Morris Goding
Access Consulting

Young High School and Community Library Package

Main Works Package – Library and EE Block

Access Review Design Development v.2

3rd October 2019

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1. Introduction

1.1 Summary

Morris Goding Access Consulting (MGAC) has reviewed the Detailed Design Documentation for the Young High School and Community Library Facility.

In general, the Detailed Design highlights a high degree of functional and technical compliance to the Access to Premises Standard, AS 1428 series and the Disability Discrimination Act (DDA), as the pathways, entrances, circulation spaces and sanitary facilities have all considered accessibility.

This report highlights key recommendations and/or items for clarification that have been identified to ensure functional compliance to the premises, with the consideration of Universal Design.

1.2 Documentation

This correspondence is specific to the following key stage drawings:

DD drawing package received 17.09.19 from James Cristallo – Hayball Architects

DD drawing package EE Block received 02.10.19 from James Cristallo – Hayball Architects

1.3 Legislation

The Access to Premises Standards as detailed within the National Construction Code 2016 and highlights the minimum level compliance requirements for Accessibility or Deemed to Satisfy Provisions. The Standard references the technical requirements of the built environment through the Australian Standard 1428 series. Achieving compliance to the Access to Premises Standard goes a significant way to achieving compliance with the requirements of the Disability Discrimination Act (DDA).

A registered Building Surveyor/PCA is required prior to issuing permits, to confirm compliance with the requirements. Where the Deemed to Satisfy provisions are unable to be met, the Registered Building Surveyor/PCA can seek a Performance Solution from a relevant expert to detail Performance Compliance Solutions. For existing buildings these are increasing important as the cost and structural constrains to modify an existing building could make the modification unviable.

The key elements of the Access to Premises Standard include:

- Part D3 – Access for People with a Disability.
- Part E3 – Passenger Lifts.
- Part F2 – Sanitary and Other Facilities.

1.4 Other Applicable Standards & Legislation

- Disability Discrimination Act (DDA) 1992.
- National Construction Code 2016.
- AS1428.1 – 2009, Part 1: General Requirements for Access – New Building Work.
- AS1428.2 – 1992, Part 2: Enhanced and Additional Requirements – Buildings and Facilities.

- AS1428.4.1 – 2009, Part 4.1: Means to Assist the Orientation of People with Vision Impairment – TGSI.
- Disability (Access to Premises – Buildings) Standards 2010 (DAPS 2010).
- AS1735.12 – 1999: Lift Facilities for People with Disabilities.

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2. Non-Compliance Recommendations

These recommendations identify items requiring attention by the design team and are to be read in conjunction with the MGAC issued drawing mark-ups that identify the locations and extent of the recommendations.

The "*Architect Confirmation*" column in the table below tracks each recommendation to a reference that closes the non-compliance. This column shows an email reference and/or a revised drawing number, as might be sufficient to close the item.

Where items are identified as being covered by a *Performance Solution*, these will be listed in Section 3 of this report. A listed Performance Solution is optional. It can be resolved by a redesign according to a recommendation and in doing so comply with Deemed to Satisfy Provisions.

For additional design guidance during future design development, the design checklist in the Section 4 of this report should be consulted.

Element	**Issues/ Recommendations**	**Architect Confirmation**
Building Entrances – Young Library	New Library shows multiple entrances on the lower and upper ground. All entrances are via double doors and show a compliance of 850mm clearance on 1x side of the double doors. Only doors that should be less than 850mm are areas that are excluded under the BCA from accessible requirements. Sliding door outside the Coffee Bar on the Upper Ground floor is assumed to be automated during opening hours. If this door is available after hours, ensure the operation of this door, if it's by button/keycard, is compliant with AS1428.1-2009. See rear of the report for button control location requirements. Door componentry details not provided. Ensure door hardware has returns for the dexterity impaired at the correct heights and weights. See rear of the DD report for door compliance.	
Building Entrances – Block EE	All new entrances show compliance is achieved for can be achievable. Minor concern with door DEE 0007.2 lacking the 1450mm depth on the latch side of the door for wheelchair user. Previous revision showed compliance, recommend reverting. Door componentry details not provided. Ensure door hardware has returns for the dexterity impaired at the	

	correct heights and weights. See rear of the DD report for door compliance.	

Paths of Travel – Young Library	Ensure all paths of travel provide 1450mm between doors wings for wheelchair users. The circulation vestibule on Lower ground current is less than this. Recommend flipping the outer door so the door opens away from the second vestibule door. See drawing comments *"2277-A03.01-FITOUT Plan – LOWER GROUND – MGAC Comments 27.09.19".* Ensure the slip resistance of flooring systems used within areas required to be accessible (including ramps, stairs and landings) are traversable by a wheelchair or walking frame, tested in accordance with wet pendulum test method of AS4586:2013/HB198. This can be worked through at CC stage.	
Paths of Travel – Block EE	Drawings show compliance is achieved. Minor comment that was made at the previous review on the kitchen counters being 1540mm min. from one another so wheelchair users can do 180 turns in the kitchen. Ensure the slip resistance of flooring systems used within areas required to be accessible (including ramps, stairs and landings) are traversable by a wheelchair or walking frame, tested in accordance with wet pendulum test method of AS4586:2013/HB198. This can be worked through at CC stage.	

Doors – Young Library	Large amount of doors are lacking compliant clearances and circulations. Due to the quantity please refer to MGAC mark-up *"2277-A03.01-FITOUT Plan – LOWER GROUND – MGAC Comments 27.09.19"*and refer to AS1428.1 Figures 31 and 32. Door componentry details not provided. Ensure door hardware has returns for the dexterity impaired at the correct heights and weights. See rear of the DD report for door compliance.	
Doors –	As per previous comment concerning the entrance door AS4586:2013/HB198 under 'paths of travel'.	

Block EE	Door componentry details not provided. Ensure door hardware has returns for the dexterity impaired at the correct heights and weights. See rear of the DD report for door compliance.	

Lifts – Young Library	Young Library shows Lift NN – R0010 for accessible travel between the floors. Lift carriage size indicates compliance can be achieved. Internal details of the carriage haven't been provided. See rear of the report for lift compliance and recommend providing any details for review. Lift lobby on all floors show 1800x2000mm can be achieved for the wheelchairs (and other wide loads) to pass one.	

Stairs – Young Library	Spiral stairs NN R0115 are shown connecting the Young Library Upper Ground and Lower Ground. Stair don't provide elevations details for handrails and risers. Plan views indicate that compliant handrails can be achieved. See rear of the report for all stair compliance requirements and provide larger details for comment. Confirm is these stairs have a void beneath them. Anywhere there's less than 2000mm of head height clearance this introduces a potential collision risk for the vision impaired. This is a common issue under stairs. Confirm if stairs have a void, if so, recommend filling it in, providing a barrier (natural or balustrade). Stairs NNR0128 show compliance can be achieved however don't show handrails elevations or nosing. To be worked through at CC stage. See rear of the DD report for finer details. Stairs NNR0143 show compliance can be achieved however don't show tactiles, handrails or nosings on the plan view. Please provide elevation details and finer details. See rear of the DD report for finer details. Stairs NNR0003 show compliance can be achieved however don't show handrails elevations or nosing. To be worked through at CC stage. See rear of the DD report for finer details.	

	Client to confirm if external set of stairs to the east of the Library are existing or new and subject to review. Client to confirm if the northern set of bleacher stairs in the external domain are existing or new and subject to review.	

Accessible Toilet - Young Library	Young Library shows a total of 5 accessible bathrooms that are split between LH and RH transfer. Recommend splitting the 2x LH transfer pans on the Lower Ground floor so that 1x is a RH transfer to avoid complaint. All plan views indicate that compliance can be achieved given the rooms size. See minor mark-up comments. Please provide elevation details for review. See rear of the DD report for all accessible bathroom requirements.	
Accessible Toilet- Block EE	2x accessible bathrooms shown are LH transfer. Recommendation is that the northern toilet is swapped to the other side of the room with the basin as there's a clash (see drawing mark-ups). This will give wheelchair users with dominate sides of their body options for transferring to the toilet pan. See drawing 2277-EE.A08.03 for comments on the accessible bathroom componentry. See rear of the DD report for all accessible bathroom requirements.	

Ambulant Cubicles – Young Library	All ambulant cubicles are shown on all floors that could comply with AS1428.1-2009. Elevation details to be worked through at CC stage. Grabrails (only shown on 1 side on drawings) and clothes hooks will need to be provided with ambulant cubicle documentation – refer to design checklist under ambulant cubicles.	
Ambulant Cubicles - Block EE	See drawing 2277-EE.A08.03 for comments on the ambulant bathroom componentry. These facilities require 900x900mm clearance in front of the toilet basin and doors that are 700mm minimum	

	clearance. Currently this impeded on by the wash basin. Ensure compliance is achieved.	

Hearing Augmentation	Documentation has not been issued. Client has made a comment on the previous revision that this has been noted as a requirement and their AV schedule plans to provide this. This can be reviewed at CC/OC stage. Refer to design checklist for future design development information. All rooms indicated as “Meeting Rooms” or similar have been assumed to have audio/visual capabilities. MGAC consider even a wall mounted TV subject to the requirements of the hearing augmentations. Hearing augmentation required where presentations, communications, or similar can take place.	

Signage	Documentation has not been issued. Signage required for; - Accessible/ambulant bathrooms. - Hearing augmentations. - Wayfinding to accessible entrances from non-accessible entrances. In general all rooms should provide raise lettering and braille for vison impaired wayfinding. Refer to design checklist at the rear of this report for future design development information.	

3. Performance Solutions

Non-Compliance	Justification
TBA	TBA

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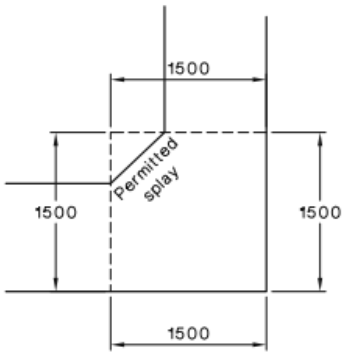
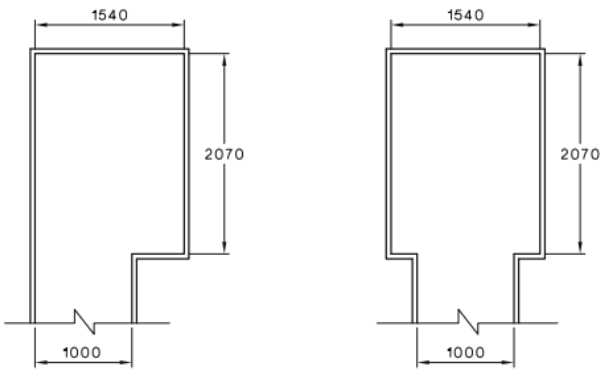
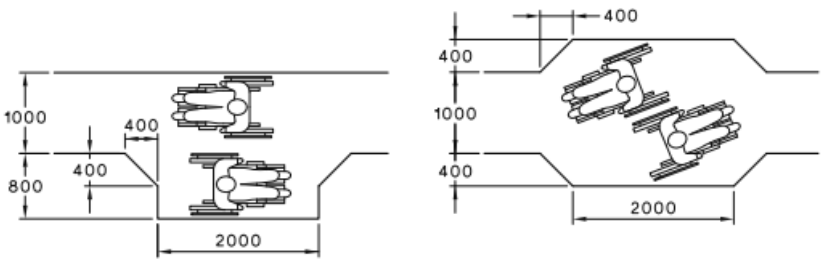
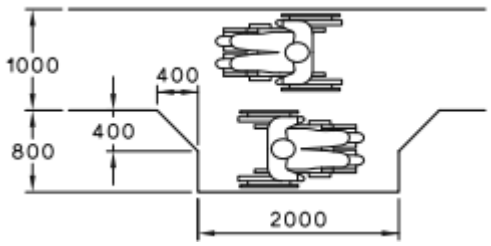
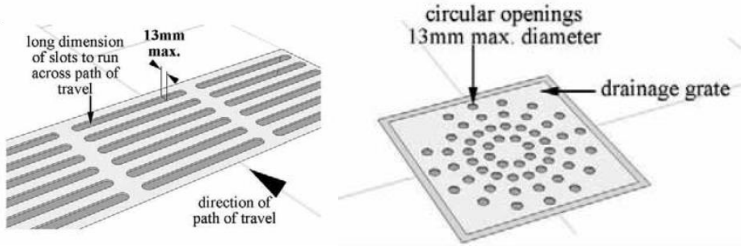
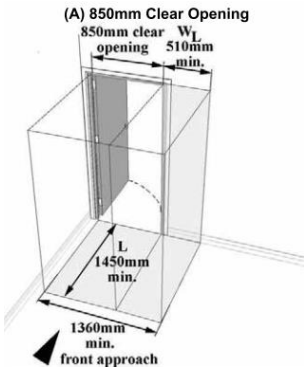
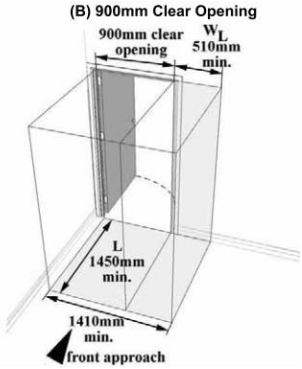
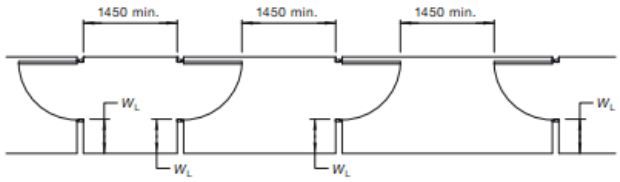
4. Design Checklist

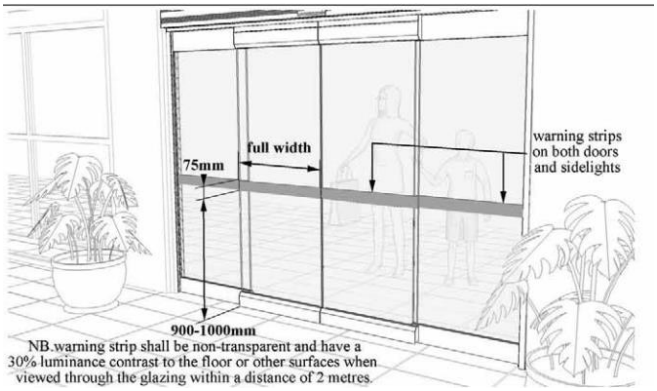
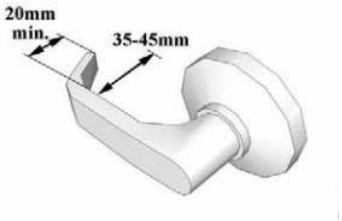
MANDATORY ISSUES (UNDER BCA 2016 & DDA PREMISES STANDARDS 2010)	
1. External Linkage	
1.1.	Provide an accessible path of travel compliant with AS1428.1 from all main pedestrian entry points at the site boundary to the principal pedestrian entrance/s of the building.
1.2.	For multiple building entries, ensure an accessible path of travel, compliant with AS1428.1 to and through 50% of entrances including the principal pedestrian entrance.
1.3.	Ensure any direct pedestrian linkages (i.e. not public footpath) from associated accessible buildings are compliant with AS1428.1.
1.4.	Provide an accessible path of travel, compliant with AS1428.1 from accessible car parking space/s on the site to the main entrance.
2. Ingress and Egress	
2.1.	Ensure a non-accessible entry is no more than 50 metres from an accessible entry (buildings >500m2).
2.2.	Provide level landing areas (1:40 max. gradient/crossfall) at doorway circulation areas and changes in direction to ensure safety when turning.
2.3.	Door operational forces to be lightweight (20N max.) suitable for people with disabilities. If this cannot be achieved an automatic or power operated main entry door to be provided, compliant with AS1428.1. Refer to Door section for door control details. It should be noted there are numerous variables that can affect door forces which need to be considered (e.g. door size, location, door seals, correct hanging, air pressure, door closer – CAM actuator).
3. Affected Part (NB. Only include if relevant to an existing project)	
3.1.	Ensure that the 'affected part' of the building i.e. the principal pedestrian entrance to the existing building and the accessible path of travel (including lift facility) from this entrance to the new or modified work is compliant with AS1428.1:2009, BCA and DDA Access Code as required by the DDA Premises Standards (Part 1-6).
4. Paths of Travel	
4.1.	Provide 1000mm min. width paths of travel compliant with AS1428.1.

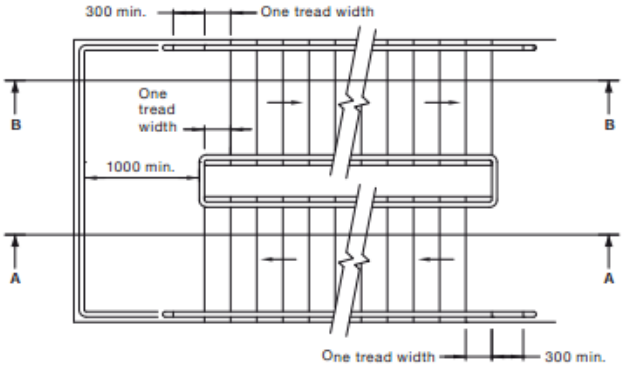
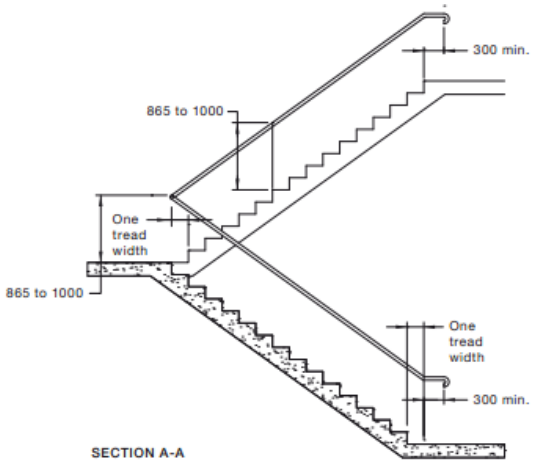
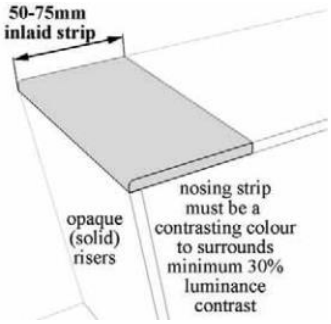
4.2.	Corridors less than 1500mm wide that turn between 60-90 degrees need increased (1500mm) width at turn with 45 degree splay on internal side, compliant with AS1428.1 fig. 4.  Turn 90° in path of travel Corridor less than 1500 mm wide requires widening at turn
4.3.	Turning spaces (1540mm W x 2070mm L) to be provided along pathways at 20m intervals and within 2m of corridor ends, to enable a wheelchair user to turn 180 degrees.  (a) Space required in corridor (b) Space required in corridor
4.4.	Provide at least one wheelchair passing bay (1800mm W x 2000 L) outside passenger lifts  DIMENSIONS IN MILLIMETRES FIGURE 3 EXAMPLES FOR PASSING SPACE FOR WHEELCHAIRS

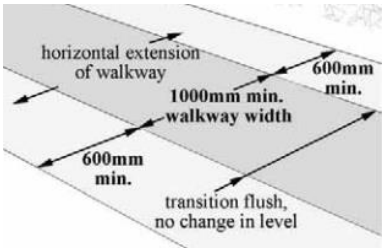
4.5.	When a direct line of sight is not available additional wheelchair passing bays (1800mm W x 2000 L) are to be provided at 20m max, intervals. 
4.6.	Ensure the slip resistance of flooring systems used within areas required to be accessible (including ramps, stairs and landings) are traversable by a wheelchair or walking frame, tested in accordance with wet pendulum test method of AS4586:2013/HB198. This is needed to satisfy AS1428.1 Clause 7.1. Test certificates required at OC Stage. **NB. All wet pendulum testing issued after 1 May 2014 must use 2013 test method. Test results issued prior to 1 May 2014 using 2004 method (HB197 Table 3) are still valid under BCA and for compliance purposes the slip ratings V, W, X (under 2004 method) can be considered equivalent to P5, P4, P3 (under 2013 method).*
4.7.	Ensure that any overhead hazards in areas with less than 2m min. vertical clearance (e.g. angled wall/columns or exposed underside of any stairs/escalators) will have access impeded by suitable physical barrier or have handrail and kerb rail or warning TGSI's installed, compliant with AS1428.4.1 fig. 2.6.
4.8.	Should carpet or similar soft flexible flooring surface be used, ensure pile height is no more than 11mm with 4mm max backing surface, compliant with DDA Premises Standard.
4.9.	Ensure drainage grates on accessible path of travel have openings no more than 13mm wide x 150mm long, with greater dimension transverse to main direction of travel to assist wheelchair users. 
5. Emergency Egress – Fire Isolated Stairs	
5.1.	Ensure that all ramps, stair treads/nosings and stair landings on required egress paths are slip resistant in accordance with BCA Table D2.14 (tested to AS4586:2013/HB198, Table 3A).
5.2.	All stair treads require contrasting step nosing strips by DDA Access Code 2010 clause D3.3 (a)(iii), compliant with AS1428.1 as follows:

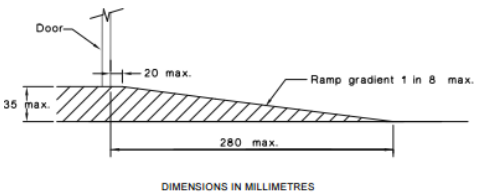
	Step nosing strips to be across full width of stair, between 50-75mm wide, in a continuous colour solid strip with 30% luminance contrast to background surface. Step nosing strips to be located on edge of tread (15mm max. setback if applied) and not to extend onto risers more than 10mm max. if exposed.
5.3.	Provide at least one accessible handrail as required under BCA part D2.17 within all fire-isolated stairs/ramps serving areas required to be accessible. The handrail profile, fixing and installation height is to be compliant with AS1428.1 clause 12.
5.4.	Clarification from BCA consultant/PCA is required to satisfy BCA Part D2.17 for the height of the top of the handrail to be at a consistent height (AS1428.1 clause12e), in particular throughout stair flights and if provided as inner handrail over landings Note: In our opinion, this could be achieved by including an off-set tread at base of each stair flight or by increasing stair landings by 300mm min. length (more than required egress path) to allow space for handrail to extend and continue at consistent height.
5.5.	All doors required to have “Exit” signs (under BCA clause 4.5) to also include accessible identification signs to identify each door for people with vision impairment. The signage to include appropriate raised tactile pictogram, raised text (in title case) and Braille. The sign is to state “Exit” and “Level” followed by either: The floor level number (where sign located), or; A floor level descriptor (where sign located), or; A combination of both of the above. The signage to be located on the wall, adjacent to latch side of door between 1200-1600mm height from FFL (with first line of braille to be located between 1250-1350mm from FFL).
5.6.	Provide 30% min. luminance contrast between egress doorways and adjacent surface/s. The contrasting area (e.g. wall, architrave etc.) must be 50mm min. width to effectively assist people with vision impairment.
5.7.	Where fire isolated stairs (base build only) are also used as communication stairs between levels ensure they are designed to comply with AS1428.1. Refer to general Stair section.
6. Doors	
6.1.	Doors (common use) require greater clear width to ensure 850mm min. (generally 920mm door leaf) to comply with AS1428.1:

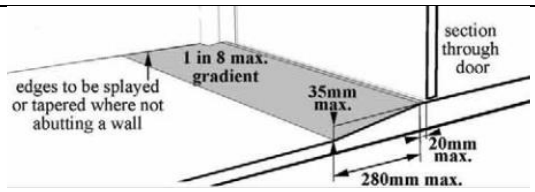
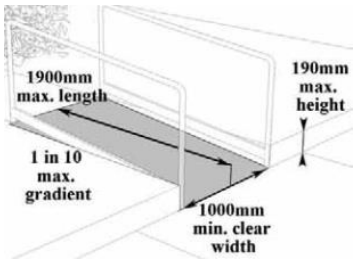
6.2.	Hinged doors (common use) require greater latch side clearance to ensure 510mm min. width on latch side (door opens away from user) to comply with AS1428.1. 
6.3.	Hinged doors (common use) require greater latch side clearance to ensure 530mm min. width on latch side (door opens toward user) to comply with AS1428.1. 
6.4.	Corridors require increased clear depth in front of doorways to ensure access for wheelchair users, compliant with AS1428.1.
6.5.	Provide 1450mm length between successive door swings in airlocks/vestibules on accessible path of travel. 
6.6.	Provide 30% min. luminance contrast between all doorways and adjacent surface/s. The contrasting area (e.g. wall, architrave etc.) must be 50mm min. width to effectively assist people with vision impairment. NB. Frameless glazed doorways will not meet this requirement.

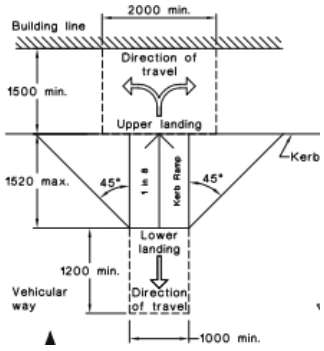
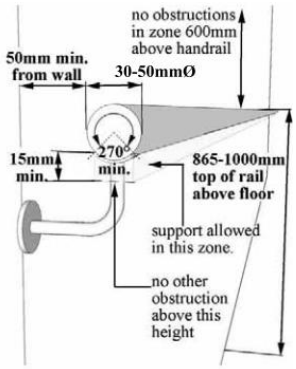
6.7.	Ensure all fully glazed doors and surrounding glazing (including glazed walls with no transom or similar), are clearly marked with 75mm min. wide, solid, non-transparent, contrasting line across their full width. The lower edge of line must be between 900-1000mm FFL and have 30% luminance contrast when viewed against floor or background surface within 2m of glazing. NB. Opaque strips to be used. 
6.8.	Provide lever action handles on hinged doors with returns or similar to assist people with dexterity impairment. The handle to be placed between 900-1100mm above FFL, compliant with AS1428.1. 
6.9.	Door operational forces to be lightweight (20N max.) suitable for people with disabilities, compliant with AS1428.1.
6.10.	The use of any intercom and/or door release to be placed between 900-1250mm FFL on the latch side of doorway and no less than 500mm from any internal corner or obstruction, compliant with AS1428.1.
6.11.	The control buttons for power operated doors to be raised, 25mm min. diameter, installed in accessible location i.e. between 1-2m from hinged door leaf in open position, between 900-1250mm height from FFL and at least 500mm from internal corner, compliant with AS1428.1.
7. Stairs	
7.1.	Ensure stairs located at site boundary are recessed (900mm min. from boundary) to allow required handrail extensions and TGSI's to not protrude into transverse path of travel, compliant with AS1428.1 fig. 26a.

7.2.	Ensure stairs adjacent to internal corridors are recessed (1 tread width plus handrail extension /turn down, approx. 650mm) to allow required handrail extensions to not protrude into transverse path of travel, compliant with AS1428.1 fig. 26b.
7.3.	Ensure all stairs have closed risers to assist people with ambulant and sensory disabilities, in accordance with AS1428.1.
7.4.	The stair design to provide an off-set tread at base of all stair flights to enable the continuous handrail provision at consistent height, compliant with AS1428.1 fig. 28a below:  
7.5.	Provide handrails on both sides of stairs compliant with AS1428.1 (see below).
7.6.	Provide warning tactile ground surface indicators (TGSI's) at top and bottom of all stairs in accordance with AS1428.4.1 (see below).
7.7.	Provide contrasting step nosing strips on all stair treads compliant with AS1428.1 as follows: Step nosing strips to be across full width of stair, between 50-75mm wide, in a continuous colour solid strip with 30% luminance contrast to background surface. Step nosing strips to be located on edge of tread (15mm max. setback if applied) and not extend onto risers more than 10mm. (if exposed). 
8. Walkways	

8.1.	Ensure 1:20 walkways have suitable landings at 15m max. intervals, compliant with AS1428.1 (see Landings section).
8.2.	Ensure walkway landings are 1200mm min. length, (no change in direction) or 1500mm x 1500mm min. length (internal splay permitted), for 90 degree turn, compliant with AS1428.1.
8.3.	Provide a suitable height wall (450mm min. height) or kerbing along open walkway sides, compliant with AS1428.1 fig. 19: Kerbing to be between 65-75mm height above FFL, or; At least 150mm height above FFL. NB. The top of kerbing must not be within 75-150mm range above FFL to minimise risk of wheelchair footplate entrapment. If kerbing extends within 75-150mm range between it must be continuous with no gap greater than 20mm.
8.4.	Without walls or kerbing, walkways (1:20 - 1:33 gradients) need to extend at least 600mm min. width at same grade in firm and level surface of different material compliant with AS1428.1. 
8.5.	Ensure curved walkways have 1500mm min. clear width with appropriate min. inside curve radius compliant with AS1428.1 fig. 20.
8.6.	Ensure the threshold of 1:20 walkway has smooth level transition between surfaces. Alternatively, provide wall or handrail and kerbing compliant with AS1428.1 to minimise potential trip hazards.
9. Ramps	
9.1.	Ensure connected ramps do not exceed 3.6m height, compliant with DDA Access Code. NB. This does not apply under BCA H2 public transport buildings.
9.2.	Ensure ramps that are adjacent to site boundary are recessed 900mm from boundary to ensure handrail extensions and TGSI's can be provided without protruding into the transverse pedestrian path of travel, compliant with AS1428.1.
9.3.	Ensure ramps that are adjacent to a corridor/walkway are recessed 400mm to ensure handrail extensions and TGSI's can be provided without protruding into the transverse pedestrian path of travel, compliant with AS1428.1.

9.4.	Ensure ramps have 1:14 gradient and appropriate level landings at top and bottom and at 9m. max intervals (see landings section).
9.5.	Ensure ramp landings are 1200mm min. length, (no change in direction) or 1500mm W x 1500mm min. L (internal splay permitted), for 90 degree turn, or 1540mm W x 2070mm L for 180 degree turn, compliant with AS1428.1. These min. landing dimensions are required clear of handrails and kerb rails.
9.6.	Ensure there are handrails on both sides of all ramps compliant with AS1428.1 (see below).
9.7.	Ensure curved ramps have 1500mm min. clear width with appropriate min. inside curve radius compliant with AS1428.1 fig. 20.
9.8.	Provide a suitable height wall (450mm min. height) or kerbing along open ramp sides, compliant with AS1428.1 fig 19: Kerbing to be between 65-75mm height above FFL, or; At least 150mm height above FFL. NB. The top of kerbing must not be within 75-150mm range above FFL to minimise risk of wheelchair footplate entrapment. If kerbing extends within 75-150mm range between it must be continuous with no gap greater than 20mm.
9.9.	The kerb to be suitably located in relation to handrail (and vertical supports if provided) i.e. Internal face of kerb in line with internal face of handrail or up to 100mm max. off-set inside the ramp, compliant with AS1428.1 fig. 19.
9.10.	Provide warning tactile ground surface indicators (TGSI's) at top and bottom of ramps in accordance with AS1428.4.1.
10. Doorway Threshold Ramps	
10.1.	Under BCA Part D2.15, an AS1428.1 threshold ramp is generally only permitted at external doorways i.e. connects to a road or open space clarification needs to be sought from PCA on this issue as there may be concessions for some building classifications e.g. 9a, 9c. 
10.2.	Ensure doorway threshold ramps have 1:8 gradient, 35mm max. height and 280mm max. length, compliant with AS1428.1 fig. 21. NB. Where ramp edges are not enclosed by walls/other side barrier, ensure ramp edges are splayed at 45 degrees.

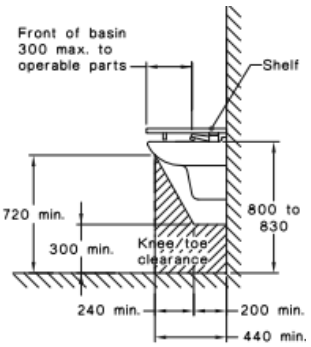
	
10.3.	There needs to be sufficient area available to satisfy AS1428.1 door circulation requirements in addition to threshold ramp dimensions e.g. an external door threshold ramp with side approach, requires 1240mm min. wide access way (no steeper than 1:40 gradient/crossfall) before base of the threshold ramp commences.
11. Step Ramps	
11.1.	Provide a step ramp leading to doorways as the height variation between internal and external RL's is greater than 35mm. NB. A level landing is also required to enable door circulation space, compliant with AS1428.1 fig. 31.
11.2.	Ensure step ramps have 1:10 gradient, 190mm max. height and 1900mm max. length. 
11.3.	Provide suitable barriers on step ramp sides (450mm min. height wall or balustrade and kerbing), or splayed edge if there is transverse pedestrian traffic.
11.4.	Ensure step ramps have appropriate level landings at top and bottom and at doorways, compliant with AS1428.1 (see Landings section).
11.5.	Ensure that consecutive step ramps (i.e. when landings between step ramps/ ramps overlap) are not used, compliant with DDA Access Code D3.11b.
12. Kerb Ramps	

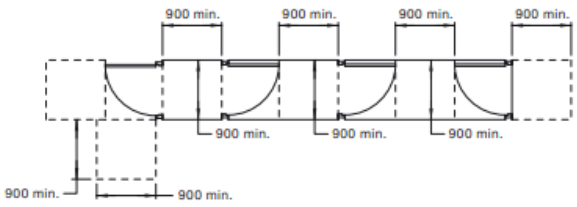
12.1.	Ensure kerb ramps have 1:8 gradient, 190mm max. height, 1000mm min. width and 1520mm max. length, compliant with AS1428.1 fig. 23 and 24. NB. Under AS1428.4.1 kerb ramps with gradients less steep than 1:8.5 are not generally detectable by people with vision impairment. 
13. Handrails	
13.1.	Ensure circular/elliptical handrails have 30-50mm diameter, with 270 degree clear arc around top of handrail (extending for 600mm min. height) compliant with AS1428.1 fig. 29. 
13.2.	Ensure handrails are installed at a consistent height between 865-1000mm height above step nosing or FFL ramp surface, compliant with AS1428.1 Clause 12d. NB. The specified height should allow for construction tolerance as outside of this range will be non-compliant.
13.3.	Ensure handrails are installed no less than 50mm away from an adjacent side wall, compliant with AS1428.1 Clause 12h.
13.4.	Ensure the handrail at the top of the stair extends 300mm (horizontal) past the step tread then turns 180 degrees downwards or returns fully to post/wall, compliant with AS1428.1 Clause 11.2e, fig. 26.
13.5.	Ensure the handrail at the base of the stair extends one tread width (at same angle) plus 300mm (horizontal) from last riser, then turns 180 degrees downwards or returns fully to post/wall compliant with AS1428.1 Clause 11.2d, fig. 28b.

13.6.	Ensure that the handrail at the top or bottom of a ramp extends (on the horizontal) 300mm past ramp then turns 180 degrees downwards or returns fully to post /wall, compliant with AS1428.1 Clause 10.3h, fig. 14 and 15.
13.7.	For situations (e.g. class 9a and 9c buildings) where domed buttons are permitted by BCA Part 3.8a and 3.8c to be used instead of TGSI's at stairs/ramps, ensure handrails have suitable tactile warning i.e. domed button (4-5mm height and 10-12mm diameter) provided on top of handrail, 150±10mm from handrail end compliant with AS1428.4.1.
14. Tactile Ground Surface Indicators (TGSI's)	
14.1.	Ensure that TGSI's are slip-resistant and have the following minimum luminance contrast values against back ground surface, compliant with AS1428.4.1: Integrated TGSI's (i.e. tiles) require 30% min. luminance contrast. Discrete TGSI's (i.e. buttons) require 45% min. luminance contrast. Composite TGSI's with 2 materials/colours requires 60% min. luminance contrast.
14.2.	Ensure that warning TGSI's extend across the full width of the path of travel and commence 300mm from the edge of stairs, ramps etc. compliant with AS1428.4.1.
14.3.	Ensure that warning TGSI's have between 600-800mm depth at open areas, or at landings (>3m length) and/or when handrail is discontinuous, compliant with AS1428.4.1.
14.4.	Ensure that warning TGSI's have between 300-400mm depth at enclosed landings (<3m) or when external handrail is discontinuous, compliant with AS1428.4.1.
15. Passenger Lifts	
15.1.	Passenger lifts travelling more than 12m require 1400mm W x 1600mm L min. dimensions (subject to DDA Access Code Section 4.4 concession for existing buildings).
15.2.	Passenger lifts travelling less than 12m (except stair platform lifts) require 1100mm W x 1400mm L min. dimensions.
15.3.	Stairway platform lifts (previous AS1735.7) require 810mm W x 1200mm L min. dimensions, compliant with BCA Part E3.6. NB. They cannot be used where another type of lift can be used or in high traffic public areas.
15.4.	Low-rise platform lifts (previous AS1735.14), require 1100mm W x 1400mm L min. dimensions compliant with BCA Part E3.6 and must not travel more than 1000mm height variation.
15.5.	Low rise, low speed constant pressure lifts, unenclosed type (previous AS1735.15), require 1100mm W x 1400mm L min. dimensions compliant with BCA Part E3.6 and must not travel more than 2m. They cannot be used high traffic public areas.

15.6.	Low rise, low speed constant pressure lifts, enclosed type (previous AS1735.15), require 1100mm x 1400mm min. dimensions compliant with BCA Part E3.6 and must not travel more than 4m. They cannot be used high traffic public areas.
15.7.	Any low rise lifts (previous part AS1735.14 or 15) that require constant pressure to be applied to the lift control buttons to either call and/or operate the lift (i.e. Press and Hold) are to include signage to explain operations of use.
15.8.	Small size low-speed automatic lifts (previous AS1735.16), require 1100mm W x 1400mm L min. dimensions and must not travel more than 12m.
15.9.	Ensure all passenger lifts (except stair platform lifts) have 900mm min. clear door opening, compliant with AS1735.12.
15.10.	Ensure all Low-rise platform and Low rise, low speed constant pressure lifts with manual door opening (previous AS1735.14, 15 and 16) have suitable door circulation areas compliant with AS1428.1.
15.11.	Ensure the centre line of standard lift call buttons in all lift lobbies are located at height of 900-1200mm and at least 500mm distance from an internal corner to be accessible to people using wheelchairs, compliant with AS1735.12.
15.12.	Ensure all passenger lifts (except stair platform and low rise platform lifts) include an internal lift control panel with centre line of control buttons located at a height no less than 700mm and no greater than 1250mm above FFL. The components of the floor level buttons shall possess Braille, raised tactile symbols and numbers, visual and auditory indicators, compliant with AS1735.12. Note: horizontal lift control panels are preferred over vertical panels for ease of reach as they generally can be positioned with control buttons within 900-1100mm FFL which is the preferred range for most wheelchair users (advisory/DDA).
15.13.	Ensure all passenger lifts (except stair platform and low rise platform lifts) include 2 x lift control panels when the width/length dimension is less than 1400mm.
15.14.	Ensure all passenger lifts (except stair platform and low rise platform lifts) include an internal handrail installed at a height 850-950mm. The handrail ends shall be no more than 500mm away from any operating device or button, compliant with AS1735.12.
15.15.	Ensure all passenger lifts (except stair platform lifts) include emergency hands free communication, including a button to alert call centre of a problem and a signal light to confirm that call has been received.
15.16.	Ensure all lifts serving more than 2 levels provides automatic audible information within the lift car to identify each level the lift stops.
15.17.	Ensure all lifts serving more than 2 levels provides appropriate visual and audible arrival signals of the lift car in all lift lobbies.

15.18.	Ensure all lifts serving more than 2 levels provides appropriate audible range and frequency, (between 20-80dbA at maximum frequency of 1500 Hz), compliant with DDA Access Code Table E3.6b.
15.19.	The lighting in all enclosed lift cars must be at least 100 lux, compliant with AS1735.12.
15.20.	All visible information to provide 30% min. luminance contrast to background surface.
16. Accessible Toilets	
16.1.	Provide 1 unisex accessible toilet at each bank of male/female toilets on each storey compliant with BCA Table F2.4a. NB. Where more than 1 toilet bank on each storey provide at 50% of banks.
16.2.	Ensure a balance of left and right handed WC pans within the building.
16.3.	Ensure accessible toilet is compliant with AS1428.1. This requires 2300mm x 1900mm clear area around pan with basin to sit outside the area (max. encroachment of 100mm at basin front).
16.4.	Ensure the centreline of the accessible toilet pan to be between 450-460mm from side wall.
16.5.	Ensure all accessible toilets have 800mm±10mm clearance between front of WC pan to rear wall.
16.6.	Ensure the height to top of pan seat to be between 460-480mm above FFL.
16.7.	Ensure the pan seat to have 30% luminance contrast against background tiled floor surface.
16.8.	Provide grabrails on wall of toilet at a height of between 800-810mm (to top of grabrail) from FFL. NB. If concealed cistern used, WC grab-rails are to be continuous across side and rear walls. If exposed cistern used, rear grabrail to commence 50mm max. from cistern edge.
16.9.	Provide angled toilet backrest (350-400mm W x 150-200mm H) installed between 120-150mm height from top of pan seat and 50mm max. distance from seat bolt hole. NB. No toilet lid to be provided as this impedes use of back rest.
16.10.	Ensure the centreline of the basin to be at least 425mm from side wall.
16.11.	The height of the basin to be between 800-830mm from FFL with lever action taps and insulation of water pipes.

16.12.	Provide basin with a 430-440mm min. depth projection and suitable wheelchair knee/toe height clearance, compliant with AS1428.1 fig. 44 below: 
16.13.	The front of basin to be 300mm max. distance to the operable part of taps.
16.14.	Provide separate fixed shelf (120-150mm W x 300-400mm L) next to wash basin, installed at 900–1100mm above FFL.
16.15.	Toilet roll holder to be installed on adjacent wall to toilet at 600mm centre-line height from FFL within 300mm max. length from front of pan and no closer than 50mm to grabrail. The toilet roll holder type to have an exposed toilet roll for ease of use.
16.16.	Provision of soap dispenser, hand drier or paper towel dispenser at a dispensing height, between 900-1100mm. Ensure these fixtures are within arm's reach when directly in front of the wash basin.
16.17.	Provide mirror, with base installed at 900mm max. above FFL.
16.18.	1 x clothes hanging device to be installed between 1200-1350mm from FFL and at least 500mm from an internal corner.
16.19.	Door operation force to be lightweight (20N max.) suitable for people with disabilities.
16.20.	Door to include an in-use indicator and a bolt/catch that can be opened from outside in an emergency. If snib turn is used the handle to be 45mm min from centre.
16.21.	The baby change table cannot impede into required circulation space (when folded up). The top of table to be installed at 820mm height with 720mm min. under bench clearance above FFL, compliant with AS1428.1.
16.22.	Light switches to be installed between 900-1100mm above FFL and 500mm min. from internal corner.
16.23.	GPO's to be installed between 600-1100mm above FFL and 500mm min. from internal corner
16.24.	Rocker action/toggle type switches at least 30mm x 30mm dimensions are required to assist people with dexterity impairment.

17. Accessible Showers	
17.1.	Ensure all accessible showers have shower rail/curtain installed.
17.2.	Ensure the height of the top of shower seat to be between 470-480mm FFL.
17.3.	Provide a horizontal grab rail (660mm min), to be placed beneath the vertical shower support rail, between 390-400mm from side wall, installed between 800-810mm height from FFL.
17.4.	Provide vertical shower support rail to start between 1000-1100mm from FFL. The top of the shower support rail to finish between 1880-1900mm FFL. The rail to be placed between 580-600mm from the side wall.
17.5.	Ensure the shower taps and soap holders to be placed between 900-1100mm from FFL. Ensure the taps/soap holders are 50mm min. width from the shower support rail and no further away than 800mm from side wall.
17.6.	Ensure the height of the hose wall outlet to be 700mm height above FFL, compliant with AS1428.1 fig. 48 to ensure suitable hose length when showering. To also include suitable back-flow prevention device.
17.7.	The 2 x clothes hanging devices required outside the shower recess to be between 400-600mm length from the seat, installed between 1200-1350mm from FFL.
18. Ambulant Cubicles	
18.1.	Provide an ambulant cubicle for people with disabilities in male/female toilet banks, (adjacent to an accessible toilet facility) to satisfy the DDA Access Code.
18.2.	Provide minimum 900mm x 900mm circulation area between successive door swings in airlocks/vestibules on path of travel leading to ambulant toilets compliant with AS1428.1 fig. 34. 
18.3.	Provide minimum 900mm x 900mm circulation area outside the ambulant cubicles compliant with AS1428.1 fig. 53b.
18.4.	The cubicle to be between 900-920mm clear width with WC pan centred (i.e. 450-460mm set out).
18.5.	Ambulant cubicles to have 900mm x 900mm clear area in front of (standard projection from wall) WC pan and clear of door swing.

18.6.	Ensure ambulant cubicles have 700mm clear width cubicle door with 900mm x 900mm clear area outside the door.
18.7.	Ensure the height to top of pan seat to be between 460-480mm above FFL.
18.8.	Ambulant cubicle door needs in-use indicator and bolt/catch that is able to be opened from outside (in emergency). If snib catch used, the handle to be 45mm min. length from centre.
18.9.	Grabrails provided on both sides of cubicle at 800-810mm height (to top of grabrail) from FFL.
18.10.	Toilet roll holder to be placed at 700mm max. height from FFL and 300mm max. distance from front of pan on adjacent wall, no closer than 50mm to grabrails. The toilet roll holder type to have exposed toilet roll for ease of use.
18.11.	Clothes hook to be installed between 1350-1500mm from FFL on the back of door.
19. Hearing Augmentation	
19.1.	Provide hearing augmentation in the following areas if an inbuilt amplification system is installed (except one used for emergency warning systems only): Rooms in Class 9 buildings; Auditoriums, conference and meeting rooms, judicatory, and; Service counters screened to the public (e.g. reception, ticket/teller booths).
19.2.	Hearing loops are required to at least 80% of floor area with inbuilt amplification system. These areas are required to be signed.
19.3.	For Class 9b buildings, any screen or scoreboard that can display public announcements, to be capable of supplementing the public address system (excluding emergency warning only).
20. Signage	
20.1.	All male, female and accessible toilet identification signs to include appropriate raised tactile pictogram, raised text (in title case) and Braille. The signage to be located on the wall, adjacent to latch side of door between 1200-1600mm height from FFL (with single lines of tactile text located between 1250-1350mm above FFL).
20.2.	Entry doors to airlocks to sanitary facilities also require raised tactile pictogram, raised text (in title case) and Braille to identify each sanitary facility within.
20.3.	Accessible toilet sign to include international symbol of access (wheelchair logo) in white on blue background, compliant with AS1428.1.

	Sign to also include 'LH' or 'RH' to indicate a left-hand or right-hand transfer onto toilet pan. Min. font size to be 20mm san serif, compliant with AS1428.1.
20.4.	All male and female ambulant cubicle signs to include appropriate raised tactile pictogram, raised text (in title case) and Braille. The signage to be located on the ambulant cubicle door between 1200-1600mm height from FFL (with single lines of tactile text located between 1250-1350mm above FFL).
20.5.	Provide directional signage, e.g. at any toilet banks (without accessible toilet) to show path of travel to nearest accessible toilet and/or at the non-accessible entry to show path of travel to the accessible entrance. The directional signage for these items to include: appropriate raised directional arrow, raised tactile pictogram, raised text (in title case) and Braille and international symbol of access, compliant with AS1428.1. The signage to be located on the wall, adjacent to latch side of door between 1200-1600mm height from FFL (with single lines of tactile text located between 1250-1350mm above FFL). If the sign can be temporarily obscured consideration for additional overhead directional signage located above 2m height (advisory).
20.6.	Ensure that all signage is designed to be detectable, with raised symbols, providing 30% luminance contrast with sign background that in turn contrasts with background wall surface.
20.7.	Areas with hearing augmentation require identification signs that include international symbol of hearing (ear logo) in white on blue background, compliant with AS1428.1 and appropriate raised tactile pictogram, raised text (in title case) and Braille. These are required: At doorway entrances to room (latch side of door between 1200-1600mm height from FFL) or if an open area suitably located to designate the area and; Within the room/area to identify the hearing augmentation system, the area covered and how to use and/or gain assistance.

ADVISORY ISSUES
The following recommendations do not have impact on the building sign off under the DDA Access Code for Buildings or the BCA. These are advisory recommendations in line with the intent and objectives of the DDA to ensure equitable and dignified access for people with disabilities.
Paths of Travel
Locate any escalators/travellators/moving walks so that moving handrail section is suitably recessed (and not exposed) to/from transverse pedestrian traffic to improve safety and assist people with vision impairment entering/approaching e.g. by nib wall, balustrade
Provide 30% min. luminance contrast between key surfaces to assist people with vision impairment in orientation/way-finding and improve safety e.g. between wall and floor finishes, between ramps/stairs and adjacent flooring, between handrails and walls, between door hardware and doors etc.
Within major public facilities (e.g. shopping centres, major train stations, aquatic facilities, large sporting/recreational complexes, major cultural facilities, civic centres, airports, hospitals etc.), consider providing a “Changing Place Toilet” in addition to accessible toilets to assist people with disabilities and their carers that are unable to use the standard facilities. The design and size of the “Changing Place Toilet” to comply with the design specifications outlined in the Changing Places Information Kit, dated February 2014.
Furniture/Work Stations
Locate reception desks/service counters with clear direct line of sight to key access pathways e.g. main entry, accessible turnstiles, lift lobby.
Provide reception desks/service counters with a section lowered to a height no greater than 870mm FFL. Ensure the counter has appropriate foot (290mm) knee (650) clearance. The counter shall be at least 800mm in width.
Ensure office furniture is moveable/portable to allow for any future work place adjustments. The furniture will therefore be better able to create the required/appropriate circulation spaces for a person with a disability.
Ensure all work stations can be technically height adjusted within range of 700-850mm. If not all are adjustable, consideration for a proportion of workstations to be provided as adjustable with same dimension and finish as others to assist in reconfiguration for future work-place adjustment.
Provide 30% min. luminance contrast between horizontal and vertical work surfaces to assist people with vision impairment.
Provide a range of seating types within waiting areas including some chairs with back and armrests to assist people with ambulant disabilities and the elderly.

Kitchen/Utility Areas
Provide 1550mm min. width between utility and kitchen benches
Kitchen benches along walls are preferred to island benches for people with vision impairment for improved safety due to less exposed edges
If applicable, ensure the operative part of any hot/chilled water unit is no greater than 1100mm above the FFL. The unit to be no 300mm max. distance from the front edge of kitchen bench.
Consideration to be given to provide clearance underneath kitchen bench areas for a person using a wheelchair. This 'area' could contain benches that could be easily removed when the need becomes apparent (advisory).
Lighting
Ensure the min. illumination levels are compliant with AS1428.2, in particular: Passageways and Pathways 150 lux Accessible Toilets 200 lux Reception Counters 250 lux General Displays/Signage 200-300 lux
Provide even lighting levels on installed signage to minimise glare and improve legibility.
Hearing Augmentation
Absorbent materials/finishes can assist in reducing reverberation to improve general acoustics and use of hearing augmentation systems e.g. using acoustic tiles, furniture, carpet, curtains, bulletin/felt boards etc to minimise hard surfaces that reflect sound.
Provide appropriate, even lighting with minimal glare, particularly at reception/information counters to assist people with hearing impairment lip-read/communicate with staff e.g. suitable luminaire direction and/or use of diffuser, screening to windows/glazing (tinting, blinds, louvres).
Provide hearing loops at all service counters (with or without screening), lift points, communication points, (e.g. intercoms to buildings) and warning systems, compliant with AS1428.5 (advisory) to enable all people making enquiries to clearly hear staff.
When multiple counters in one location provide the same service, ensure 20% min. of each class of counter provides a hearing loop system.
When hearing loops are provided within a room provide relevant signage (to identify type of system, how to use or where to seek assistance or receivers), compliant with AS1428.5. This signage to be located in the first third of the room, when facing speaker.

All public payphones to have an adjustable volume control to increase level of sound at least 20dB above normal sound.
Accessible public payphones to have TTY capabilities and be signed with international symbol for deafness, compliant with AS1428.1 and .5.
Consideration to provide computer-aided real time captioning (CART) systems, and/or access to captioning on television sets/video display as required in addition to hearing loops systems at public meeting areas to enable deaf participants to effectively communicate.
Emergency Egress
Ensure all 850mm clear widths (920mm door leaf) to all fire stair and egress doors.
Where possible provide level or ramped exits from the building, compliant with AS1428.1.
Provide fire refuge areas within fire-isolated stairs (e.g. 1 x wheelchair footprint requires at least 800mm W x 1300mm L area) outside the path of travel and clear of fire hydrants. Inclusion of an accessible intercom, located with operative components between 900-1250mm above FFL and 500mm from any internal corner is recommended for communication purposes.
Provide door circulation on the external corridor side of fire-egress doors (and where achievable also on the internal side), compliant with AS1428.1.
Should the provision of any emergency systems be installed within the building, the systems should include audible and visual warnings indicators to assist people with sensory disabilities e.g. strobe lights (incorporating 2 colours, preferably blue/orange or similar), visual messages on a computer system, people with hearing augmentation being provided with a vibrating pager.
Consideration for accessible identification signage within fire-isolated stairs/ramps to assist people to orient themselves when egressing or seeking assistance e.g. the sign to state “You are on Level” followed by the relevant floor number with raised tactile text and Braille.
Consideration to provide fire-isolated passenger lift for egress purposes in line with BCA performance requirements. NB. For this situation lift lobby areas would also require a suitable level of fire and smoke protection to ensure safe waiting area for lifts to arrive.
The client shall make preparation of an emergency management plan which would include the use of a fire warden, to identify strategies to facilitate emergency egress for people with disabilities.
External Domain
Provide an accessible path of travel to all key features and facilities located within the park, compliant with AS1428.1.
Provide suitable signage and information indicating the accessible path of travel and accessible facilities provided within the park.

Ensure pathways less than 1800mm width have passing spaces (1800mm x 2000mm) every 6m to allow 2 people who are using wheelchairs or two people with prams to pass each other.
All walkways, ramps and landings to be designed with 1:40 max. crossfalls and suitable drainage so that water does not accumulate on the surface and become a slip hazard.
Provide regular rest seating between key facilities at distances no greater than 60m max to assist people with ambulant disabilities and the elderly compliant with AS1428.2.
On long stair and ramp flights, consideration to provide increased landing areas with rest seating adjacent to path-of travel for people with older people with reduced energy levels.
All stairs and ramps to include handrails on both sides, and tactile ground surface indicators (TGSI's) compliant with AS1428.1 and AS1428.4.1. A consistent approach to these provisions will assist in independence and way-finding for people with disabilities.
All stair treads to include contrasting step nosing, compliant with AS1428.1.