

# University of Sydney Health Precinct – Stage 2 Sydney University, Camperdown

**Report Prepared for:** Laing O'Rourke (Nick Dillion)  
Level 4, 100 Arthur Street  
NORTH SYDNEY NSW 2060

**Report Prepared by:** Philip Chun Access (Lynda Wilem)

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## SSD Assessment – Accessibility

BCA 2016 / Premises Standards, Disability Discrimination Act  
Assessment



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## 1. EXECUTIVE SUMMARY

This report documents a review of the architectural SSD documentation with consideration to all aspects of accessibility to and throughout the University of Sydney – Health Precinct Project (Stage with reference to the Building Code of Australia (BCA 2016), Disability (Access to Premises – Buildings) Standards 2010 (Premises Standards), Stage 1 (CIP) Consent Condition B30, relevant Australian Standards as they relate to access to premises and the spirit and intent of the Disability Discrimination Act 1992 (Cth) (DDA).

The design is at a point where the inherent BCA philosophies have been checked and development approval may be sought. The finer details with respect to BCA 2016 compliance can be finalised during subsequent design stages. The proposed development is capable of achieving a high level of access for people with disabilities and meeting all the relevant standards.

## DOCUMENT ACCEPTANCE

	Name	Signed	Date
Prepared by	Lynda Wilem <i>Senior Access Consultant</i> <i>ACAA Accredited Member 353</i>		6 July 2017

This report has been prepared based on our review of the project development approval documentation, and all reasonable attempts have been made to identify key compliance matters pursuant to the BCA and additional issues which have been deemed an impediment to access provision and may increase Client risk of attracting a complaint under the DDA.

The information provided within this report is relevant to this project and the documentation referenced. As such the information provided may not be transferred to other projects. This report must not be issued for public comment or be used for any other purpose without prior permission from Philip Chun Access Consulting.

Philip Chun Access accepts no responsibility for any loss suffered as a result of any reliance upon such assessment or report other than providing guidance to alleviate access barriers in the built environment and reduce Client risk of attracting a complaint under the DDA.



## 2. INTRODUCTION

This report documents a review of the architectural SSD documentation with consideration to all aspects of accessibility to and throughout the University of Sydney – Health Precinct Project (Stage with reference to the Building Code of Australia (BCA 2016), Disability (Access to Premises – Buildings) Standards 2010 (Premises Standards), Stage 1 (CIP) Consent Condition B30, relevant Australian Standards as they relate to access to premises and the spirit and intent of the Disability Discrimination Act 1992 (*Cth*) (DDA).

Matters that fall outside the scope of this report include structure or installation methods and assessment against Occupational Health and Safety legislation.

### 2.1 Site and Contexts

The project is the proposed Health Precinct redevelopment (Stage 1) located at the University of Sydney, Camperdown Campus.

### 2.2 Reviewed Documentation

This report is based upon the following drawings produced and provided by Billard Leece Partnership Pty Ltd (Project no. 16622):

Document No	Title	Revision
AA06-0001	Plan – SD – GA – Level 0	3
AA06-0101	Plan – SD – GA – Level 1	3
AA06-0201	Plan – SD – GA – Level 2	3
AA06-0301	Plan – SD – GA – Level 3	3
AA06-0401	Plan – SD – GA – Level 4	3
AA06-0501	Plan – SD – GA – Level 5	3
AA06-0601	Plan – SD – GA – Level 6	3
AA06-0701	Plan – SD – GA – Level 7	3
AA06-0801	Plan – SD – GA – Roof Level	3

### 2.3 Methodology

Philip Chun Access aims to provide achievable recommendations related to the provision of access to premises based on current legislation and best practice options, enabling independent, equitable and functional access for all.



### 3. LEGISLATION

#### 3.1 Building Code of Australia

The project is the proposed Health Precinct redevelopment (Stage 1) located at the University of Sydney, Camperdown Campus.

Class and use of the various levels of the building are as understood to be as follows:-

Level	Proposed Use	Building Classification
Ground floor	Labs, learning spaces, Entry / reception, Car parking, ancillary plant and delivery area	9b Public Building 7a Car parking
Level 1	Labs, library collections, learning spaces, lecture theatres, entry foyer, ancillary plant	9b Public Building
Level 2	Labs, learning spaces, lecture theatres, offices, ancillary plant	9b Public Building 5 Offices
Level 3	Labs, research areas, offices / meeting	9b Public Building 5 Offices
Level 4	Teaching and learning spaces, offices	9b Public Building 5 Offices
Level 5	Teaching and learning spaces, offices	9b Public Building 5 Offices
Level 6	Teaching and learning spaces, offices, ancillary plant	9b Public Building 5 Offices
Level 7	Future Laboratory Use	9b Public Building
Level 8	Future Laboratory Use	9b Public Building
Rooftop	Student use	9b Public building

Part D3 of the BCA and Premises Standards prescribes the minimum requirement for access to a building. Access for people with disabilities is required through the principal pedestrian entrance and throughout the building in accordance with Table D3.1.

The following table outlines the general building access requirements for this project:

Class of building	Access requirements
<b>Class 5 (office)</b>	To and within all areas normally used by the occupants
<b>Class 7a (car park)</b>	To and within any level containing accessible carparking spaces
<b>Class 9b (assembly building)</b>	
An assembly building not being a school or an early childhood centre	To wheelchair seating spaces provided in accordance with Part D3.9 To and within all other areas normally used by the occupants, except that access need not be provided to tiers or platforms of seating areas that do not contain wheelchair seating spaces



### **3.2 Disability Discrimination Act 1992 (Cth) (DDA)**

The accessibility assessment process covers all aspects of the infrastructure (premises), to the extent required to meet the objectives of the Disability Discrimination Act 1992 (Cth), including, however not limited to, Section 23 which relates to access to premises and facilities which the public may enter or use.

The Act is enforced primarily through a complaints mechanism, which allows individuals who have directly or indirectly experienced unlawful discrimination to seek a conciliated outcome through the Australian Human Rights Commission and, in the instance of unsuccessful conciliation, to bring an action in the Federal Magistrates Court or the Federal Court of Australia.

### **3.3 Access to Premises Standards - General**

In contrast to building regulations, the DDA is not prescriptive. The implementation of the Premises Standards in 2010, and corresponding changes to the BCA, is a significant step towards achieving equal access to premises and is crucial to justice and social inclusion for people with disabilities.

It is noted that the Premises Standards are limited in scope, covering aspects of building compliance applicable under the BCA. It is acknowledged that the Premises Standards could address a broader range of accessibility issues including considerations to accessibility of parklands, interior fit-out of buildings, and fixtures and fittings. As such, there are features which fall beyond the scope of the Standards which may be subject to the general complaints provisions of the DDA.



#### 4. ACCESS AND APPROACH - EXTERNAL AREAS

The Health Precinct Project (Stage 1) is located at the existing Camperdown Campus of the University of Sydney.

##### 4.1 Approach from the Allotment Boundary and Buildings on Site (BCA Part D3.2)

In accordance with BCA Part D3.2, continuous, accessible pedestrian paths of travel shall be provided to link the new building to the allotment boundary and associated, accessible buildings on the site.

The pedestrian ramps and walkways shall provide compliance with AS1428.1 (2009) – refer to Appendix A for compliance requirements regarding pathways, ramps and walkways. The nominated gradient of accessible ramps and walkways is in accordance with AS1428.1 (2009).

The crossfall to all pedestrian paths of travel within the site and to the new footpaths shall be not steeper than 1:40.

##### 4.2 Accessible Car Parking (BCA Part D3.5)

Accessible carparking, designed and constructed in accordance with AS 2890.6 (2009), is required to be provided as per the below ratio:

<b>Class of building to which the Class 7a building or carparking area is associated</b>	<b>Number of accessible carparking spaces required</b>
<b>Class 5 (office)</b>	1 space for every 100 carparking spaces or part thereof.
<b>Class 9b (assembly building)</b>	
Up to 1 000 carparking spaces.	1 space for every 50 carparking spaces or part thereof.

In accordance with BCA Part D3.5, one accessible car parking space, designed in accordance with AS 2890.6 (2009) shall be provided to serve the building.

A pull-in bay, located at the front of the building shall be provided, serving as a pick-up / drop-off area. The pick-up / drop-off area shall be accessible in accordance with AS 1428.1 (2009) and AS 2890.6 (2009).

##### 4.3 Building Entrances (BCA Part D3.2)

Continuous, accessible pedestrian paths of travel shall be provided through the principal pedestrian entrance of each building and not less than 50% of all pedestrian entrances / exits in accordance with AS 1428.1 (2009). Refer also to Appendix A for compliance requirements for entry doors.



## **5. ACCESSIBILITY PROVISIONS – INTERNAL AREAS**

### **5.1 Internal Paths of Travel Generally (BCA Part D3.3)**

BCA Part D3.3 requires that accessways complying with AS 1428.1 (2009) must be provided to and throughout areas of buildings required to be made accessible, including:

- Minimum corridor widths of not less than 1000mm.
- Passing spaces of not less than 1800mm (width) x 2000mm (length) to be provided in corridors at maximum 20m intervals where a direct line of sight is not available.
- Turning spaces of not less than 1540mm (width) x 2070mm (length) to be provided within 2m of the end of corridors and at maximum 20m intervals.
- Increased landings are required at changes of direction, including 1500mm x 1500mm turning spaces to facilitate a 60 - 90° turn.

Generally, all areas required to be accessible are provided with sufficient circulation spaces to meet AS 1428.1 (2009). Any outstanding areas, shall be addressed and achieved in accordance with AS 1428.1 (2009) as the design development progresses.

### **5.2 Floor Finishes / Surfaces (BCA Part D3.3)**

The following applies to interior finished and surface materials:

- Where carpet or any soft flexible materials are used as flooring material, the pile height or pile thickness is to be no greater than 11mm and the carpet backing to be not more than 4mm thick.
- Matting recessed within a continuous accessible path of travel to have a surface level difference to surrounding materials not more than 3mm for vertical and 5mm for rounded or bevelled edges.
- Slip resistance ratings to smooth floor finishes shall be achieved in accordance with BCA Part D.

The internal finishes to the project are to be confirmed. This shall be addressed and achieved in accordance with BCA requirements as the design development progresses.

### **5.3 Internal Doors**

Doors and doorways to be provided with the following circulation clearances as per AS 1428.1 (2009):



**Table 5.3(a) – Hinged Door Requirements**

Door Approach	Door opening direction	Clearances (mm)		Depth in front of door
		Latch side	Hinge side	
Front	Towards occupant	530	110	1450
	Away from occupant	510	-	1450
Latch Side	Towards occupant	900	110	1670
	Away from occupant	660	240	1240
Hinge Side	Towards occupant	900	660	1670
	Away from occupant	340	560	1220
Either Side	Towards occupant	900	660	1670
	Away from occupant	660	560	1240

**Table 5.3(b) – Sliding Door Requirements**

Door Approach	Clearances (mm)		Depth in front of door
	Latch side	Slide side	
Front	530	-	1450
Slide Side	395	660	1280
Latch Side	660	185	1230
Either Side	660	660	1280

**Note:** the above clearances are based upon an unobstructed door opening of 850mm, which is the minimum required clearance. Unobstructed door openings greater than 850mm will have different requirements.

Where a door required to be accessible has more than one door leaf, the active leaf shall have a clear opening width of not less than 850mm.

The distance between successive doors within airlocks, vestibules and the like shall achieve a minimum 1450mm depth between swing doors.

Generally, all internal doors required to be accessible are provided with sufficient circulation spaces to meet AS 1428.1 (2009) Clause 13.3. Any outstanding areas, shall be addressed and achieved in accordance with AS 1428.1 (2009) Cause 13.3 as the design development progresses. Where this cannot be achieved doors shall be automated.

#### **5.4 Exemptions (BCA Part D3.4)**

Where full access is unachievable due to the functions of the space, there may be opportunity to access the area under the permitted exemptions of the BCA Part D3.4 which states:

The following areas are not required to be accessible:

- a) An area where access would be inappropriate because of the particular purpose for which the area is used.
- b) An area that would pose a health or safety risk for people with a disability.
- c) Any path of travel providing access only to an area exempted by (a) or (b).

Generally, access for people with disabilities has been achieved in accordance with BCA Part D3.



## 5.5 Signage (BCA Part D3.6)

Braille and tactile signage is required to be provided throughout any building required to be made accessible in accordance with BCA specification D3.6 and AS1428.1 (2009) and must identify:

- Each sanitary facility.
- Any space with a hearing augmentation system.
- Accessible unisex facilities and indicate whether the facility is suitable for left or right handed use.
- Ambulant accessible sanitary facilities on the door of the cubicle.
- Where an entrance is not accessible, directional signage to identify nearest accessible entrance.
- Where a bank of sanitary facilities is not provided with an accessible sanitary facility, directional signage to identify nearest accessible sanitary facility.
- Each door required by Part E4.5 to be provided with an exit sign and state "Exit" and "Level" followed by either the floor level number, the floor descriptor or combination of these.

The project signage and wayfinding package shall be developed as design development progresses. Project signage and wayfinding shall meet the requirements of BCA Part D3.6.

## 5.6 Hearing augmentation (BCA Part D3.7)

A hearing augmentation system must be provided where an inbuilt amplification system is provided, other than one used for emergency purposes only as required by BCA Part D3.7.

Note: Consideration to the design specifications of AS 1428.5 (2010) is recommended, however, is not mandatory to meet the Premises Standards.

The design of hearing augmentation systems shall be developed as design development progresses. Hearing augmentation listening systems shall be provided to the project in accordance with BCA Part D3.7.

## 5.7 Tactile indicators (BCA Part D3.8)

Where a building is required to be made accessible, BCA Part D3.8 requires that tactile indicators must be provided to –

- A stairway.
- A ramp (other than kerb, step or threshold ramp).
- Any overhead obstruction less than 2m AFFL, other than a doorway, where a suitable barrier has not been provided.
- Where an accessway (adjacent to a pedestrian building entrance) meets a vehicular way in the absence of a kerb or kerb ramp.

The design of warning tactile ground surface indicators shall be developed as design development progresses. Warning tactile ground surface indicators shall be provided to the project in accordance with BCA Part D3.8.



### 5.8 Wheelchair seating spaces in Class 9b assembly buildings (BCA Part D3.10)

Wheelchair seating areas are required to be provided within Class 9b assembly buildings as per BCA Part D3.9 and in accordance with AS1428.1 (2009) Clause 18.

Number of fixed seats in a room or space	Number of wheelchair seating spaces	Grouping and location
Up to 150	3 spaces	1 single space; and 1 group of 2 spaces
151 to 800	3 spaces plus 1 additional space for each additional 50 Seats or part thereof in excess of 150 seats	not less than 1 single space; and not less than 1 group of 2 spaces; and not more than 5 spaces in any other group

### 5.9 Glazing on an accessway (BCA Part D3.12)

BCA Part D3.12 requires that where full height glazing that can be mistaken for an unobstructed opening is provided along an accessway, the glazing must be provided with visual identification as per AS 1428.1 (2009).

The design of visual indication to glazing shall be developed as design development progresses. Visual indication to glazing shall be provided to the project in accordance with BCA Part D3.12.

### 5.10 Slip Resistance (BCA Part D2.14)

Landings in a stairway must have -

- a) a surface with a slip-resistance classification not less than that listed in Table D2.14 when tested in accordance with AS 4586; or
- b) a strip at the edge of the landing with a slip-resistance classification not less than that listed in Table D2.14 when tested in accordance with AS 4586, where the edge leads to a *flight* below.

Application	Surface Conditions	
	Dry	Wet
Ramp steeper than 1:14	P4 or R11	P5 or R12
Ramp steeper than 1:20 but not steeper than 1:14	P3 or R10	P4 or R11
Tread or landing surface	P3 or R10	P4 or R11
Nosing or landing edge strip	P3	P4

The internal finishes to the project are to be confirmed. This shall be addressed and achieved in accordance with BCA requirements as the design development progresses.



### 5.11 Thresholds (BCA Part D2.15)

The threshold of a doorway shall not incorporate a step or ramp at any point closer to the doorway than the width of the door leaf in accordance with BCA Part D2.15.

## 6. VERTICAL CIRCULATION

Passenger lifts shall be provided to gain access to all levels of the building.

### 6.1 Passenger Lifts (BCA Part E3)

Every passenger lift shall be suitable for use by people with a disability, typically, requiring the following to be provided:

#### Lift dimensions

- Lift floor dimensions of not less than 1100mm x 1400mm for lifts which travel not more than 12m.
- Lift floor dimensions of not less than 1400mm x 1600mm for lifts which travel more than 12m.
- Provision for a stretcher facility within at least one emergency lift required by E3.4, or where an emergency lift is not required, if passenger lifts are installed to serve any storey above an effective height of 12m, in at least one of those lifts to serve every floor served by lifts.

#### Lift Features

- Handrail complying with the provisions for a mandatory handrail in AS1735.12 (1999).
- Minimum clear door opening complying with AS1735.12 (1999).
- Passenger protection system complying with AS1735.12 (1999).
- Lift landing doors at the upper landing.
- Lift car and landing control buttons complying with AS1735.12 (1999).
- Lighting in accordance with AS1735.12 (1999).
- 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.

All passenger lifts serving more than 2 levels shall possess:

- Automatic audible information within the lift car to identify the level each time the car stops.
- Audible and visual indication at each lift landing to indicate the arrival of the lift car.
- Audible information and audible indication must be provided in a range between 20-80dB(A) at a maximum frequency of 1500Hz.

Passenger lifts shall be provided to achieve access for people with disabilities to all areas required to be accessible in accordance with BCA Table D3.1. The proposed dimensions and locations of the passenger lifts meet the requirements of BCA Part D3.1 and E3.6.

The detailed design of the passenger lift car fitout and controls shall be developed as design development progresses. Passenger lift car fitout and controls shall be in accordance with AS 1735.12 (1999) and BCA Part E3.6.

### 6.2 Accessible Ramps (BCA Part D3.3 & D3.11)

All accessible ramps shall be designed and constructed in accordance with AS 1428.1 (2009) Clause 10.

Ramps shall have a gradient not steeper than 1 :14 per AS 1428.1 (2009) Clause 10.3.



Handrails, kerbs / kerb rails, and warning tactile ground surface indicators shall be provided in accordance with AS 1428.1 (2009). The detailed design of ramps developed as design development progresses. The design of all pedestrian ramps shall be in accordance with AS 1428.1 (2009) and BCA Part D3.3 and D3.11.

### **6.3 Stairs (BCA Part D3.3)**

All stairways, excluding fire-isolated stairs used for egress only, shall be designed and constructed in accordance with AS 1428.1 (2009) Clause 11.

The design of communication stairways shall be developed as design development progresses. Communication stairways shall be designed in accordance with AS 1428.1 (2009) and BCA Part D3.3 (refer also to Appendix A for AS 1428.1:2009 compliance requirements).

### **6.4 Fire Isolated Stairs (BCA Part D3.3)**

All fire-isolated stairways, shall possess luminance contrast to the stair nosing as per AS 1428.1 (2009) Clause 11.1(f) and (g).

The detailed design of fire-isolated stairways shall be developed as design development progresses. Fire-isolated stairways shall be designed in accordance with AS 1428.1 (2009) and BCA Part D3.3.



## 7. SANITARY AND OTHER FACILITIES

### 7.1 Unisex Accessible Toilets (BCA Part F2)

Accessible unisex sanitary compartments shall be provided in accessible parts of the building in accordance with Table F2.4(a). That is:

Class of building	Minimum accessible unisex sanitary compartments to be provided
Class 5 & 9b assembly building	Where Part F2.3 of the <i>BCA</i> requires closet pans: (a) 1 on every <i>storey</i> containing <i>sanitary compartments</i> ; and (b) where a <i>storey</i> has more than 1 bank of <i>sanitary compartments</i> containing male and female <i>sanitary compartments</i> at not less than 50% of those banks

#### Design

- An accessible unisex sanitary compartment shall contain a closet pan, washbasin, shelf or bench top and adequate means of disposal of sanitary towels.
- The circulation spaces, fixtures and fittings of all accessible sanitary facilities shall comply with the requirements of AS1428.1 (2009).
- Where two or more of each type of accessible unisex sanitary facility are provided, the number of left and right handed mirror image facilities shall be provided as evenly as possible.
- The door to a fully enclosed sanitary compartment shall:
  - (i) Open outwards; or
  - (ii) Slide; or
  - (iii) Be readily removable from the outside of the sanitary compartment, Unless there is a clear space of at least 1.2m, measured in accordance with Figure F2.5, between the closet pan with the sanitary compartment and the doorway.

#### Location

- An accessible sanitary facility shall be located so that it can be entered without crossing an area reserved for one sex only.
- Where male sanitary facilities are provided in a separate location to female sanitary facilities, accessible unisex sanitary facilities are only required at one of these locations.

The design of each accessible sanitary facility shall be developed as design development progresses. All accessible toilets shall be unisex sanitary facilities.

Each accessible sanitary facility shall fully comply with AS 1428.1 (2009) Clause 15. Refer also to Appendix A for compliance requirements for accessible sanitary facilities.



## 7.2 Unisex Accessible Showers (BCA Part F2)

Accessible unisex showers shall be provided in accordance with Table F2.4(b), that is:

Class of building	Minimum accessible unisex showers to be provided
Class 5 & 9b assembly building	Where Part F2.3 of the <i>BCA</i> requires 1 or more showers, not less than 1 for every 10 showers or part thereof.

Accessible shower and change facilities shall be provided in accordance with BCA Part D3 and F2.

The design of each accessible shower and change facility shall be developed as design development progresses. Each accessible shower and change facility shall fully comply with AS 1428.1 (2009). Refer also to Appendix A for compliance requirements for accessible shower facilities.

## 7.3 Sanitary compartments for People with an Ambulant Disability (BCA Part F2)

At each bank of toilets where there are one or more toilets are provided in addition to an accessible unisex sanitary compartment at that bank of toilets, a sanitary compartment suitable for people with an ambulant disability (PAD) shall be provided for use by males and females.

The design of each ambulant sanitary facility shall be developed as design development progresses. Each ambulant sanitary facility shall fully comply with AS 1428.1 (2009) Clause 16. Refer also to Appendix B for compliance requirements for ambulant sanitary facilities.

## 8. ADDITIONAL ACCESSIBILITY CONSIDERATIONS

As detailed prior, it is acknowledged that the Premises Standards are limited in scope, covering aspects of building compliance applicable under the BCA only.

Philip Chun Access provides the following as a summary of additional accessibility issues that may be addressed in order to reduce Client risk of attracting a discrimination complaint. Refer to Appendix B for specific requirements.

- Accessible Pick-up / Drop-off Areas
- Fire Egress for People with Disabilities
- Accessible Reception Counters
- Seating in Public Areas
- Signage
- Staff Workstations
- Kitchen / Kitchenette Facilities
- Luminance Contrast
- Lockers
- Furniture Hardware
- Lighting and Glare



## 9. CONCLUSION

This report documents a review of the architectural SSD documentation with consideration to all aspects of accessibility to and throughout the University of Sydney – Health Precinct Project (Stage with reference to the Building Code of Australia (BCA 2016), Disability (Access to Premises – Buildings) Standards 2010 (Premises Standards), Stage 1 (CIP) Consent Condition B30, relevant Australian Standards as they relate to access to premises and the spirit and intent of the Disability Discrimination Act 1992 (Cth) (DDA).

The design is at a point where the inherent BCA philosophies have been checked and development approval may be sought. The finer details with respect to BCA 2016 compliance can be finalised during subsequent design stages. The proposed development is capable of achieving a high level of access for people with disabilities and meeting all the relevant standards.



## 10. **APPENDIX A**

### **ACCESS COMPLIANCE REQUIREMENTS**



## **A1 EXTERNAL WALKWAYS**

The minimum unobstructed width of all pathways and walkways is to be 1000mm (AS1428.1:2009, Clause 6.3). A width of 1200mm is preferred for compliance with AS1428.2 (1992).

All pathways and walkways are to be constructed with no lip or step at joints between abutting surfaces (a construction tolerance of 3mm is allowable, 5mm for bevelled edges -refer to Figure 6 of AS1428.1:2009).

The maximum allowable crossfall of pathways and walkways is to be 1:40. The surfaces of an accessible path of travel are to be slip-resistant.

The ground abutting the sides of the pathways and walkways should follow the grade of the pathway and extend horizontally for 600mm. This is not required where there is a kerb or handrail provided to the side of the pathway (refer to AS1428.1:2009 Clause 10.2).

Maximum allowable gradient of the walkway is 1:20 and maximum length between landings to be 15m (for 1:20 gradient). Landings to be a minimum 1200mm in length (where there is no change in direction). For changes in direction of 180°, landings to be 1540mm in length – refer to AS1428.1 (2009), Clause 10.8.

## **A2 KERB RAMPS**

Kerb ramps to comply with AS1428 (2009) Clause 10.7.

Maximum gradient of the kerb ramps to be 1:8 and maximum length to be 1520mm (providing a maximum height of 190mm).

Kerb ramps to have a non-slip surface as required by AS1428.1.

A tooled joint should be provided between parts of the kerb ramp to assist persons with a vision impairment with orientation.

## **A3 STEP RAMPS**

The configuration of the step ramps to comply with the requirements of AS1428.1, Clause 10.6.

Maximum gradient of the step ramp is to be 1:10 and maximum length to be 1900mm (providing a maximum height of 190mm).

Landings at the top and bottom of the step ramp to comply with AS1428.1 (2009) Clause 10.8.2.

Step ramp to be enclosed on both sides (minimum height 450mm) or a kerb and balustrade shall be installed. Where a kerb is to be installed, the height of kerb rails is to be less than 65mm or greater than 150mm above the finished surface level of the ramp. This is to ensure that the foot plate of a wheelchair cannot become lodged on the kerb rail.

## **A4 ACCESSIBLE RAMPS**

Ramps are to comply with AS1428.1 (2009) Clause 10.3. Maximum allowable gradient of the ramp is 1:14, minimum clear width to be 1000mm and maximum length between landings to be 9m (for 1:14 gradient).

The ramp is required to be set back a minimum 900mm from the property boundary (AS1428.1:2009 Clause 10.3 (f)). This allows tactile indicators and handrail extensions to occur within the boundary and not protrude into the footpath area.



The ramp is required to be set back a minimum 600mm from an internal corridor (AS1428.1 (2009), Clause 10.3 (f)). This allows tactile indicators and handrail extensions to be provided and not protrude into the transverse path of travel.

Handrails, with extensions, to both sides of the ramp are to comply with AS1428.1 (2009), Clause 12. Handrails are to have an external diameter between 30-50mm to assist persons with a manual disability such as arthritis. Handrails are required on both sides of the ramp to cater for left and right handed disabilities.

Where a ramp is not enclosed, provide kerb rails in accordance with AS1428.1 (2009). The height of kerb rails is to be less than 65mm or greater than 150mm above the finished surface level. This is to ensure that the foot plate of a wheelchair cannot become lodged on the kerb rail.

Provide tactile indicators at the top and bottom of the ramps to comply with BCA Part D3.8 and AS1428.4.1 (2009). Tactile indicators are to be detectable, durable, non-slip and have a minimum 30% luminance contrast to the background colour. Tactile indicators to be provided at the top and bottom of the ramps and be set back 300mm from the edge of the ramp (refer AS1428.4.1: 2009, Figure A1).

Tactile indicators shall be required at a mid-landing where the ramp is not continuous. Where the handrail is continuous along both sides of the mid-landing, tactile indicators are not required.

## **A5 PEDESTRIAN CROSSINGS**

Where kerb ramps are to be provided at the roadway to provide an accessible path of travel for persons with a disability they are to comply with AS1428.1 (2009), Clause 10.7.

Where a pedestrian crossing is at the same level as the roadway, contrasting tactile and visual information is to be provided to alert persons with a vision impairment of the hazard.

## **A6 THRESHOLD RAMPS**

Threshold ramps are to comply with AS1428.1 (2009), Clause 10.5.

Threshold ramps are to have a maximum rise of 35mm, maximum length of 280mm and maximum gradient of 1:8.

Threshold ramps to be located within 20mm of the door leaf that it services.

## **A7 BUILDING ENTRANCES**

Entrances are to comply with AS1428.1 (2009), Clause 13 as part of the accessible path of travel.

Doors are to have a minimum clear opening width of 850mm to comply AS1428.1 (2009), Clause 13.2.

Door threshold are to be level to provide seamless entry as part of the accessible path of travel. Maximum allowable construction tolerance is 3mm for compliance with AS1428.1 (2009), 5mm where bevelled edges are provided between surfaces – refer to Figure 6.

Door to have hardware within the accessible height range of 900-1100mm above the finished floor level (AS1428.1:2009, Clause 13.5)

For glass doors, provide decals to assist persons with a vision impairment. Decals to be solid and have a minimum 30% luminance contrast to the background colour and be not less than 75mm high located within the height range of 900-1100mm AFFL. Decals are to be solid pattern to AS1428.1 (2009) Clause 6.6.



## **A8 TACTILE INDICATORS AT BUILDING ENTRANCES**

BCA Clause 3.8 (a) (v) states that for a building that is required to be accessible, tactile ground surface indicators shall be provided to warn people who are blind or have a vision impairment that they are approaching – in the absence of a suitable barrier – an accessway meeting a vehicular way adjacent to any pedestrian entrance to a building (if there is no kerb or kerb ramp at that point and excluding areas exempt from requiring access in accordance with BCA Part D3.4).

Tactile indicators are to be detectable, durable, non-slip and have a minimum 30% luminance contrast to the background colour.

## **A9 DOORWAYS**

Doorways within the accessible path of travel are to have a minimum clear opening width of 850mm (AS1428.1: 2009, Clause 13.2). We recommend the use of a 920mm leaf door as a minimum to achieve adequate clear width.

All doorways within the accessible path of travel to have complying circulation areas as illustrated in AS1428.1 (2009), Figure 31. Circulation areas are to have a maximum crossfall of 1:40.

Doorways to have minimum 30% luminance contrast as described in AS1428.1 (2009), Clause 13.1.

Doors to have hardware within the accessible height range of 900-1100mm above the finished floor level (AS1428.1: 2009 Clause 13.5)

## **A10 TACTILE INDICATORS**

Installations of tactile indicators are to be designed and installed in accordance with AS1428.4.1 (2009).

Tactile indicators are to be detectable, durable, non-slip and have a minimum 30% luminance contrast to the background colour.

## **A11 VISUAL INDICATION TO GLAZING**

Provide decals to assist persons with a vision impairment. Decals to be solid and have a minimum 30% luminance contrast to the background colour and be not less than 75mm high located within the height range of 900-1100mm AFFL. Decals are to be solid pattern to AS1428.1 Clause 6.6.

## **A12 SIGNAGE**

The BCA has requirements for Braille and tactile signage within Specification D3.6. This provides information for the provision of statutory signage. In addition, AS1428.2 (1992) contains additional information as to the form of signage.

Signage should be easily comprehended by all building users. In this regard, the use of pictograms is highly recommended. The message that the sign conveys should be unambiguous.

Placement of signage should be considered at the following locations:

- Where it is clearly visible to people in both a standing and seated position.
- At changes in direction.
- At locations where directional decisions are made.
- As required to amenities and exits.



### **A13 HEARING AUGMENTATION**

While it is not referenced by the BCA, AS1428.5 (2010): Communication for people who are deaf or hearing impaired contains information regarding assisted listening systems and can be used to ensure equitable facilities are provided for this user group.

The standard provides information relating to design solutions and equipment for the following:

- Assisted listening systems.
- Early warning systems.
- Visual display systems for intercommunication, public announcements and the like.
- Telephone services and telecommunications available to the public.

### **A14 WHEELCHAIR SEATING**

Where fixed seating is provided in an assembly building, the required wheelchair seating spaces are required to be:

- Accessed via an accessible path of travel.
- Located adjacent to, and at the same level as, other seating in a row.
- Located to allow lines of sight comparable to those for general viewing areas.

The special requirement for the footprint of a single wheelchair seating space is 800x1250mm.

The number and distribution of wheelchair seating spaces shall be per BCA Part D3.9. The design and access to wheelchair seating spaces shall be per AS 1428.1 (2009) Clause 18.

### **A15 PASSENGER LIFTS**

Every passenger lift in an accessible building must be suitable for use by people with a disability. Typically, requiring the following to be provided:

#### **Lift dimensions**

- Lift floor dimensions of not less than 1100mm x 1400mm for lifts which travel not more than 12m.
- Lift floor dimensions of not less than 1400mm x 1600mm for lifts which travel more than 12m.
- Provision for a stretcher facility within at least one emergency lift required by E3.4, or where an emergency lift is not required, if passenger lifts are installed to serve any storey above an effective height of 12m, in at least one of those lifts to serve every floor served by lifts.

#### **Lift Features**

- Handrail complying with the provisions for a mandatory handrail in AS1735.12.
- Minimum clear door opening complying with AS1735.12.
- Passenger protection system complying with AS1735.12.
- Lift landing doors at the upper landing.
- Lift car and landing control buttons complying with AS173.5.12.
- Lighting in accordance with AS1735.12.
- 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.

All passenger lifts serving more than 2 levels must possess:

- Automatic audible information within the lift car to identify the level each time the car stops.
- Audible and visual indications at each lift landing to indicate the arrival of the lift car.
- Audible information and audible indication must be provided in a range between 20-80dB(A) at a maximum frequency of 1500Hz.



## **A16 STAIRS**

Stair construction is to comply with AS1428.1 (2009) Clause 11.1.

Stairs are to have closed or opaque risers. Open risers cause confusion for persons with a vision impairment and may trigger conditions such as epilepsy due to light penetrating through the open risers.

Where the stair intersects with an internal corridor, the stair shall be set back in accordance with AS1429.1 (2009) Figure 26C/D to allow adequate space for handrail extensions and tactile indicators.

Provide handrails, with extensions, to both sides of the stair (AS1428.1:2009 Clause 11.2). Handrails are to have an external diameter between 30-50mm to assist persons with a manual disability such as arthritis. Handrails should be continuous around the landings where possible. Handrails are required on both sides of the stair to cater for left and right handed disabilities. A central handrail is also an acceptable solution where adequate width is available.

Stair nosings to have minimum 30% luminance contrast strip 50-75mm wide to the top of the stair tread to assist persons with a vision impairment. The strip can be set back 15mm from the edge of the riser.

Stair nosings shall not project beyond the face of the riser.

Provide tactile indicators at the top and bottom of the stair to comply with BCA Part D3.8 and AS1428.4.1 (2009).

Tactile indicators are to be detectable, durable, non-slip and have a minimum 30% luminance contrast to the background colour.

## **A17 FIRE ISOLATED STAIRS**

Stair nosings to have minimum 30% luminance contrast strip 50-75mm wide to the top of the stair tread to assist persons with a vision impairment. The strip can be set back 15mm from the edge of the riser.

Stair nosings shall not project beyond the face of the riser.

## **A18 UNISEX ACCESSIBLE SANITARY FACILITIES**

Set-out of fixtures and fittings within the accessible sanitary facilities to offer compliance with AS 1428.1 (209) Clause 15 as follows -

- Crucial dimensions for the toilet are 450mm from centreline of pan to side wall, 800mm from front of pan to rear wall and a seat height of 470mm.
- A minimum clear dimension of 1400mm is required from the toilet pan to any other fixture (see Figure 43).
- For the basin, a minimum dimension of 425mm is required from the centreline of the basin to the side wall and height of basin to be between 800-830mm.
- Grabrails are to be provided at the side and rear of the toilet in compliance with AS1428.1 at a height of 800mm.
- Taps are to have lever handles, sensor plates or similar controls. For lever taps a minimum of 50mm clearance to be provided to adjacent surfaces.



- Toilet seat shall be of the full round type, be securely fixed in position when in use and have fixings that create lateral stability. They should be load rated to 150kg, have a minimum 30% luminance contrast to the background colour (e.g. pan, wall or floor) and remain in the upright position when fully raised.
- Provide a backrest to accessible toilets to comply with AS1428.1 (2009) Clause 15.2.4.
- Accessible toilet to be identified using the International Symbol for Access. Pictograms / lettering to have a minimum 30% luminance contrast to the background colour. Signage is to comply with AS1428.1, Clause 8 and include information in tactile and Braille formats (as required by the BCA).
- Doorways are to have a minimum clear opening width of 850mm to comply AS1428.1 (2009), Clause 13.2 as part of the accessible path of travel. Adequate circulation area at the latch side of the doorway is required to allow independent access to the facility – for details refer to AS1428.1 (2009), Figure 31.
- Door hardware is to be located within the accessible height range of 900-1100mm above the finished floor level. The use of lever handles is encouraged to assist persons with a manual disability such as arthritis.
- Controls within the accessible toilet facilities, such as light switches, are to be in the accessible height range of 900-1100mm AFFL to comply with AS1428.1 (2009) Clause 14. Controls shall be located not less than 500mm to a corner.

#### **A19 UNISEX ACCESSIBLE SHOWERS**

Showers are to comply with AS 1428.1 (2009) Clause 15.5 and include accessible features such as grabrails, adjustable height shower rose and fixtures within an accessible height range.

The minimum dimensions of an accessible shower recess are to be 1160 x 1000mm. A folding seat, at a height of 470mm is to be provided. All taps to be located within the height range of 900-1100mm AFFL.

Circulation space in front of the shower is to be provided as illustrated in AS1428.1 (2009) Figure 47.

#### **A20 PEOPLE WITH AMBULANT DISABILITIES CUBICLES (PAD)**

PAD cubicles within male and female toilets to be in compliance with AS1428.1 (2009) Clause 16, including the following:

- Width of PAD cubicles is to be 900-920mm.
- Provide grabrails to PAD cubicles to comply with AS1428.1 (2009) Clause 17 and Figure 53A.
- Doors are to have a minimum opening width of 700mm and comply with AS1428.1 (2009) Figure 53B.
- Provide signage to the PAD cubicles to comply with AS1428.1 (2009) Clause 16.4.
- Provide 900 x 900mm circulation space in front of pan and each side of doors on path to the toilet. Doors are not to swing into circulation spaces.



## 11. **APPENDIX B**

### **BEST PRACTICE RECOMMENDATIONS**



## **B1 ACCESSIBLE PICK-UP / DROP-OFF AREAS**

Accessible car parking spaces to be a minimum of 2400mm wide with a shared area to one side of the space 2400mm wide. Circulation space can be shared between adjacent accessible carparks. The car space and the shared zone should be a minimum of 5400mm long.

Provide a bollard to the shared circulation space as illustrated in AS2890.6 (2009) Figure 2.2.

The maximum allowable crossfall of an accessible carparking area is to be 1:40. This crossfall applies both parallel and perpendicular to the angle of parking.

For covered carparking, the clear height of the accessible carparking space to be 2500mm as illustrated in AS2890.6 (2009), Figure 2.7 and approach path is to have a minimum of 2200mm.

Designated accessible carparking is to be identified using the International Symbol for Access (ISA) – ground and vertical signage is required. Signage is to comply with AS1428.1 (2009).

## **B2 FIRE EGRESS FOR PEOPLE WITH DISABILITIES**

HREOC Advisory notes on access to premises, Item 5.21 states that, in an emergency, all users should be provided with a means of egress from a premises to a place of comparative safety. This ensures people with disabilities to be provided with the same level of protection as other premises users or building occupants.

The provision of places of comparative safety are proposed within the fire-isolated egress stairwells. This area is replicated on all levels for consistency.

We recommend that signage displaying the International Symbol of Access (ISA) be provided to identify any places of comparative safety provided. Signage should state that the area is safe in the event of an emergency. Signage should comply with BCA D3.6 and BCA Specification 3.6 and have braille and tactile components.

We also recommend that as a part of the emergency evacuation plan for the building, egress for persons requiring assistance be addressed. Evacuation procedures for the building should address the provision of places of comparative safety for people with limited mobility.

## **B3 RECEPTION COUNTERS**

We recommend the provision of accessible reception counters designed in accordance with AS1428.2 (1992), Part 24.1. Height of the counter is to be between 750mm ( $\pm 20$ ) and 850mm ( $\pm 20$ ) above the finished floor level and have foot and knee clearance under the counter as outlines in Figure 25. The minimum width of the accessible counter and clearance below is 900mm.

The level of access to be provided may be dependent upon the level of interaction intended, such as high level interaction, minimal and verbal and visual interaction only.

## **B4 SEATING TO PUBLIC AREAS**

Where seating is located within public areas, a proportion of accessible seating should be provided offering compliance with AS1428.2 (1992) Clause 27.

## **B5 SIGNAGE**

Signs and symbols should be provided to inform all users. Provide a signage system which informs all users (HREOC Advisory notes on access to premises, Item 5.15).



## **B6 STAFF WORKSTATIONS**

Consideration should be given to the provision of accessible staff workstations within the building. Height adjustable workstations which can be adjusted by the user are highly recommended, with an adjustment capability between 610 and 760mm from the floor (AS 4442:1997 Clause 2.2.2 (b)).

Where provided, fixed height workstations to be provided at a height between 700 and 720mm (AS 4442:1997 Clause 2.2.4). This may form part of a client management plan and associated operational procedures relating to individual facilitation of employees with temporary or permanent disabilities

## **B7 KITCHEN / KITCHENETTE FACILITIES**

Consideration should be given to the provision of accessible kitchen /kitchenette facilities which are designed and constructed in accordance with AS 4299:1995 Clause 4 and AS 1428.2:1992 Clause 24.

## **B8 LUMINANCE CONTRAST**

Luminance contrast is the light reflected from one surface or component, compared to the light reflected from another surface or component. A luminance contrast of 30% between two surfaces is generally accepted as a minimum when considering it as a navigational / way-finding tool for people with Vision impairment.

In this regard, we recommend that the provision of a minimum 30% luminance contrast between surfaces be adopted in the following instances to assist people with Vision impairment negotiate the built environment:

- Provide luminance contrast between walls and doors.
- Generally, contrasting wall and floor surfaces should be provided. At a minimum, skirting boards which provide suitable contrast to the floor surface assist people with low vision in identifying perimeters of corridors and accessible spaces.
- For joinery, Counters or benches to achieve a minimum 30% luminance contrast with the counter / bench face to which it is viewed. Additionally, Counter / bench surfaces to have a matte or low sheen finish;
- For handrails and grabrails, provide a luminance contrast between the rail and the wall colour;
- For signage, provide luminance contrast so that message can be conveyed – luminance contrast required between the information in the sign and base sign colour.

*Note: Statutory requirements for luminance contrast include tactile indicators, stair nosing strips, toilet seats and door / wall identification.*

## **B9 LOCKERS**

The provision of lockers at a suitable height for people using a wheelchair is recommended. The height range for accessible lockers to be 230mm-1350mm AFFL based on the reach ranges prescribed in AS1428.2 (1992).

## **B10 FURNITURE HARDWARE**

Generally, drawer and cupboard fronts that have recessed finger pull handles do not comply with AS 1428.1 (2009) Clause 13.5.2(b) and therefore are not recommended for the new schools PPP.

We recommend the use of D-type pull handles to furniture generally which provide a minimum 35mm clearance between the rear face of the handle and the face of the drawer.



## **B11 LIGHTING AND GLARE**

Minimum interior lighting levels of maintenance illumination are to be in accordance with AS1680.1 (1990) and with consideration to AS1428.2 (1992) Clause 19. Consistent lighting levels should be provided throughout, without pools of light or dark areas.

Glare and excessively reflective surfaces should be avoided. This includes glare from windows