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Innovation & expertise in building regulations

## **ACCESSIBILITY REVIEW DEVELOPMENT APPLICATION STAGE**

**28-32 SOMERSET STREET, KINGSWOOD**

DATE ► 15 June 2016

PREPARED FOR ► PURE PROJECTS

REPORT NUMBER ► A2361 – R3.0

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REVISION STATUS				
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### COMMERCIAL IN CONFIDENCE

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## EXECUTIVE SUMMARY & RECOMMENDATIONS

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This report provides an accessibility design assessment for the construction of a proposed mixed use multi-level building comprising of a commercial space on ground floor, 54x residential apartments and associated carparking located at 28-32 Somerset St, Kingswood.

The purpose of this report is to identify the compliance status of the design with the following:

- relevant accessibility related 'deemed-to-satisfy' requirements of the Building Code of Australia 2016 (BCA) (as are contained within Part D3 and Clause E3.6 & F2.4 of the code).
- AS4299-1995 (Adaptable Housing) – Essential Class C requirements

A detailed 'Technical Review and Commentary' is provided at Part 2.0 & Part 3.0 of this report, which includes all appropriate technical assessment results & commentary.

## 1.0 INTRODUCTION

This report provides an accessibility design assessment for the construction of a proposed mixed use multi-level building comprising of a (potential) commercial space on ground floor, 54x residential apartments and associated carparking located at 28-32 Somerset St, Kingswood.

The purpose of this report is to identify the compliance status of the design with the following:

- relevant accessibility related 'deemed-to-satisfy' requirements of the Building Code of Australia 2016 (BCA) (as are contained within Part D3 and Clause E3.6 & F2.4 of the code.
- AS4299-1995 (Adaptable Housing) – Essential Class C requirements

### 1.1 Basis of Report

This assessment is based upon –

This report is based on a desktop assessment of the proposed plans, with specific reference to the following:

- Architectural plans prepared by Plus Architecture – Project 20072, Drawing Numbers:

Drawing Number	Revision	Dated	Drawing Title
DA0002	01	03/06/16	Site Plan
DA0020	01	03/06/16	Survey Plan
DA0098	01	03/06/16	Basement 02 Plan
DA0099	01	03/06/16	Basement 01 Plan
DA0100	01	03/06/16	Ground Floor Plan
DA0101	01	03/06/16	Level 01 Plan
DA0102	01	03/06/16	Level 02 Plan
DA0103	01	03/06/16	Level 03 Plan
DA0104	01	03/06/16	Level 04 Plan
DA0105	01	03/06/16	Level 05 Plan
DA0106	01	03/06/16	Roof Plan
DA0200	01	03/06/16	North Elevation
DA0201	01	03/06/16	West Elevation
DA0202	01	03/06/16	South Elevation
DA0203	01	03/06/16	East Elevation
DA0220	01	03/06/16	Section A-A
DA0221	01	03/06/16	Section B-B
DA0222	01	03/06/16	Section C-C
DA0223	01	03/06/16	Section D-D
DA0240	01	03/06/16	Adaptable Units

1. The Building Code of Australia 2016 (BCA) prepared by the Australian Building Codes Board.
2. The Guide to the BCA 2016, prepared by the Australian Building Codes Board.
3. The Disability (Access to Premises – Building) Standards 2010.
4. Australian Standards AS1428.1-2009 - Design for Access and Mobility - Part 1: General requirements for access - New building work.
5. Australian Standards AS1428.4.1-2009 - Design for Access and Mobility - Part 4.1: Means to assist the orientation of people with vision impairment – Tactile ground surface indicators.
6. Australian Standard AS2890.6-2009 Parking facilities - Part 6: Off-street parking for people with disabilities.
7. Australian Standard AS4299-1995 - Adaptable Housing.
8. Penrith Development Control Plan 2014, Part 2.5.20.

## 1.2 Limitations of the Report

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This report does not assess / include the following –

- Any parts of the BCA not directly referenced in this report.
- Any assessment associated with the future retail/commercial fitout.
- Standards not directly referenced in this report.
- Disability Discrimination Act 1992 (*DDA focuses on results and does not offer prescriptive compliance options*).
- Construction Certificate documentation phase review.
- Work Health & Safety considerations.
- Work Cover Authority requirements.
- Federal / Local / State planning policies and/or guidelines.
- This report is not a Part 4A compliance certificate under the Environmental Planning & Assessment Act 1979 or Regulation 2000.
- Does not provide concessions, alternative solutions or exemptions from the requirements of the BCA, other than any directly identified in the Executive Summary of this report.

## 1.3 BCA Assessment Data

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Our understanding of the Building Code of Australia (2016) classification(s) in relation to the subject building is as follows (TBC confirmed by BCA Consultant) –

<b>BCA Building Classifications:</b>	Class 2	Residential
	Class 5	Commercial
	Class 7a	Carpark

## 2.0 TECHNICAL REVIEW ASSESSMENT & COMMENTARY

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

The table identifies compliance assessment outcomes into one of four (4) categories, as follows –

- Complies – BCA design compliance is achieved.
- Does not comply – A BCA compliance departure requires rectification. Resolution options are provided.
- N/A or Informational – Either not applicable or not directly relevant to the project. Detail provided for information purposes only. No action required.
- Design Detail – A detailed commentary is provided within the report. Such instances should not be considered deficiencies, but matters for consideration by the design team / assessment authority at relevant stages of design.

BCA Interpretation Note(s) –

- (i) Readily moveable furniture has been treated as indicative only. The person/s responsible for furnishing the building (parts) should ensure their furnishing layout/s do not cause AS1428.1 circulation deficiencies.
- (ii) The cleaners toilet in basement 01 has been assessed by this office as not being required to be an accessible sanitary facility.

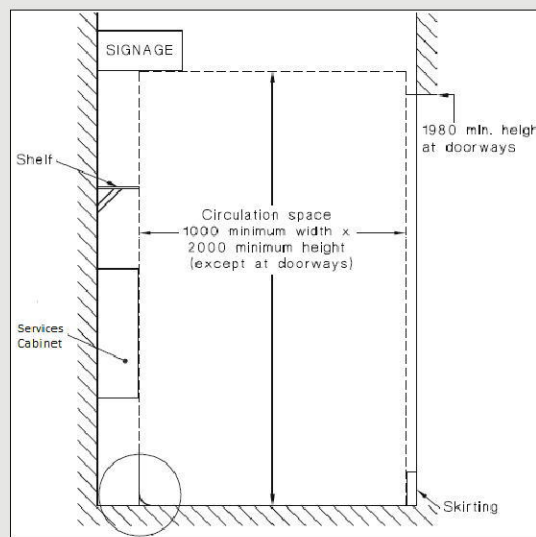
BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA OR INFORMATIONAL	DESIGN DETAIL	COMMENTS
<b>SECTION D</b>					
<b>ACCESS &amp; EGRESS</b>					
<b>PART D3 - ACCESS FOR PEOPLE WITH DISABILITIES</b>					
<p><u>D3.1 - General building access requirements</u></p> <p>Buildings and parts of buildings must be accessible as required by Table D3.1, as follows:</p> <p><u>Class 2</u></p> <p>Access is required from a pedestrian entrance required to be accessible to at least 1 floor containing sole-occupancy units (SOU), to the entrance doorway of each SOU on that level and to/ within any area for use in common by the residents.</p> <p>Where a passenger lift is installed, access is required to the entrance doorway of each SOU, and to/ within spaces for use in use in common by the residents; located on levels served by the lift.</p> <p><u>AS4299 - Adaptable Units</u> (not BCA related)</p> <p>See separate AS4299 (Adaptable Housing) requirements as listed in Section 3.0 of this report.</p> <p><u>Class 2 – Common Areas</u></p> <p>From a pedestrian entrance required to be accessible to the entrance doorway of each SOU and to and within rooms or spaces for</p>				X	<p>Access is required to and throughout the building in accordance with AS1428.1-2009, to the following extent –</p> <ul style="list-style-type: none"> <li>Class 5 (commercial) parts.</li> <li>All of the common area associated with class 2 (residential) units.</li> <li>Carpark – see Clause D3.5.</li> </ul> <p>The door to the accessible sanitary facility to the commercial tenancy on the ground floor has not been provided with an 850mm clear opening width. Compliance is readily achievable at the Construction Certificate design phase, and we highlight the need at to provide a door schedule which must specify the doorways on accessible paths achieving an 850mm clear opening width.</p> <p><u>Slip-resistant floor surface/s</u></p> <p><i>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</i></p>

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	N/A OR INFORMATIONAL	DESIGN DETAIL	COMMENTS
<p>use in common by residents on levels served by the lift.</p> <p><b>Class 5</b> Access must be provided to and within all areas normally used by the occupants.</p> <p><b>Class 7a</b> Access must be provided to and within the carpark if it contains "accessible carparking spaces".</p>					<p><i>advice from an independent specialist slip safety consultant.</i></p> <p>The following summary of AS1428.1-2009 requirements for accessways is provided to assist the project team during detailed design &amp;/or construction.</p>

**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 –

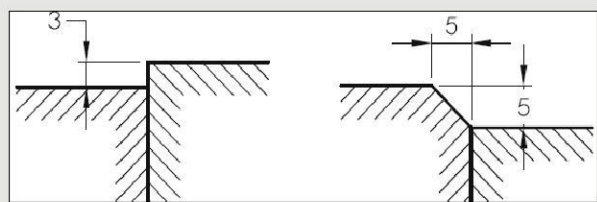
- (i) All doorways shall have a minimum luminance contrast of 30% between –
  - door leaf and door jamb;
  - door leaf and adjacent wall;
  - architrave and wall;
  - door leaf and architrave;
  - door jamb and adjacent wall.
- (ii) The minimum width of the area of luminance contrast shall be 50mm,
- (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.

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA OR INFORMATIONAL	DESIGN DETAIL	COMMENTS
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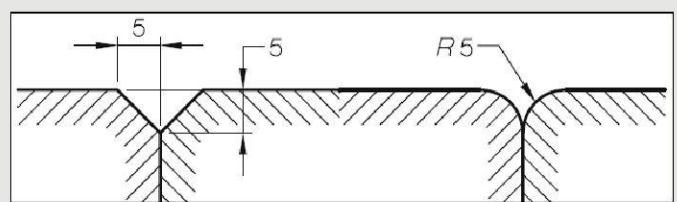
- (viii) For doors (other than fire doors and smoke doors) where a door closer is fitted, the force required at the door handle to operate the door shall not exceed the 20N,
- (ix) Where an outward opening door is not self-closing, a horizontal handrail or pull bar shall be fixed on the closing face of a side-hung door,
- (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 –

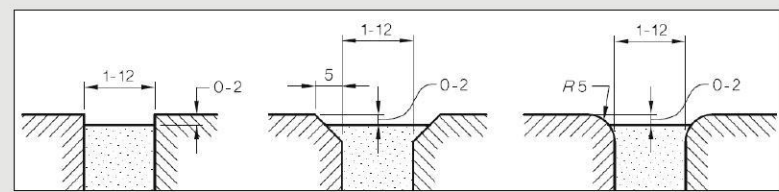
- (i) A continuous accessible path of travel and any circulation spaces shall have a slip-resistant surface. The texture of the surface shall be traversable by people who use a wheelchair and those with ambulant or sensory disability.
- (ii) Abutment of surfaces shall have a smooth transition. Design 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.



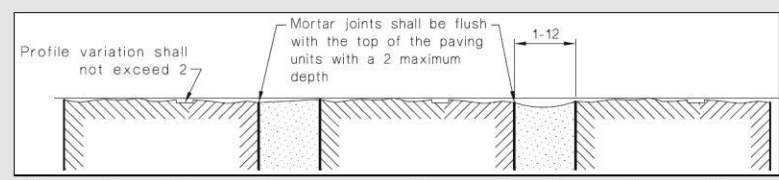
**Figure 1**



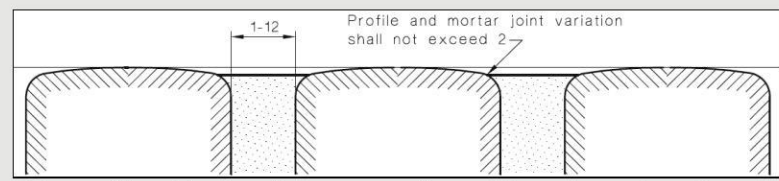
**Figure 2**



**Figure 3a – For continuous paving units – level surfaces**



**Figure 3b – For continuous paving units – irregular surfaces**



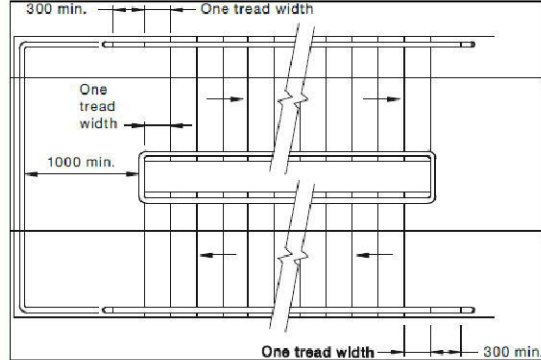
**Figure 3c – For continuous paving units – domed surfaces**





BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA OR INFORMATIONAL	DESIGN DETAIL	COMMENTS
<p>(iii) Where carpets or any soft flexible materials are used on the ground or floor surface –</p> <ul style="list-style-type: none"> <li>▪ The pile height or pile thickness, shall not exceed 11mm and the carpet backing thickness shall not exceed 4mm,</li> <li>▪ 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,</li> <li>▪ 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.</li> </ul> <p>(iv) Matting recessed within an accessible path of travel –</p> <ul style="list-style-type: none"> <li>▪ 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</li> <li>▪ 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.</li> </ul> <p><u>Switches and Controls –</u></p> <p>(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.</p> <p>(ii) Rocker action and toggle switches shall be provided an accordance with Clause 14.2 in accessible residential sole-occupancy units.</p>					
<p><u>D3.2 - Access to Buildings</u></p> <p>An accessway must be provided to a building required to be accessible:</p> <ul style="list-style-type: none"> <li>▪ From the main points of pedestrian entry at the allotment boundary; and</li> <li>▪ From another accessible building connected by a pedestrian link; and</li> <li>▪ From any required accessible carparking space on the allotment.</li> </ul> <p>An accessway must be provided through the principal pedestrian entrance, and:</p> <ul style="list-style-type: none"> <li>▪ through not less than 50% of all pedestrian entrances including the principal pedestrian entrance; and</li> <li>▪ in a building with a floor area more than 500m<sup>2</sup>, a pedestrian entrance which is not accessible must not be located more than 50m from an accessible pedestrian entrance.</li> <li>▪ Where a doorway on an accessway has multiple leaves, (except an automatic opening door) one of those leaves must have a clear opening width of not less than 850 mm in accordance with AS 1428.1.</li> </ul>				X	<p>A main pedestrian entry is proposed from Somerset Street and satisfied the required entry number &amp; location requirements of this clause.</p> <p>Compliance is readily achievable, however, detailed design, including path gradients / levels and the like will be necessary at the Construction Certificate design phase.</p> <p>We refer to the AS1428.1-2009 summary at Clause D3.1 to assist the design team with detailed design and/or construction.</p>
<p><u>D3.3 - Parts of buildings to be accessible</u></p> <p>In a building required to be accessible:</p> <ul style="list-style-type: none"> <li>▪ every ramp &amp; walkway (except fire-</li> </ul>				X	<p>All stairs &amp; ramps (other than required fire-isolated stairs) are to be design detailed to comply with the relevant requirements of Clause 10 and 11 of AS1428.1-2009.</p>



BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA OR INFORMATIONAL	DESIGN DETAIL	COMMENTS
<p><i>isolated</i>) must comply with Clause 10 of AS1428.1-2009;</p> <ul style="list-style-type: none"> <li>▪ every stairway (<i>except fire-isolated</i> must comply with Clause 11 of AS1428.1-2009;</li> <li>▪ All fire-isolated stairways are required to comply with Clause 11.1(f) and (g) of AS 1428.1-2009.</li> <li>▪ accessways must have passing spaces complying with AS1428.1 at max 20m intervals where a direct line of sight is not available; and</li> <li>▪ turning spaces complying with AS1428.1 within 2m of the end of accessways where it is not possible to continue travelling along the accessway, and at max. 20m intervals along the accessway.</li> <li>▪ the carpet pile height or pile thickness dimension, carpet backing thickness dimension and their combined dimension shall be 11mm, 4mm and 15 mm respectively.</li> </ul>					<p>All fire-isolated stairways are required to comply with Clause 11.1(f) and (g) of AS 1428.1-2009.</p> <p><b>Ramps</b> The main pedestrian entry ramp at the front of the building is readily capable of compliance and will require design detail (i.e. handrails, TGSI, levels etc.) at the Construction Certificate design phase.</p> <p>The ramp within the main corridor on the ground floor through the fire isolated stair and to the communal balcony to the east side of the building is required to have:-</p> <ul style="list-style-type: none"> <li>• handrail extensions in accordance with Clause 10.3 of AS 1428.1-2009. If handrail extensions are provided this will encroach upon the landing turning space.</li> </ul> <p><b>The above DTS departure within the current design can be addressed via an alternative solution from an access consultant at the Construction Certificate design phase.</b></p> <p><b>Stairs</b> The stair serving basement level adjacent to the lift is afforded with one-tread offsets at intermediate landings and can readily accord with AS1428.1-2009.</p> <p>However, the fire stair to the south serving the basement level is not designed to incorporate one-tread offsets at intermediate landings, see below AS1428.1 extract (Figure 28):</p>  <p><b>Resolution</b> Resolution can be readily achieved at Construction Certificate design phase by,</p>



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					<p>either –</p> <ul style="list-style-type: none"> <li>• Upgrade the stair design/s to accord with Clause 12 of AS1428.1-2009; or</li> <li>• Pursue a <i>BCA Alternative Solution</i> to demonstrate the suitability of the current design (i.e. without one-tread offset).</li> </ul> <p>Compliance is readily achievable at the Construction Certificate design phase.</p> <p><b>Passing &amp; Turning Spaces</b> Suitable passing and turning spaces are required in accordance with AS1428.1-2009.</p> <p>The following Clause 10 &amp; Clause 11 summary of AS1428.1-2009 is provided to assist the project team.</p>

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 10.3 – Ramps

Ramps shall comply with the following:

- Max 1:14 gradient for ramps exceeding 1.9m,
- Gradient constant throughout with max. 3% tolerance and max 1:14 gradient,
- Landings at top and bottom and at:
  - 9m intervals or less for 1:14,
  - 15m intervals or less for 1:20,
- Change in direction to have 90° angle of approach as per Figure 13,
- Handrails on each side as per Clause 12,
- Set back min. 900mm from boundary,
- Intersections at internal corridors to be set back min. 0.4m,
- Handrails to extend min. 300mm horizontally past transition point at top and bottom, except where inner handrail is continuous at intermediate landings,
- Kerbs and kerb rails on both sides at min. height of 65mm, not be between 75mm and 150mm high and have no gaps or slots greater than 20mm within the range of 75mm to 150mm,
- Kerbs and kerb rails to be located so that ramp-side face is either flush or no greater than 100mm away from handrail (Figure 19), min. 150mm high if handrails has vertical posts (Figure 19 a, b, c), and be min.



BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	N/A OR INFORMATIONAL	DESIGN DETAIL	COMMENTS
<p>200mm between 65mm-75mm kerb to support posts (Figure 19 d).</p> <p><u>Clause 10.5 - Threshold ramps</u></p> <ul style="list-style-type: none"><li>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.</li><li>Edges of the threshold ramp shall be tapered or splayed at max 45° if not abutting a wall.</li></ul> <p><u>Clause 10.6 - Step ramps</u></p> <ul style="list-style-type: none"><li>Step ramps shall have max. rise of 190mm, max. length of 1.9m, max. gradient of 1:10.</li><li>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.</li><li>Step ramps to have slip-resistant surfaces.</li></ul> <p><u>Clause 10.8 - Landings</u></p> <p>Landings for walkways (up to 1:33) and ramps shall comply with one of the following:</p> <ul style="list-style-type: none"><li>min. 1.2m if no change in direction as per Figure 25(A),</li><li>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),</li><li>180° turn, landing as per Figure 25(C).</li><li>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).</li><li>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.</li></ul> <p><u>Clause 11.1 - Stair construction</u></p> <p>Stairs to be constructed as follows:</p> <ul style="list-style-type: none"><li>Set back min. 0.9m from boundary,</li><li>Where intersection is at an internal corridor, the stair to be set back as per Figure 26(A),</li><li>Have opaque risers,</li><li>Nosings shall not project beyond the face of the riser and the riser may be vertical of 25mm backwards splay,</li><li>Nosing profiles to have a sharp intersection, be rounded up to 5mm radius or be chamfered up to 5mm x 5mm,</li><li>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.</li><li>TGSIs installed as per AS1428.4.1.</li></ul> <p><u>Clause 11.2 - Stairway handrails</u></p> <p>Handrails to be continuous throughout the stair flight and around landings and have no obstructions 0.6m above, and as follows:</p> <ul style="list-style-type: none"><li>Design &amp; construction as per Clause 12,</li><li>Installed both sides,</li><li>No vertical sections and shall follow angle of the stairway nosings,</li><li>Extend at bottom of stairs one stair tread depth and min. 300mm horizontally, (300mm extension not required if handrail is continuous,</li><li>Dimensions of heights of handrails taken vertically from the nosing or landing to the top of the handrail.</li></ul> <p><u>Clause 12 - Handrails</u></p>					



BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA OR INFORMATIONAL	DESIGN DETAIL	COMMENTS
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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).

**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 accessible.

X

Exemptions are to be reviewed on a case by case basis and when detailed design is achieved. Although, we do highlight that the following parts of the building are generally capable of being offered access exemptions (not exhaustive):

- Plant & equipment room(s).
- Store rooms.
- Commercial & residential bin area.

**D3.5 - Accessible carparking**

Accessible carparking spaces complying with AS2890.6-2009 must be provided in accordance with Table D3.5 in a Class 7a building required to be accessible and on the same allotment as a building required to be accessible.

X

Accessible carspaces have been designated on plan for both commercial & residential and satisfies the requirements of this clause.

The accessible car parking spaces have been provided in location and size to comply with the requirements of AS2890.6-2009.

Refer Part 3.0 of this report for details relating to AS4299 adaptable unit carparking requirements.

An accessible path of travel is required from all accessible/adaptable carspaces to –

- Passenger lift(s), and
- Storage units.

Compliance is readily achievable and can be demonstrated at Construction Certificate design phase.

The following summary of the requirements of AS2890.6 are provided to assist the design team during detailed design &/or construction.

**Summary of AS2890.6-2009**

**Clause 2.3 – Pavement slope & surface**

- Accessible parking space and shared zones are to have a firm plane surface with a fall not exceeding 1:40



BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA OR INFORMATIONAL	DESIGN DETAIL	COMMENTS
<p>in any direction (1:33 if the surface is a bituminous seal and the parking space is out of doors).</p> <ul style="list-style-type: none"> <li>These areas shall have a slip-resistant surface.</li> </ul> <p><u>Clause 2.4 – Headroom</u></p> <ul style="list-style-type: none"> <li>The path of vehicular travel from the car park entrance to all accessible parking spaces and from those spaces to the car park exit shall have a minimum headroom of 2,200 mm.</li> <li>The headroom above each dedicated space and adjacent shared area, measured from the level of the dedicated space shall be a minimum of 2,500 mm. For an angle parking space the headroom of the front of the space and its adjacent shared area may be reduced to lie within the profile shown in Figure 2.7.</li> </ul> <p><u>Clause 3.1 – Space identification</u></p> <p>Each dedicated space shall be identified by means of a white symbol of access in accordance with AS 1428.1 between 800 mm and 1,000 mm high placed on a blue rectangle with no side more than 1,200 mm, placed as a pavement marking in the centre of the space between 500 mm and 600 mm from its entry point as illustrated in Figure 3.1.</p> <p><u>Clause 3.2 – Space delineation</u></p> <ul style="list-style-type: none"> <li>Pavement markings specified in Items (a) and (b) of this Clause shall be yellow and shall have a slip resistant surface. Raised pavement markers shall not be used for space delineation.</li> <li>Pavement markings shall be provided as follows:               <ol style="list-style-type: none"> <li>Dedicated parking spaces shall be outlined with unbroken lines 80 to 100 mm wide on all sides excepting any side delineated by a kerb, barrier or wall.</li> <li>Shared areas shall be marked as follows:                   <ol style="list-style-type: none"> <li>Walkways within or partly within a shared area shall be marked with unbroken longitudinal lines on both sides of the walkway excepting any side delineated by a kerb, barrier or wall.</li> <li>Other vacant non-trafficked areas, which may be intentionally or unintentionally obstructed (e.g. by unintended parking), shall be outlined with unbroken lines 80 to 100 mm wide on all sides excepting any side delineated by a kerb, barrier or wall, and marked with diagonal stripes 150 to 200 mm wide with spaces 200 mm to 300 mm between stripes. The stripes shall be at an angle of 45 ±10 degrees to the side of the space.</li> <li>No shared area markings shall be placed in trafficked areas.</li> </ol> </li> </ol> </li> </ul>					
<p><u>D3.6- Signage</u></p> <p>Accessible buildings must have signage to comply with AS1428.1-2009 and as follows –</p> <ul style="list-style-type: none"> <li>braille and tactile signage incorporating the international symbol of access or deafness, must identify each sanitary facility and space with hearing augmentation system; and</li> <li>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;</li> <li>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;</li> <li>signage in accordance with AS1428.1 must be provided for accessible unisex sanitary</li> </ul>				X	<p>Signage shall be installed in this project as necessary, but shall include as a minimum:</p> <ul style="list-style-type: none"> <li>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, as includes braille and tactile signage;</li> <li>signage in accordance with AS1428.1 must be provided for accessible unisex sanitary facilities to identify left or right handed use;</li> <li>directional signage where a bank of sanitary facilities are not provided with an accessible sanitary facility.</li> <li>Signage for ambulant facilities is to be provided.</li> </ul> <p>All signage is to be design detailed to comply</p>



BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA OR INFORMATIONAL	DESIGN DETAIL	COMMENTS
<p>facilities to identify left or right handed use;</p> <ul style="list-style-type: none"> <li>▪ signage to ambulant accessible facility must be on the door of the facility;</li> <li>▪ directional signage where a pedestrian entrance is not accessible,</li> <li>▪ directional signage where a bank of sanitary facilities are not provided with an accessible sanitary facility.</li> </ul>					<p>with the relevant requirements of Specification D3.6. In this regard, the following Specification D3.6 summary is provided to assist the project team.</p>

Summary of Specification D3.6; Braille and tactile signs

Part 2 – Location of braille and tactile signs

Signage must be designed and installed as follows:

- Braille and tactile components located not less than 1.2m or greater than 1.6m;
- Single line signs to have tactile characters not less than 1.25m or greater than 1.35m;
- Signs identifying room features or facilities located on wall on the latch side of the door with edge of sign 50mm to 300mm from the architrave (or on the door itself if not possible to have adjacent).
- Signs identifying a door required by E4.5 to be provided with an exit sign, must be located on the side that faces a person seeking egress, and on the wall on the latch side of the door with the leading edge of the sign located between 50mm and 300mm from the architrave (or on the door itself if not possible adjacent).

Part 3 – Braille and tactile sign specification

- Tactile characters to be raised or embossed to a height between 1mm and 1.5mm;
- Sentence case must be used, with 15mm to 50mm high characters for capitals and 50% high for the lower case;
- Tactile characters, symbols and the entire sign / frame to have rounded edges;
- The entire sign including characters, background, negative space or fill of signs to be matt or low gloss finish;
- Min. letter spacing to be 2mm;
- Min. word spacing to be 10mm;
- Thickness of letter strokes between 2mm and 7mm and of Arial typeface;
- Tactile text to be left justified (excluding single words).

Part 4 – Luminance contrast

- Background, negative space and fill to be min. 30% luminance contrast to the mounted surface,
- Tactile characters icons & symbols to be min 30% luminance contrast to the background or mount surface,
- Luminance contrasts must be met under the lighting conditions of its surrounds.

Part 5 – Lighting

Braille and tactile signs must be illuminated to ensure luminance contrast requirements are met at all times during which the sign is required to be read.

Part 6 – Braille

- Grade 1 braille (uncontracted) as per Australian Braille Authority,
- Raised and domed, and left justified,
- Located 8mm below bottom line of text,
- Solid arrow, if arrow provided,
- On signs with multiple lines, semicircular braille locator at the left margin must be horizontally aligned with the first line of braille text.



BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA OR INFORMATIONAL	DESIGN DETAIL	COMMENTS
<u>D3.7 - Hearing augmentation</u>				X	Not applicable
<u>D3.8 - Tactile ground surface indicators (TGSI)</u> 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.				X	TGSI's are to be provided to – <ul style="list-style-type: none"> <li>▪ any overhead obstruction less than 2m above floor level.</li> <li>▪ top and bottom of all stairways and ramps (except fire-isolated stairways).</li> <li>▪ where an accessway meets a vehicular way adjacent to any pedestrian entrance to a building</li> </ul>
<u>D3.9 - Wheelchair seating spaces in Class 9b assembly buildings</u>				X	N/A – Nil seating proposed.
<u>D3.10 - Swimming pools</u>				X	N/A – No swimming pool is proposed
<u>D3.11 – Ramps</u> On an accessway; a series of connected ramps must not have a combined vertical rise of more than 3.6 m; and a landing for a step ramp must not overlap a landing for another step ramp or ramp.	X				The proposed ramps do not rise more than 3.6m nor do landing cross-overs occur.  Compliance readily exists.
<u>D3.12 - Glazing on an accessway</u> 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.				X	Any such glazing on an accessway must be clearly marked in accordance with AS 1428.1-2009.
<b>SECTION E SERVICES AND EQUIPMENT</b>					
<b>PART E3 LIFT INSTALLATIONS</b>					
<u>E3.6 - Passenger lifts</u> Every passenger lift must:				X	The proposed passenger lift shall have the following features –





BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA OR INFORMATIONAL	DESIGN DETAIL	COMMENTS
<ul style="list-style-type: none"> <li>• be one of the types identified in Table E3.6a, subject to the limitations on use specified in the Table; and</li> <li>• have accessible features in accordance with Table E3.6b; and</li> <li>• not rely on a constant pressure device for its operation if the lift car is fully enclosed.</li> </ul>					<p>(i) Handrail complying with the mandatory handrail provisions of AS1735.12,</p> <p>(ii) Lift floor dimensions not less than 1,400mm x 1,600mm as the lift vertical travel is more than 12m,</p> <p>(iii) Minimum clear door opening complying with AS1735.12,</p> <p>(iv) Passenger protection system complying with AS1735.12,</p> <p>(v) Lift landing doors at the upper landing,</p> <p>(vi) Lift car and landing control buttons complying with AS1735.12,</p> <p>(vii) Lighting in accordance with AS1735.12,</p> <p>(viii) Lifts serving more than 2 Levels –</p> <ul style="list-style-type: none"> <li>▪ Automatic audible information within the lift car to indicate the level each time the lift car stops;</li> <li>▪ audible and visual indication at each lift landing to indicate the arrival of the lift car;</li> <li>▪ audible information and audible indication is to be provided in a range of between 20-80dB(A) at a maximum frequency of 1500Hz;</li> </ul> <p>(ix) 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.</p> <p>Consideration should be given to lift control buttons and the like (no less than 500mm from an internal corner).</p> <p>The lift shall be detail designed to ensure compliance with the above and AS1428.1.</p> <p>Details of the proposed lift is to form part of the CC documentation phase.</p> <p>A design compliance certificate should be obtained from the lift designer to confirm compliance with the relevant provisions of the BCA and Australian Standards. Consideration should be given to lift control buttons and the like.</p>

**SECTION F  
HEALTH AND AMENITY**



BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA OR INFORMATIONAL	DESIGN DETAIL	COMMENTS
<b>PART F2 SANITARY AND OTHER FACILITIES</b>					
<p><u>F2.4 - Accessible sanitary facilities</u></p> <p>In a building required to be accessible:</p> <ul style="list-style-type: none"> <li>▪ Accessible unisex sanitary compartments must be provided as per Table F2.4(a),</li> <li>▪ Accessible unisex showers must be provided as per Table F2.4(b),</li> <li>▪ 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.</li> <li>▪ An accessible unisex sanitary compartment must contain a closet pan, washbasin, shelf or bench top and adequate disposal of sanitary towels.</li> <li>▪ Circulation spaces, fixtures and fittings of all accessible sanitary facilities must comply with AS1428.1.</li> <li>▪ 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.</li> </ul> <p>An accessible unisex facility must be located so that it can be entered without crossing an area reserved for one sex.</p>				X	<p>An accessible sanitary facility is provided to the commercial tenancy on the ground floor</p> <p>Where an accessible sanitary facility is provided on this level, an ambulant facility must also be provided if there are one or more toilets in addition to the accessible unisex sanitary compartment.</p> <p>The design and fit-out of the accessible toilet and ambulant toilets must comply with AS 1428.1-2009.</p> <p>Should a Unisex facility be provided then only the Unisex facility will required to be ambulant. However if a separate facility is provided for both male &amp; female then both facilities are required to be an ambulant facility.</p> <p>Currently the ambulant facilities are not of adequate size and are not suitably detailed to demonstrate that these are compliant ambulant sanitary compartments in accordance with Clause 16 of AS 1428.1-2009.</p> <p>Compliance is readily achievable, however, detailed design, of the accessible sanitary facility and the ambulant facilities will be necessary at the Construction Certificate design phase.</p>

### 3.0 - AS4299 – TECHNICAL REVIEW SUMMARY

The purpose of this report part is to identify any areas of non-compliance with the architectural design in terms of the AS4299-1995 (Adaptable Housing) *Essential Class C* Requirements. The following table details the compliance status of the architectural design against the aforementioned criteria.

The table identifies compliance assessment outcomes into one of four (4) categories, as follows –

- Complies – Design compliance is achieved.
- Satisfied – Compliance is achieved through compliance with requirements detailed in Section 2.0 of this assessment report (BCA requirements).
- Does not comply – A compliance departure requires rectification. Resolution options are provided.
- Complies; subject to – Commentary is provided. Such should not be considered deficiencies, but matters for compliance at relevant design &/or construction stage.

**Note/s:**

1. Penrith Development Control Plan 2014, Part D2.5.20 requires 10% of the total number of units (SOU) to be adaptable.
2. 54x SOU are proposed. Thereby, 6x Adaptable SOU are required, as indicated on plan.
3. 6 accessible car parking spaces have been provided on architectural documentation, as required.
4. Readily moveable furniture has been treated as indicative only. The person/s responsible for furnishing the building (parts) should ensure their furnishing layout/s do not cause AS1428.1 circulation deficiencies.
5. Rather than repeating Access criteria in the below summary; where cross-over occurs between the Access requires of BCA and AS4299, then a simple comment is made ... *Satisfied by AED Access Report.*

AS4299 – ADAPTABLE HOUSING ESSENTIAL CLASS C REQUIREMENTS	COMPLIES	DOES NOT COMPLY	SATISFIED: BY AED REPORT	COMPLIANCE: SUBJECT TO	COMMENTS
<b>DRAWINGS</b>					
Provision of drawings showing the housing unit in its pre-adaption and post-adaption stages along with a description of how the adaptation is to be achieved shall also be provided.	X				Plans showing pre and post adaptation have been provided.
<b>SITING</b>					
A continuous accessible path of travel from street frontage and vehicle parking to entry complying with AS1428.1			X		Satisfied subject to compliance with Part 2.0 of this report.
<b>LETTERBOXES</b>					
Letterboxes to be on hard standing area connected to an accessible pathway.				X	To be provided at Construction Certificate design phase.
<b>PRIVATE CAR ACCOMMODATION</b>					
Carparking space or garage min. area 6.0m x 3.8m.	X				6x adaptable carspaces are indicated (as includes a common space), as required (i.e. 1x for each adaptable unit).  Carparking spaces have been indicated as complying with the requirements of AS2890.6-2009.  In this instance, AS2890.6 has superseded



AS4299 – ADAPTABLE HOUSING ESSENTIAL CLASS C REQUIREMENTS	COMPLIES	DOES NOT COMPLY	BY AED REPORT	SATISFIED: SUBJECT TO	COMMENTS
					AS4299 and is considered acceptable for its intended use.
<b>ACCESSIBLE ENTRY</b>					
<ul style="list-style-type: none"> <li>▪ Accessible entry.</li> <li>▪ Entry protected by porch or similar.</li> <li>▪ Accessible entry to be provided with a landing outside the door with a maximum fall of 1:40 with a low threshold if not protected from weather by a minimum of 1,600mm overhang.</li> <li>▪ Threshold to be low-level.</li> <li>▪ Landing to enable wheelchair manoeuvrability.</li> <li>▪ Accessible entry door to have 850mm min. clearance.</li> <li>▪ Door lever handles and hardware to AS1428.1 clause 11.1 door to be unlocked and opened with one hand.</li> <li>▪ Where lever handles are provided, the clearance between the handle and the back plate or door face at the centre of the handle shall be not less than 35mm and not more than 45mm.</li> </ul>				X	Details indicating compliance to be provided at Construction Certificate design phase, including level thresholds to balconies. Compliance is readily achievable.
<b>INTERIOR : GENERAL</b>					
Internal doors of each of the adaptable housing units shall have a clear door opening width greater than 820mm.				X	Compliance is readily achievable.
<b>LIVING ROOM &amp; DINING ROOM</b>					
<ul style="list-style-type: none"> <li>▪ Provision for circulation space of min. 2250mm diameter.</li> <li>▪ A telephone outlet shall be provided adjacent to a GPO.</li> </ul>				X	Compliance is readily achievable.
<b>KITCHEN</b>					
<ul style="list-style-type: none"> <li>▪ Minimum width 2.7m (1,550mm clear between benches).</li> <li>▪ Provision for circulation at doors to comply with AS1428.1.</li> <li>▪ Provision for benches planned to include at least one work surface of 800mm length, adjustable in height from 750mm to 850mm or replaceable. Refer to Figure 4.8.</li> <li>▪ Refrigerator adjacent to work surface.</li> </ul>				X	Details indicating compliance to be provided at Construction Certificate design phase. Compliance is readily achievable.



AS4299 – ADAPTABLE HOUSING ESSENTIAL CLASS C REQUIREMENTS	COMPLIES	DOES NOT COMPLY	BY AED REPORT	SATISFIED:	COMPLIANCE: SUBJECT TO	COMMENTS
<ul style="list-style-type: none"> <li>▪ Kitchen sink adjustable to heights from 750mm to 850mm or replaceable.</li> <li>▪ Kitchen sink bowl max. 150mm deep.</li> <li>▪ Tap set capstan or lever handles or lever mixer.</li> <li>▪ Tap set located within 300mm of front of sink.</li> <li>▪ Installation of thermostatic mixing valve.</li> <li>▪ Cooktops to include either front or side controls with raised cross bars.</li> <li>▪ Cooktops to include isolating switch or gas stop valves which can be easily and safely operated while the cooktop is in use.</li> <li>▪ Worksurface min. 800mm length adjacent to cooktop at same height.</li> <li>▪ Oven located adjacent to an adjustable height or replaceable work surface.</li> <li>▪ Locate handles towards the top of below bench cupboards and towards the bottom of overhead cupboards.</li> <li>▪ Provide 'D' pull handles.</li> <li>▪ At least one double GPO within 300mm of front of worksurface.</li> <li>▪ GPO for refrigerator to be easily reachable when the refrigerator is in its operating position.</li> <li>▪ Slip-resistant floor surface.</li> </ul>						
<b>MAIN BEDROOM</b>						
At least one bedroom of area sufficient to accommodate queen size bed and wardrobe and circulation space requirements of AS1428.2					X	Details indicating compliance to be provided at Construction Certificate design phase. Compliance is readily achievable.
<b>BATHROOM</b>						
<ul style="list-style-type: none"> <li>▪ Provision for bathroom area to comply with AS1428.1; circulation spaces at doors and around WC pans, washbasins and showers shall be able to be provided without major plumbing changes.</li> <li>▪ Slip-resistant floor surface.</li> <li>▪ Shower recess-no hob. Minimum size 1,160mm x 1,100mm to comply with AS1428.1 (refer Figures 4.6 and 4.7).</li> <li>▪ Shower area waterproofed to AS3740 with floor to fall to waste.</li> <li>▪ Recessed soap holder.</li> </ul>					X	Details indicating compliance to be provided at Construction Certificate design phase. Compliance is readily achievable.



AS4299 – ADAPTABLE HOUSING ESSENTIAL CLASS C REQUIREMENTS	COMPLIES	DOES NOT COMPLY	BY AED REPORT	SATISFIED: SUBJECT TO	COMPLIANCE:	COMMENTS
<ul style="list-style-type: none"> <li>▪ Shower waste min. 80mm diameter.</li> <li>▪ Provision for adjustable, detachable hand held shower rose mounted on a slider grabrail or fixed hook (plumbing and wall-strengthening provision).</li> <li>▪ Provision for grabrail in shower (refer to Figure 4.7 in AS4299) to comply with AS1428.1.</li> <li>▪ Provision for folding seat in shower to comply with AS 1428.1.</li> <li>▪ Taps sets to be capstan or lever handles with single outlet.</li> <li>▪ Installation of thermostatic mixing valve.</li> <li>▪ Provision for washbasin with clearances to comply with AS1428.1.</li> <li>▪ Wall cabinet with light over or similar.</li> <li>▪ Double GPO beside mirror.</li> <li>▪ Potential illumination level 300 lux generally with 600 lux task lighting.</li> </ul>						
<b>LAUNDRY</b>						
<ul style="list-style-type: none"> <li>▪ To have a slip-resistant floor surface and where practicable, extend under cabinets to allow later adaptation.</li> <li>▪ Task lighting above workspaces should be installed.</li> <li>▪ Double GPO.</li> </ul>				X		<p>Details indicating compliance to be provided at Construction Certificate design phase. Compliance is readily achievable.</p>
<b>DOOR LOCKS</b>						
<ul style="list-style-type: none"> <li>▪ Doorways to feature door hardware installed at between 900mm - 1100mm above the finished floor.</li> <li>▪ Doorways to feature lever or D-pull style door hardware.</li> <li>▪ All cupboard doors to have D-pull hardware.</li> </ul>				X		<p>Details indicating compliance to be provided at Construction Certificate design phase. Compliance is readily achievable.</p>



#### 4.0 CONCLUSION

This report identifies the compliance status of the design documentation with the relevant accessibility related DtS requirements of the Building Code of Australia 2016 (BCA) and Premises Standards.

The outcome of the report highlights that the current design is readily capable of compliance with the DtS provisions of the BCA at the Construction Certificate design phase, as nominated at Part 2.0 of this report.

Further detail is necessary to confirm compliance with AS4299-1995, as outlined at Part 3.0 of this report, however, such matters can be readily resolved at the Construction Certificate design phase.

Subject to the resolutions/commentary contained within this report, the current design is capable of complying with the accessibility provisions of the BCA and AS4299.

<p>Prepared by:</p>   <b><u>Andrew Lee</u></b> <b>Building Surveyor</b>  For AED	<p>Checked by:</p>   <b><u>Jason Storer</u></b> <b>Associate Director</b> <b>Grade A1 – BPB No. BPB0394</b> <b>A1 - Accredited Building Surveyor</b>  for AE&D
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