CODE PERFORMANCE

Access Report

Project –

University of Sydney ETP Stage 1

Alterations & Additions to an existing University building

Design Phase –

Development Application Design Phase

Date - 30 November 2017

For - Laing O'Rourke Australia Construction Pty Ltd

Ref - 17380 – R1.1

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CODE PERFORMANCE

TABLE OF CONTENTS

Amendment Schedule

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Version	Date
R1.0	17.11.2017
R1.1	30.11.2017

1.0 INTRODUCTION

1.1 General

This Access Report has been prepared at the request of Laing O'Rourke Australia Construction Pty Ltd and for the purpose of completing an assessment of the sketch design associated with the proposed alterations and additions to the existing university ETP building located at Sydney University.

1.2 Purpose

The purpose of this report is to identify the compliance status of the architectural design documentation against the following –

- Relevant accessibility related 'deemed-to-satisfy' (DTS) requirements of Building Code of Australia (BCA) 2016. These provisions are generally contained within Part D3 and Clause(s) E3.6 & F2.4 of the code.
- Accessibility related Australian Standards as referenced by BCA 2016, as relevant to this project and as directly nominated in the report.
- The Disability (Access to Premises – Building) Standards 2010 *(Premises Standards)*.

1.3 Information Relied Upon

Architectural plans prepared by Cox, as follows –

Drawing No.	Revision	Date	Drawing Title
A-DA-2101A	C	29.11.2017	Floor Plan – Level 01 (Sheet 01 of 02)
A-DA-2101B	C	29.11.2017	Floor Plan – Level 01 (Sheet 02 of 02)
A-DA-2102	C	29.11.2017	Floor Plan – Level 02
A-DA-2103	C	29.11.2017	Floor Plan – Level 03
A-DA-2104	C	29.11.2017	Floor Plan – Level 04
A-DA-2105	C	29.11.2017	Floor Plan – Level 05
A-DA-2106	C	29.11.2017	Floor Plan – Level 06
A-DA-2107	C	29.11.2017	Floor Plan – Level 07
A-DA-2108	C	29.11.2017	Floor Plan – Level 08
A-DA-2109	C	29.11.2017	Floor Plan – Level 09
A-DA-2110	C	29.11.2017	Floor Plan – Level 10
A-DA-2111	C	29.11.2017	Floor Plan – Level 11, 12 13

1.4 Exclusions

The content of this report relates only to the matters directly nominated in this report and does not assess / include the following –

- Any parts of the BCA / standards not directly referenced in this report.
- Disability Discrimination Act 1992 *(DDA focuses on results. Does not offer prescriptive compliance options)*.
- Services; equipment operating capacity / design. Work Health & Safety considerations.
- Local planning policies and/or guidelines, other than those directly identified.

1.5 BCA Assessment Data

Listed below are our understanding of relevant BCA classification(s) in relation to the subject building / part. BCA Consultant / Certifier shall have the final say in determining classifications.

BCA Building Classification(s): Class 9b - School / University

2.0 PREMISES STANDARDS COMMENTARY

2.1 General

The following commentary summarises the compliance status of the architectural design in relation to the Premises Standards.

The basic trigger for application of the Premises Standards is when any building work is proposed and requires a building / construction approval.

On this occasion, the proposed works will involve internal alterations which will require building / construction approval such as a CC or CDC to be issued by a certifying authority.

For the proposed alterations to the existing building, we highlight that the BCA applies only to the proposed alterations / new work. No need occurs within the *BCA* for upgrade to the existing portions of the building.

However, an existing building upgrade provision at Part 2.1(5) of the *Premises Standards*, known as the 'affected part' can trigger the need for upgrade of the existing building and a compliant *continuous accessible path of travel* from the building principal pedestrian entrance to new work.

Where the Premises Standards 'affected part' is triggered, the need would exist to upgrade existing building parts as necessary to achieve a *continuous accessible path of travel* from the principal pedestrian entrance to new work; irrespective of the initial project intention to upgrade the subject existing building part(s).

In this instance, we confirm a 'mandatory' necessity exists to upgrade the 'affected part' as a result of the subject building undergoing works proposed by a single tenant / building owner (being the University).

Subsequently, the proposed works trigger a need to upgrade accessway features to areas of new work, including the principal pedestrian entrance to the relevant building entries and the path of travel to the new work.

Compliance is readily achievable, as the proposed works include new building entries and new passenger lifts. Thereby, will comply with the current BCA Access provisions and automatically satisfies the Premises Standards need for accessible entries and access between floors and to new works.

In relation to the existing building adjoining the new work but not incorporating any new work; no need exists to upgrade the extent of access to or through.

Commentary within Section 3.0 of this report reflects this requirement.

3.0 TECHNICAL ASSESSMENT & COMMENTARY

3.1 General

The following summarises the compliance status of the architectural design in terms of the DTS accessibility provisions of BCA 2016, as are principally contained within Part D3 and Clauses E3.6 & F2.4 of the code.

Alongside each clause heading; one of four compliance categories is provided, as follows –

Complies:	BCA design compliance is achieved.
Does not comply:	A BCA DTS compliance departure is noted. Resolution options are provided.
N/A:	Not Applicable or not directly relevant. Detail offered for application if / as relevant.
Design Detail:	Compliance commentary is provided. Such should not be considered deficiencies, but matters for consideration by the design team / assessment authority at relevant / nominated stages of design.

BCA Interpretation Note(s) –

i. Readily moveable furniture has been treated as indicative. The person/s responsible for furnishing the building (parts) should ensure their furnishing layout/s do not cause AS1428.1 circulation deficiencies.

ii. *Slip-resistant floor surface/s* - BCA 2016 does not directly specify slip-resistance classification(s) for all accessible paths of travel; however, we highlight the need under AS1428.1-2009 for all accessible paths of travel to have a slip-resistant surface. We recommend you should seek surface finish advice from an independent specialist slip safety consultant.

3.2 SECTION D – ACCESS & EGRESS

Part D3 – Access For People With Disabilities

BCA Clause D3.1 - General building access requirements

Buildings and parts of buildings must be accessible as required by Table D3.1 and as summarised below:

Class 9b

Access must be provided to and within all areas normally used by the occupants.

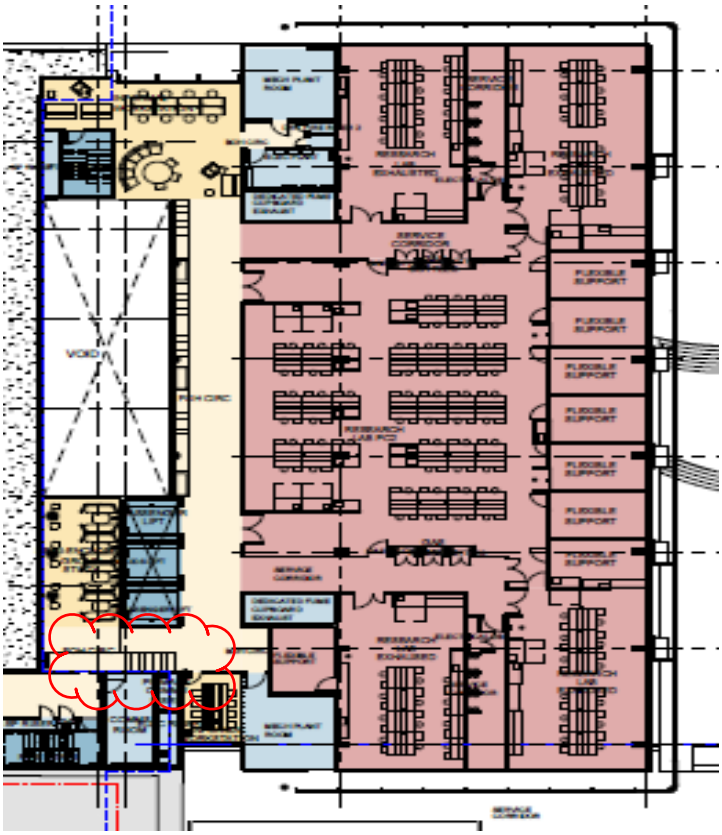
Design Detail	Access is required to and throughout the areas of 'new work' and the Affected Part' (per report Part 2.0) in accordance with AS 1428.1-2009. *DTS Compliance Departure 1* An accessible path of travel is not provided across the split level at Level 9. Stairs are provided at the point(s) of interconnection between the split levels and causes an access barrier and a DTS compliance departure with this clause. *Resolution option(s) 1* The client will pursue a *BCA Performance Solution* to demonstrate the suitability of the current design at the Construction Certificate design phase. Hence, no concern for adjustment at the CC design phase. Reliance will be placed upon (amongst other things) – a. Enhanced way-finding signage. b. Passenger lift provision is provided at both split levels, hence, access is available to all building parts, although not direct.

c. 8 of 9 floors includes compliant access between split levels. This is a good access outcome in an existing building.

d. Existing building constraints.

e. A reduced extent of work to the existing building part at the lower tier, therefore, whilst an 'affected part' access upgrade trigger is caused, the extent of work causing the trigger is nominal.

See below plan extract which illustrates the stairs / access barrier outlined **Red**.



Otherwise, compliance is readily achievable in this design; however, we highlight the following points for attention during design progression –

a. All external terraces / courtyards are required to be accessible from the building. Although, as conveyed during our design meeting, there is no need for direct access between tiered outdoor areas.

b. Level floor transitions are required at the thresholds of all doors.

Otherwise, the design is readily capable of compliance during detailed design.

A summary of AS 1428.1-2009 requirements for accessways is provided at **Appendix 1** to assist the project team during construction.

BCA Clause D3.2 – Access to Buildings

An accessway must be provided to a building required to be accessible:

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

An accessway must be provided through the principal pedestrian entrance, and:

- through not less than 50% of all pedestrian entrances including the principal pedestrian entrance; and

- in a building with a floor area more than 500m², a pedestrian entrance which is not accessible must not be located more than 50m from an accessible pedestrian entrance.

Doors on an accessway having multiple leaves must have a clear opening width of not less than 850mm for a single leaf.

Design Detail	All new building entries are nominated / designed to be accessible and satisfy the requirements of this clause. Compliance is readily achievable as the design progresses; however, we highlight the need for floor levels with landing / entry door transition details, such that this office can perform a thorough compliance review. A summary of AS 1428.1-2009 requirements for accessways is provided at **Appendix 1** to assist the project team during construction.

BCA Clause D3.3 – Parts of Buildings to be Accessible

In a building required to be accessible:

- every ramp & walkway *(except fire-isolated)* must comply with Clause 10 of AS1428.1-2009;
- every stairway *(except fire-isolated)* must comply with Clause 11 of AS1428.1-2009;
- all fire-isolated stairways are required to comply with Clause 11.1(f) and (g) of AS 1428.1-2009;
- carpet installed in an accessway must comply with clause D3.3(g) and (h)

Design Detail	Suitable turning / passing spaces are available throughout the areas of 'new work' and the Affected Part' in accordance with AS 1428.1-2009. 1x point of access is available at each floor across the atrium / connection between the 2x key building parts and satisfies the requirements of this clause. No statutory accessibility trigger compels upgrade of the existing fire stairs. However, our experience on university buildings in the past and a general client desire to use fire stairs for general transition between floors; Certifiers often compel upgrade of existing fire stairs with safety / access features to accord with Clause(s) 11 & 12 of AS1428.1 (i.e. tactiles, handrails & nosing strips). We suggest discussion with the client and Certifier in the early stages of design. We highlight the need for more detailed design of gradients, levels, handrail extensions and the like as the design progresses, however, it is clear that design is readily able to comply with the requirements of this clause and AS1428.1. A summary of AS 1428.1-2009 requirements for accessways is provided at **Appendix 1** to assist the project team during construction.

BCA Clause D3.4 – Exemptions

An area where access would be inappropriate because of the particular purpose for which the area is used, or would pose a health or safety risk for people with a disability; is not required to be fully accessible.

Design Detail	The following parts of the building have been offered an exemption from being fully accessible: ▪ Plant rooms. ▪ Store rooms.

BCA Clause D3.5 – Accessible Carparking

Not applicable. No carparking proposed or affected in this project.

BCA Clause D3.6 – Signage

Accessible buildings must have signage to comply with AS1428.1-2009 and as follows –

- braille and tactile signage incorporating the international symbol of access or deafness, must identify each sanitary facility and space with hearing augmentation system; and
- identify each door required by Clause E4.5 to be provided with an exit sign and state "Exit" and "Level" followed by the floor number;
- signage incorporating the international symbol of access or deafness, must be provided within a room containing a hearing augmentation system identifying the hearing augmentation type, area covered and location of receivers;
- signage in accordance with AS1428.1 must be provided for accessible unisex sanitary facilities to identify left or right handed use;
- signage to ambulant accessible facility must be on the door of the facility;
- directional signage where a pedestrian entrance is not accessible.

Design Detail	Signage shall be installed in this project as necessary, but shall include as a minimum: ▪ Signage to the accessible sanitary compartment in accordance with AS1428.1-2009. ▪ identify each door required by Clause E4.5 to be provided with an exit sign and state "Exit" and "Level" followed by the floor number. ▪ signage in accordance with AS1428.1 must be provided for accessible unisex sanitary facilities to identify left or right handed use. ▪ directional signage where a pedestrian entrance is not accessible. Compliance is readily achievable at the Construction Certificate design phase. All signage is to be design detailed to comply with the relevant requirements of Specification D3.6.

BCA Clause D3.7 – Hearing Augmentation

Hearing augmentation system must be provided where an inbuilt amplification system (other than emergency warning) is installed:

- In a room in a Class 9b building; or
- Meeting room, conference room, auditorium, or room for judicatory purposes; or
- At any ticket office, teller booth, reception area or the like, where the public is screened from the service provider.

If provided in the form of an induction loop, it must cover no less than 80% of the floor of the room served.

If in the form of receivers, it must cover no less than 95% of the floor of the room served with a minimum of two (2) in any case, but depending on number of people accommodated.

Design Detail	It is not a BCA DTS requirement to have a hearing augmentation system, unless an inbuilt amplification system (other than emergency warning) is installed. Please confirm if an inbuilt amplification system (other than emergency warning), is provided, In which case a hearing augmentation system must be provided to accord with this clause.

BCA Clause D3.8 – Tactile Ground Surface Indicators (TGSI)

Accessible buildings must have TGSI's complying with Sections 1 & 2 of AS/NZS1428.4.1-2009 to warn blind or vision impaired people of approaching stairways (other than fire-isolated), escalators, ramps (other than fire-isolated, step or kerb ramp), any overhead obstruction less than 2m above floor level and an accessway meeting a vehicular way adjacent to any pedestrian entrance to a building. Any screen or scoreboard in a Class 9b capable of displaying public announcements must be capable of supplementing any public address system, other than one used for emergency warning purposes only.

Design Detail	TGSI's complying with AS/NZS1428.4.1-2009 shall be installed in this project as necessary, but shall include to areas as follows – ▪ any overhead obstruction less than 2m above floor level. ▪ top and bottom of ramps and stairways.

BCA Clause D3.9 – Wheelchair seating spaces in Class 9b assembly buildings

Not applicable – no Class 9b parts with fixed seating proposed.

BCA Clause D3.10 – Swimming Pools

Not applicable – no swimming pools have been proposed.

BCA Clause D3.11 – Ramps

Not applicable – proposed ramps do not rise more than 3.6m, nor any landing cross-overs occur.

BCA Clause 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.

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

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.

Design Detail	All fully glazed doors, sidelights and walls forming part of the accessway must be clearly marked in accordance with AS 1428.1-2009. The markings to the main entry glass doors must be upgraded to accord with the requirements of this clause. Compliance is readily achievable during the Construction Certificate design phase.

3.3 SECTION E – SERVICES & EQUIPMENT

Part E3 – Lift Installations

BCA Clause E3.6 – Passenger Lifts

Every passenger lift must:

- be one of the types identified in Table E3.6a, subject to the limitations on use specified in the Table; and
- have accessible features in accordance with Table E3.6b; and
- not rely on a constant pressure device for its operation if the lift car is fully enclosed.

Design Detail	The existing passenger lift linking levels 3-5 forms part of the 'affected part' and is therefore required to accord with the requirements of this clause. The passenger lift connecting levels 3-5 is suitable to satisfy the 'affected part' provisions, but a certificate is required from a suitably qualified lift contractor to confirm compliance the passenger lift complies with the below – i. Handrail complying with the mandatory handrail provisions of AS1735.12, ii. Passenger protection system complying with AS1735.12,

	iii. Lighting in accordance with AS1735.12, iv. Lifts serving more than 2 Levels – ▪ Automatic audible information within the lift car to indicate the level each time the lift car stops; ▪ audible and visual indication at each lift landing to indicate the arrival of the lift car; ▪ audible information and audible indication is to be provided in a range of between 20-80dB(A) at a maximum frequency of 1500Hz; v. Emergency hands-free communication, including a button that alerts a call centre of a problem and a light to signal that the call has been received.

3.4 SECTION F – HEALTH & AMENITY

Part F2 – Sanitary & Other Facilities

BCA Clause F2.4 – Accessible Sanitary Facilities

In a building required to be accessible:

- Accessible unisex sanitary compartments must be provided as per Table F2.4(a),
- At each bank of toilets where there is one or more toilets in addition to an accessible unisex sanitary compartment at that bank of toilets, a sanitary compartment suitable for a person with an ambulant disability in accordance with AS 1428.1 must be provided for use by males and females.
- An accessible unisex sanitary compartment must contain a closet pan, washbasin, shelf or bench top and adequate disposal of sanitary towels.
- Circulation spaces, fixtures and fittings of all accessible sanitary facilities must comply with AS1428.1.
- Where two or more of each type of accessible unisex sanitary facility are provided, the number of left and right handed mirror image facilities must be provided as evenly as possible.
- An accessible unisex facility must be located so that it can be entered without crossing an area reserved for one sex.

Design Detail	At least 1x new bank of sanitary facilities are proposed to each floor of the building and satisfy the requirements of this clause. *DTS Compliance Departure 2* The Accessible sanitary facility at Level 2 is not located within the same bank as the general toilets and causes a DTS compliance departure with this clause. *Resolution option(s) 2* Resolution is readily at CC design phase by either – a. Relocating the toilet(s); *or* b. We can produce a *BCA Performance Solution* to demonstrate the suitability of the current design. Enhanced way-finding signage will be required.

4.0 CONCLUSION

This report identifies the compliance status of the Development Application architectural design with the following –

- Relevant accessibility related 'deemed-to-satisfy' (DTS) requirements of the Building Code of Australia (BCA) 2016. These provisions are generally contained within Part D3 and Clause(s) E3.6 & F2.4 of the code.
- The Disability (Access to Premises – Building) Standards 2010 (Premises Standards).

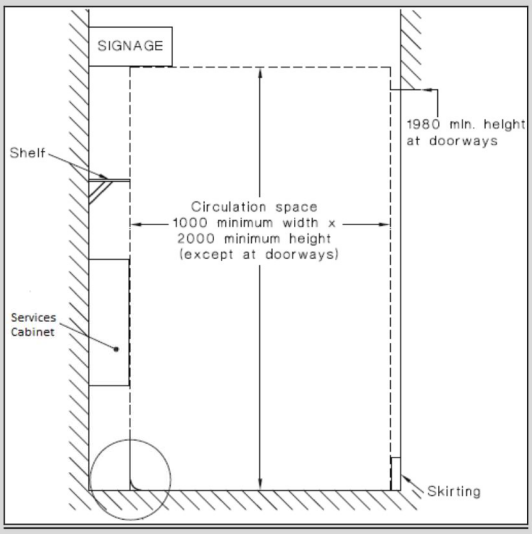
The outcome of the report highlights that the current design is readily capable of compliance with the accessibility provisions of the BCA and the Premises Standards, subject to compliance with the commentary at Part 3.0 of this report.

BCA Clause D3.1

Summary of AS1428.1-2009 Requirements for accessways

Continuous accessible path of travel –

All paths of travel shall achieve unobstructed heights and widths in accordance with cl. 6 of AS 1428.1 – see diagram below for detail.



Doorways / Doors –

(i) 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;
- door jamb and adjacent wall.

(ii) The minimum width of the area of luminance contrast shall be 50mm,

(iii) Door hardware should be generally located between 900-1100mm from the floor and be of lever type with a clearance between the handle and the door face at the centre of the handle being not less than 35mm and not more than 45mm in accordance with AS1428.1-2009,

(iv) Doors shall have a clear opening width of 850mm.

(v) Door handles and related hardware shall be of the type that allows the door to be unlocked and opened with one hand. The handle shall be such that the hand of a person who cannot grip will not slip from the handle during the operation of the latch.

(vi) 'D' type handles shall be provided on sliding doors.

(vii) Any snibs shall have a lever handle of a minimum length of 45 mm from the centre of the spindle.

(viii) For doors (other than fire doors and smoke doors) where a door closer is fitted, the force required at the door handle to operate the door shall not exceed the 20N,

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

BCA Clause D3.1

(x) The location of controls for doors and gates above a level surface shall be provided as per Clause 13.5.3.

(xi) Manual controls for power-operated doors shall be located no closer than 500 mm from an internal corner and between 1000 mm to 2000 mm from the hinged door leaf in any position or clear of a surface-mounted sliding door in the open position.

(xii) Push-button controls shall have a minimum dimension of 25 mm diameter and be proud of the surface and shall activate the door before the button becomes level with the surrounding surface.

Floor or ground surfaces on continuous accessible paths of travel and circulation spaces –

(i) 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.

(ii) 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 – *see Figure 1*
- 0 ±5mm change in level provided the edges have a beveled or rounded edge to reduce the likelihood of tripping – *see Figure 2*
- Various tolerances for raked joint pavers – *see Figure/s 3a - level surfaces, 3b - irregular surfaces & 3c - domed surfaces.*

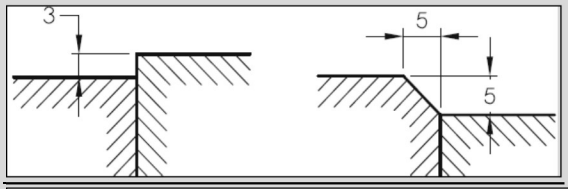


Figure 1

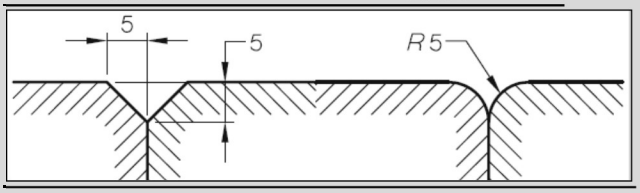


Figure 2

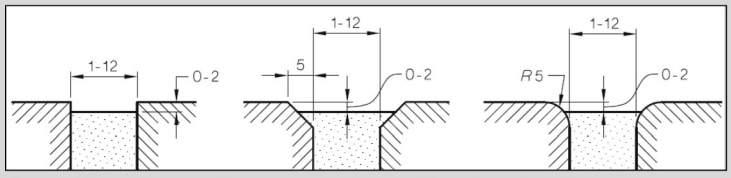


Figure 3a – For continuous paving units – level surfaces

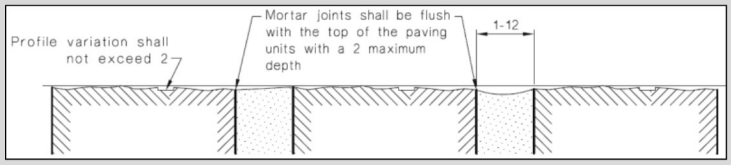


Figure 3b – For continuous paving units – irregular surfaces

BCA Clause D3.1

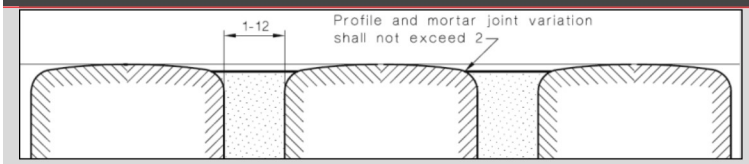


Figure 3c – For continuous paving units – domed surfaces

(iii) 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,
- At the leading edges, carpet trims and any soft flexible materials shall have a vertical face no higher than 3mm or a rounded beveled edge no higher than 5mm or above that height a gradient of 1:8 up to a total maximum height of 10mm.

(iv) 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 beveled, 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 beveled.

Switches and Controls –

(i) All new switches and controls, other than power points, shall be located not less than 900mm nor more than 1100mm above the finished floor and not less than 500mm from internal corners.

(ii) Rocker action and toggle switches shall be provided an accordance with Clause 14.2 in accessible residential sole-occupancy units.

BCA Clause D3.3

Summary of AS1428.1-2009; Clause 10 & 11 Requirements (Ramps & Stairs)
Clause 10.2 – Walkways
Walkways shall comply with the following:

- The floor or ground surface abutting the sides of the walkway shall provide a firm and level surface of a different material to that of the walkway at the same level of the walkway, follow the grade of the walkway and extend horizontally for a minimum of 600 mm unless one of the following is provided:
  - Kerb in accordance with Figure 18.
  - Kerb rail and handrail in accordance with Figure 19.
  - A wall not less than 450 mm in height.
- Landings at top and bottom and at:
  - 25m intervals or less for 1:33,
  - 15m intervals or less for 1:20,
- For walkways shallower than 1 in 33, no landings are required.

Clause 10.5 - Threshold ramps

BCA Clause D3.3

- Threshold ramps at doorways to have a max. rise of 35mm, max length of 280mm, max gradient of 1:8 and be located within 20mm of the door leaf.
- Edges of the threshold ramp shall be tapered or splayed at max 45° if not abutting a wall.

Clause 10.6 - Step ramps

- Step ramps shall have max. rise of 190mm, max. length of 1.9m, max. gradient of 1:10.
- Edges of the step ramp to have 45° splay where there is pedestrian traffic or otherwise be protected by suitable barrier such as a min. 450mm wall or kerb / kerb rail with open balustrade.
- Step ramps to have slip-resistant surfaces.

Clause 10.8 - Landings

Landings for walkways (up to 1:33) and ramps shall comply with one of the following:

- min. 1.2m if no change in direction as per Figure 25(A),
- min. 1.5m where change in direction not exceeding 90° internal corner to be truncated for min. 500mm in both directions as per Figure 25(B),
- 180° turn, landing as per Figure 25(C).
- Landings for step ramps shall be min. 1.2m in length as per Figure 22(A) and (B). Where a change in direction, the length of the step ramp landing to be min. 1.5m as per Figure 22(A). At doorways, landings as per Clause 13.3 for circulation spaces at doorways shown in Figure 25(D).
- Landings at kerb ramps shall be min. 1.2m in length, or 1.5m X 2.0m at 'T' junctions. Where a single change in direction is required, landings to be min. 1.5m X 1.5m.

Clause 11.1 - Stair construction

Stairs to be constructed as follows:

- Set back min. 0.9m from boundary,
- Where intersection is at an internal corridor, the stair to be set back as per Figure 26(A),
- Have opaque risers,
- Nosings shall not project beyond the face of the riser and the riser may be vertical of 25mm backwards splay,
- Nosing profiles to have a sharp intersection, be rounded up to 5mm radius or be chamfered up to 5mm x 5mm,
- 50mm – 75mm strip to full length of nosing, set back a max. 15mm from the front of the nosing, with a 30% min. luminance contrast. If not set back, luminance contrast to extend down the riser by max 10mm.
- TGSIs installed as per AS1428.4.1.

Clause 11.2 - Stairway handrails

Handrails to be continuous throughout the stair flight and around landings and have no obstructions 0.6m above, and as follows:

- Design & construction as per Clause 12,
- Installed both sides,
- No vertical sections and shall follow angle of the stairway nosings,

BCA Clause D3.3

- Extend at bottom of stairs one stair tread depth and min. 300mm horizontally, (300mm extension not required if handrail is continuous,
- Dimensions of heights of handrails taken vertically from the nosing or landing to the top of the handrail.

Clause 12 - Handrails
Design and construction to comply with:

- Handrails and balustrades shall not encroach into required circulation,
- Circular or elliptical cross-section, not less than 30mm or more than 50mm for more than 270°. Elliptical handrails to have greater horizontal dimensions,
- Exposed edges or corners have min. radius of 5mm,
- Top of handrail to be between 865mm and 1.0m above nosing or landing,
- Height to be constant throughout,
- If balustrade is required at a height greater than the handrail, both shall be provided,
- Handrails to be securely fixed and rigid with ends turned through a total of 180°, or to the ground, or returned fully to end post or wall face (Figures 26 C and D),
- Min. 50mm clearance to adjacent wall or other obstruction, for a height of 600mm,
- Handrails to have no obstructions to the passage of a hand along the rail,
- Inside handrail at landings to always be continuous as per Figure 28(a).

BCA Clause F2.4 –

Summary of AS1428.1-2009 requirements for Accessible & Ambulant Sanitary Facilities

Water Taps – Must have:

- Taps shall have lever handles, sensor plates or other similar control,
- Lever handles to be min. 50mm clear from adjacent surface,
- Where hot water is provided, the water to be delivered through the mixing spout.

WC pan clearances

- WC pan clearance including set-out, seat height and seat width as per Figure 38 of AS1428.1.

Seat – As follows:

- full round type with minimal contours,
- be securely fixed when in use,
- seat fixings that create lateral stability,
- load rated to 150kgs,
- min. luminance contrast of 30%.

Backrest – As follows:

- be capable of withstanding 1100 N,
- height to the lower edge of backrest to the top of the WC pan of 120mm to 150mm,
- vertical height of 150mm-200mm and a width of 350mm and 400mm,
- front edge of the centre of the backrest to be at an angle of 95° to 100°.

Flushing control

- Flushing controls shall be user activated, either hand operated or automatic. Hand-operated controls to comply with Figure 40, or on the centre-line of the toilet within the vertical limit zone. Controls within this zone shall not be within the area required for grabrails.

- Controls shall be proud of the surface and activate the flush before being level with the surrounding surface.

Toilet paper dispenser
- Toilet paper dispenser to be located within zone specified in Figure 41. Dispenser shall not encroach on required grabrail clearances.

Grabrails
- Concealed, high level cisterns or flush valves require a continuous grabrail across the rear wall and the side wall closest to the pan as per Figure 42.
- Low-level non-concealed cistern or flush valves require the grabrail to terminate each side of the cistern as per Figure 42.

Circulation space – Shall be as per Figure 43 of AS1428.1-2009, except for the following intrusions:
- Toilet paper dispenser,
- Grabrails,
- Washbasins with 100mm intrusion,
- Hand dryers and towel dispensers,
- Soap dispensers,
- Shelves,
- Wall cabinets with 150mm intrusion, mounted between 0.9m and 1.25m,
- Clothes hanging devices,
- Portable sanitary disposal units (Figure 43),
- Other wall mounted fixtures with 150mm intrusion, mounted between 0.9m and 1.25m.
- The overlapping of circulation space shall be in accordance with Clause 15.6.

Baby change tables
- Where installed, baby change tables shall not encroach into the required circulation space when in the folded position and have a max height of 820mm with clearance underneath of min. 720mm when open.

WC doors
- To be either hinged or sliding,
- Outward-opening doors shall have a mechanism to hold in the closed position without the use of a latch,
- Doors provided with an in-use indicator and a bolt or catch. If fitted with a snib, the snib handle is to be min. length of 45mm from the centre of the spindle.
- Latch mechanism are to be openable from the outside in the case of an emergency.
- Force required as per Clause 13.5.2(e),
- Door handles and hardware as per Clause 13.5.

Washbasins for unisex accessible sanitary facilities
- A hand-washing facility shall be provided inside the toilet cubicle

Washbasins – As follows:
- Shall be located inside the cubicle,
- Washbasin outside pan circulation,
- Water taps as per Clause 15.2.1,
- Exposed hot water supply pipes to be insulated or located so as not a hazard,
- Projection of washbasins from wall and taps, bowl and drain outlet as per Figures 44 (A) and (B),
- Water supply pipes and waste outlets not to encroach on required clear space under basin.
- Each washbasin fixture to have unobstructed circulation space as per Figure 46, or Figure 45 for SOU's.

Mirrors
- Mirror to be located above or adjacent to washbasin.
- Where provided, a vertical mirror with a reflective surface not less than 350mm wide to extend from a height not less than 0.6m to not more than 1.85m.
- In an accessible residential unit, the mirror to be centred over the washbasin.

Shelves – To be provided adjacent to washbasin, as follows:

- A vanity top at a height of 800mm-830mm and min. width of 1200mm and depth of 300mm-400mm without encroaching circulation space,
- A separate fixture, within any circulation spaces at a height of 0.9m-1.0m, and external to all circulation space 0.79m-1.0m.

Soap dispensers, towel dispenser and similar fittings

- Soap and towel dispensers and hand dryers shall be operable by one hand and installed so the operative component or outlet between 0.9m and 1.1m and no closer than 0.5m from an internal corner.

Clothes-hanging devices

- A clothes-hanging device shall be installed 1.2m to 1.35m high and not less than 0.5m from an internal corner.

Sanitary disposal unit

- Where provided, sanitary disposal units to be as per Figure 43 for portable units or 0.5m from the pan for recessed units.

Switches and general purpose outlets

- Where provided near the washbasin, switches and GPOs to be located as per Clause 14 and as close to the shelf as possible.

Showers

- Shower recesses and circulation space to a height not less than 0.9m as per Figure 47. Grabrails, shower hose fittings, taps, soap holder, shelf and seat are the only fixtures permitted in these spaces.

Circulation spaces in accessible sanitary facilities

- Circulation spaces in accessible sanitary facilities shall be in accordance with Clause 15.2.8 and Figures 43-47 and 50.
- Circulation spaces, including door circulation space, may be overlapped.
- Fixtures shall not encroach circulation space except:
  a. Washbasin in WC circulation as per Figure 43,
  b. Washbasin in shower circulation as per Figure 50,
  c. Washbasin in door circulation as per Figure 51(A) and 51(B).
- Clearances beneath washbasin as per Clause 15.3.

Summary of AS1428.1-2009 requirements for Ambulant Sanitary Facilities

General

- Ambulant sanitary facilities shall be in accordance with Figures 53(A) and 53(B).

Grabrails

- Grabrails shall be installed in accordance with Clause 17 and Figure 53(A).

Doors

- Doors to sanitary compartments for people with ambulant disabilities shall have openings with a minimum clear width of 700 mm, and shall comply with Figure 53(B).
- Doors shall be provided with an in-use indicator and a bolt or catch. Where a snib catch is used, the snib handle shall have a minimum length of 45 mm from the centre of the spindle. In an emergency, the latch mechanism shall be openable from the outside.

Coat hook

- A coat hook shall be provided within the sanitary compartment and at a height between 1350 mm to 1500 mm from the floor.