordance with AS1428.1-2009 Figure 10);
- Colour of figure to be white on blue background, blue B21, ultramarine, in accordance with AS2700-2011; and
- Signs indicating the direction of a facility, an arrow to be used in combination with the International Symbol for Access.

International symbol for deafness to incorporate—

- A stylized ear and diagonal slash on a plain square background (proportional layout to be in accordance with AS1428.1-2009 Figure 12); and
- Colour of figure to be white on blue background, blue B21, ultramarine, in accordance with AS2700-2011.

Luminance Contrast to be as follows—

- Background, negative space, fill or border with a minimum width of 5mm to have a luminance contrast of not less than 30% to the surface on which it is mounted; and
- Tactile characters, icons and symbols must have a minimum luminance contrast of 30% to which the characters are mounted; and
- Lighting must be provided to ensure luminance contrast is met.

D3.6

SIGNAGE

Clear and legible Braille and tactile signage complying with Specification D3.6 of the BCA and incorporating the international symbol of access or deafness, in accordance with AS1428.1-2009 must identify—

- Each accessible unisex sanitary facility identifying if the facility is for left- or right -handed use;
- Each ambulant accessible sanitary facility on the door of the facility;
- Directional signage at sanitary facilities to indicate the location of the nearest accessible sanitary facility where not evident; and
- Directional signage to indicate location of nearest accessible pedestrian entrance where not evident.

Each door in the building required by BCA Provision E4.5 is to be provided with an exit sign stating—

- Exit; and
- Level; and
- Either the floor level number, floor level descriptor or combination of the two.

Areas with a hearing augmentation system, identifying—

- the type of hearing augmentation; and
- the area covered within the room; and
- if receivers are being used, where receivers can be obtained.

LOCATION OF BRAILLE AND TACTILE SIGNAGE

Facilities shall be identified by the use of raised text, Braille and symbols if required. Identification shall be between **1200-1600mm** above FFL

Signs with single lines of characters must have the line of tactile characters **1200-1600** above FFL.

Signs identifying rooms containing facilities listed in BCA Clause D3.6 and exit signage required by E4.5 are to be located—

- On the wall of the latch side of the door with the leading edge if the sign located **50-300mm** from the architrave; or
- Where the above is not possible, on the door itself; and
- For exit signage on the side that faces the person seeking egress.

SIGNAGE REQUIRED AT SANITARY FACILITIES

Sanitary facilities shall be identified with the following—

- raised and visual versions of the international symbol of access;
- raised and visual versions of the male and female symbols;
- raised text in title case (e.g. Male Toilet);
- Braille that fully describes visual information

Signage for unisex accessible facilities shall indicate if transfer is left-hand (LH) or right hand (RH), in a minimum font size of **20mm** sans serif.

Entry doors to airlocks serving areas containing sanitary facilities shall be identified with raised text and Braille, with raised and visual symbols identifying each sanitary facility within. Where facilities for male and female are separate, a dividing line should be placed between each symbol

Refer to AS1428.1-2009 Figure 9 for examples of signage.

D3.7

HEARING AUGMENTATION

Hearing augmentation systems are required where in built amplification system, other than one used for emergency warning is installed within—

- A 9b building;
- An auditorium, conference room, meeting room or room for judicatory purposes; or
- At any ticket office, teller's booth, reception area or the like, where the public is screened from the service provider.

If any room is provided with an inbuilt amplification system then it is to be provided with a hearing augmentation system complying with one of the following, in accordance with BCA Provision D3.7—

- An induction loop provided to not less than 80% of the floor area of the room/space served by the inbuilt amplification system; or
- A system requiring the use of receivers or the like available to not less than 95% of the floor area of the room or space served by the inbuilt amplification system. The number of receivers provided shall be calculated based upon the number of persons accommodated within the area (refer to BCA Clause D3.7(b)(ii)); and
- Any screen or scoreboard associated with a Class 9b building and capable of displaying public announcements must be capable of supplementing any public address system, other than a public address system used for emergency warning purposes only.

D3.8

TACTILE INDICATORS

Tactile ground surface indicators complying with sections 1 and 2 of AS1428.4.1-2009 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 stairway);
- Escalators/moving walks;
- A ramp (other than a fire-isolated ramp, step ramp, kerb ramp or swimming pool; ramp);
- An overhead obstruction (other than a doorway) less than 2m above floor level in the absence of a suitable barrier; and
- An accessway meeting a vehicular way adjacent to any pedestrian entrance to a building (excluding a pedestrian entrance serving an area excluded under D3.4).

A hostel for the aged, nursing home for the aged, a residential aged care building Class 3 accommodation for the aged, Class 9a health care building or a Class 9c building need not provide TGSIs at stairways or ramps if handrails incorporating a raised dome button designed in accordance with AS/NZS 1428.4.1:2009 has been provided.

TECHNICAL REQUIREMENTS

GENERAL

Tactile ground surface indicators shall be designed in accordance with AS1428.4.1:2009 and AS/NZS 1428.4.1:2009. Warning indicators should be installed as follows—

- For the full width of the path of travel;
- Perpendicular to the direction of travel when approaching the hazard;
- Set back 300 ±10mm from the edge of the hazard (except at railways and wharves);
- Integrated warning TGSIs which are required to be detected by a person approaching at an angle to the continuous path of travel should be arranged over a minimum depth of 600-800mm from the direction of approach (and in accordance with AS1428.4.1:2009 Figure 2.1);

- Discrete warning TGSIs used over a depth of 300-400mm require a minimum of 6 truncated cones, provided in the direction of travel (and in accordance with AS1428.4.1:2009 Figure 2.1); and
- Where discrete warning TGSIs need to be detected by a person approaching at an angle to the continuous accessible path, a minimum of 12 truncated cones are required in the direction of travel (and in accordance with AS1428.4.1:2009 Figure 2.1).

TGSIs AT STAIRWAYS AND RAMPs

At stairways and ramps, escalators and moving walks]—

- Where a landing is 3000mm or more to the nosing edge the warning indicators should be over a distance of 600-800mm;
- Where a landing is less than 3000mm to the nearest nosing edge, indicators shall be over a distance of 300-400mm;
- Where handrails are continuous on both sides of the landing and the landing is less than 3000mm to the nearest nosing edge TGSIs are not required.

TGSIs AT AGED CARE FACILITIES

Where the BCA does not required the installation of TGSIs (e.g. residential aged care facilities), handrails are to have a raised tactile warning, domes button to be—

- **4-5mm** in height and **10-12mm** in diameter;
- Provided on the top of the handrail;
- **150 ±10mm** from the end of the handrail.

D3.12

GLAZING ON AN ACCESSWAY

Where there is no chair rail, handrail or transom, all frameless or fully glazed doors, sidelights, including any glazing capable of being mistaken for a doorway or opening, shall be clearly marked for their full width with a solid contrasting line, in accordance with Clause 6.6 of AS1428.1-2009.

TECHNICAL REQUIREMENTS

The contrasting line shall be not less than **75mm** wide and shall extend across the full width of the glazing panel. The lower edge of the contrasting line shall be located between **900mm-1000mm** above FFL.

Any contrasting line on the glazing shall provide a minimum of **30%** luminance contrast when viewed against the floor surface or surfaces within **2m** of the glazing on the opposite side.

A1.4 Part E3 – Lift Installations

E3.6

LIFT INSTALLATIONS

Passenger lifts to be an approved type in accordance with BCA—Clause E3.6a and have accessible features in accordance with E3.6b.

Passenger lifts must not rely on a constant pressure device for its operation if the lift car is fully enclosed

Stairway platform lifts must not—

- Be used to serve a space in a building accommodating more than 100 persons;
- Be used in a high traffic public use area;
- Be used where it is possible to install another type of lift;
- Connect more than 2 storeys;
- Where more than 1 stairway lift is installed, serve more than 2 consecutive storeys; and
- When in the folded position, encroach into the minimum width of s stairway.

Low-rise platform lifts may not travel more than **1000mm** in height variation;

Low-rise, low-speed constant pressure lifts must not—

- For an enclosed type travel more than **4m**;
- For an unenclosed type travel more than **2m**;
- Be used in high traffic areas.

Small-sized low-speed automatic lifts must not travel more than **12m**.

TECHNICAL REQUIREMENTS

All lifts, except a stairway platform lift and low-rise platform lift must be provided with a handrail complying with Clause 5.3 AS1735.12-1999 (i.e. with a length of not less than **600mm**, located not more than **500mm** from any button or operating device and between **850-950mm** above FFL)

A passenger lift travelling **greater than 12m** requires minimum internal dimensions of **1400mm x 1600mm**.

Passenger lifts travelling **less than 12m** requires minimum internal dimensions of **1100mm x 1400mm**.

All lifts, except a stairway platform lift, must have a minimum clear width of car door opening of 900mm, in accordance with Section 2 of AS1735.12-1999, lift landing doors at the upper landing and emergency hands-free communication, including a button to alert a call centre of a problem and a light to signal that the call has been received.

All lifts with a power-operated door must have a passenger protection system in accordance with Clause 4.2 of AS1735.12-1999.

All lifts, except stairway platform lifts and low-rise platform lifts, must have lift call buttons at landings in accordance with Section 7 of AS1735.12-1999 (i.e. located between 900mm and 1200mm above the floor and not less than 500mm from any corner or obstruction) and internal lift car control buttons in accordance with Section 7 of AS1735.12-1999 (i.e. located between 700mm and 1250mm above the floor. Where doors are responding to a landing button they shall remain fully open for a minimum of 6s in accordance with Section 4.3 of AS1735.12-1999.

All enclosed lift cars must have lighting in accordance with Section 10 of AS1735.12-1999 (i.e. compliant with AS/NZS1680.0-2009).

All lifts serving more than two (2) levels must have automatic audible information within the lift car to identify level each time the car stops and audible and visual indication at each lift landing to indicate the arrival of the lift car.

Where there are three (3) or more lifts in a bank, both visible and audible indications of the approach and direction of travel of the lift car shall be provided at each landing.

Passenger lifts to be an approved type in accordance with BCA—Clause E3.6a and have accessible features in accordance with E3.6b.

Passenger lifts must not rely on a constant pressure device for its operation if the lift car is fully enclosed

Stairway platform lifts must not—

- Be used to serve a space in a building accommodating more than 100 persons;
- Be used in a high traffic public use area;
- Be used where it is possible to install another type of lift;
- Connect more than 2 storeys;
- Where more than 1 stairway lift is installed, serve more than 2 consecutive storeys; and
- When in the folded position, encroach into the minimum width of s stairway.

Low-rise platform lifts may not travel more than **1000mm** in height variation;

Low-rise, low-speed constant pressure lifts must not—

- For an enclosed type travel more than **4m**;
- For an unenclosed type travel more than **2m**;
- Be used in high traffic areas.

A1.5 Part F2 – Accessible sanitary and other facilities

F2.4

ACCESSIBLE SANITARY FACILITIES

ACCESSIBLE UNISEX SANITARY FACILITIES

Where BCA Table F2.3 requires closet pans then an accessible unisex sanitary compartment is required to be provided—

- An accessible unisex sanitary compartment must contain a closet pan, washbasin, shelf or bench top and adequate means of disposal for sanitary towels;
- An accessible sanitary facility must be located so that it can be entered without crossing an area reserved for one sex only;
- Where there are two (2) or more accessible unisex sanitary facilities provided, ensure a balance of left and right handed facilities
- Provide one (1) accessible unisex sanitary compartment at each bank of male / female toilets on each storey;
- Where male sanitary facilities are provided at a separate location to female sanitary facilities, accessible unisex sanitary facilities are only required at one of these locations.

AMBULANT SANITARY FACILITIES

At each bank of toilets where there is one (1) or more toilets in addition to an accessible unisex sanitary compartment, a WC suitable for a person with an ambulant disability in accordance with AS1428.1-2009 must be provided for use by males and females.

ACCESSIBLE UNISEX SHOWERS

Accessible unisex showers must be provided in accordance with BCA Table F2.4(b)—

- Class 9b theatres and sporting venues must be provided with one (1) shower for each 10 participants or part thereof;
- Within Class 2 buildings where showers are provided in common, not less than one (1) is required to be accessible;
- Within Class 3 and Class 9b accessible showers are required within every accessible sole-occupancy unit provided with showers and 1 for every 10 showers or part thereof when provided in common areas;

- Within Class 1b buildings not less than one (1) accessible shower is to be provided. Where private accessible showers are provided for each accessible bedroom a common accessible shower is not required.

TECHNICAL REQUIREMENTS

ACCESSIBLE UNISEX SANITARY FACILITIES

The internal dimensions and locations of fixtures and fittings shall comply with Clause 15 of AS1428.1-2009—

- Circulation space to comply with AS1428.1-2009 - Minimum WC circulation space of **1900mm width x 2300mm** length to be provided;
- WC doors to be either hinged or sliding and to comply with door requirements of AS1428.1-2009. Doors shall be provided with an in-use indicator and a bolt or catch. Where a snib handle shall have a minimum length of 45mm from the centre of the spindle. In an emergency, the latch mechanism shall be operable from the outside;
- WC seat to be of the full, round type, be securely fixed in position when in use, have seat fixings that create lateral stability for the seat when in use, be load-rated to 150kg and have a minimum luminance contrast of 30% with the background (e.g. pan wall or floor);
- The front edge of the centre of the backrest is to be positioned to achieve an angle of between 94 – 100 degrees back from the seat hinge. Backrest to be capable of withstanding a force in any direction of 1100N;
- Grabrails to be specified and installed in accordance with AS1428.1-2009 Clause 15.2.7;
- Water taps to have lever handles, sensor plates or other similar controls, where separate taps are provided for hot and cold water the hot is to be located to the left of the hot water in horizontal configurations, or above the cold water tap in vertical configurations. Where hot water is provided, the water shall be delivered through a mixing sprout;
- Hand-operated flushing controls are to be located 600mm min 1000mm max from the floor and within 500mm from the centre-line of the WC pan when located on the back wall, or 600mm min 1000mm max from the floor and 300mm max in both directions from the front of the WC pan when located on the side wall. The flushing control is to be proud of

the surface and shall activate the flush before becoming level with the surrounding surface; and

- Toilet roll dispensers are to be located 700mm max from the floor and 300mm max from the front of the WC pan. The dispenser should not encroach upon grabrail clearances

AMBULANT SANITARY FACILITIES

The internal dimensions and locations of fixtures and fittings shall comply with Clause 16 of AS1428.1-2009—

- Circulation space shall be provided in accordance with AS1428.1-2009, cubicle width to be **900-920mm**, **900 x 900mm** circulation space is required within the cubicle and outside the cubicle door;
- Doors to ambulant sanitary facilities shall have openings with a minimum clear opening width of **700mm**;
- Grabrails should be installed in accordance with Clause 17 of AS1428.1-2009;
- Doors shall be provided with an in-use indicator and a bolt or catch. Where a snib handle shall have a minimum length of **45mm** from the centre of the spindle. In an emergency, the latch mechanism shall be operable from the outside; and
- A coat hook shall be provided within the sanitary compartment at a height between **1350-1500mm** from FFL.

ACCESSIBLE UNISEX SHOWERS

The internal dimensions and locations of fixtures and fittings shall comply with Clause 15 of AS1428.1-2009—

- Shower circulation space to be provided in accordance with AS1428.1-2009;
- Waste outlet is to be designed in accordance with the requirements of AS1428.1-2009; and
- Grabrails, shower head, soap holder, folding seat and clothes hanging devices to be provided in accordance with AS1428.1-2009.

APPENDIX 2 – DOCUMENTATION PROVIDED FOR ASSESSMENT

This accessibility assessment was based upon the documentation prepared by Bennett and Trimble, Clouston Associates and SECOM, namely—

DRAWING NUMBER	DESCRIPTION	DATE
BENNETT AND TRIMBLE		
Revision A	Urban Design Report	02.03.2018
CLOUSTON ASSOCIATES		
S17-0100 Issue E	Public Domain and Landscape Strategy	23.02.2018
AECOM		
60558549	Town Centre South Civil Package	23.02.2018

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