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Job No: IAC-454

Thursday, 3 May 2018

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Reference: **ACCESS CONSULTANCY**
BOWRAL AND DISTRICT HOSPITAL
STATE SIGNIFICANT DEVELOPMENT

Attention: Mr David Blackett

Dear Sir,

Thank you for inviting iAccess Consultants to undertake this access assessment of the design prepared for the Bowral and District Hospital project.

This access report has been structured in accordance with the provisions of the Disability (Access to Premises) Standard 2010 as well as the provisions of the relevant Australian Standards.

Detailed documentation addressing the specific details and requirements of access legislation, codes and standards will need to be documented in the Design Development documentation.

A number of issues have been identified which will need to be addressed by the project team in the finalisation of the documents for this project.

This report is to be read in conjunction with the markup of the plans appended to this report.

Please do not hesitate to contact us should you wish to discuss any aspect of this Access Report.

Yours sincerely,

RICHARD SEIDMAN

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Document control

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iAccess Consultants is a division of Seidman & Associates Pty Ltd ABN 37 002 648 615

ACCESS REPORT

BOWRAL AND DISTRICT HOSPITAL
STATE SIGNIFICANT DEVELOPMENT

Prepared by

iAccess Consultants

A division of Seidman & Associates Pty Ltd

ABN 37 002 648 615

7 August 2016

Revision [C]

3 May 2018

Contents

Document control **2**

1. Executive Summary **7**

1.1. Site Location 8

1.2. Legislative framework 9

1.3. Reviewed documentation 9

1.4. Abbreviations 9

2. ACCESSIBILITY PROVISIONS **10**

2.1. Introduction 10

2.2. Part A4 NCC Building Classification 10

2.3. NCC D3.1 – Access for people with a disability 10

2.4. NCC D3.2 Access to Buildings - Requirements 16

2.4.1. NCC D3.2 Access to Buildings - Compliance criteria to be satisfied 17

2.5. Premises Standard Part 2.1 - Affected Part 19

2.6. Floor or Ground Surfaces 20

2.6.1. Slip Resistance 20

2.6.2. Carpet 21

2.6.3. Floor transitions 21

2.6.4. Recessed Matting 22

2.7. Walkways, Ramps and Landings 23

2.7.1. 1:14 Ramps 23

2.7.2. Kerb Ramps 23

2.8. Stairways 25

2.8.1. Stairs External 25

2.8.2. Fire Stairs 25

2.8.3. Circulation Stairs 26

2.9. Signage and wayfinding 28

2.10. Handrails 29

2.11. Lift 30

2.12. Visual Indicators on Glazing 32

2.13. Furniture and Fitments 35

2.13.1. Counters 35

2.13.2. Tables 35

2.13.3. Seating 36

2.13.4. Waiting Areas 37

2.13.5. Lockers 37

2.13.6. Beverage Bays 37

2.14. Circulation at doorways 39
2.14.1. General 39
2.14.2. Clear Door Width 39
2.14.3. Successive Doorways 39
2.14.4. Door Controls 39
2.14.5. Circulation at Doorways 40
2.15. Doorways - Luminance Contrast 41
2.16. Switches 42
2.16.1. General 42
2.16.2. Video Intercoms 42
2.16.3. Access Control 42
2.17. Carparking – Setdown area 44
2.18. Carparking Calculation 44
2.19. Threshold Ramps - Design intent 45
2.20. Hearing augmentation 46
2.21. Accessible Sanitary Facilities 48
2.21.1. Wall Reinforcement 49
2.21.2. Shower Compartment 50
2.21.3. Hand-basins 51
2.21.4. Toilet Roll Dispensers 51
2.21.5. Summary 52
2.22. Ambulant Sanitary Facilities 54
2.23. Signage 55
2.23.1. Statutory Signage Requirements 55
2.23.2. Entrances 56
2.23.3. Exit Signage 56
2.23.4. WC Signage 57
2.23.5. Hearing Augmentation Signage 57
2.23.6. General Signage Information – Maintenance 58
2.23.7. General Signage Information – Sizing 58
2.23.8. Mounting Heights 60
2.23.9. Luminance & Colour Contrast 61
2.24. Lighting 62
2.25. Way finding strategy 62
2.26. Emergency evacuation 62
2.27. NCC Clause D3.4 – Areas where accessible access is excluded 62

3. ENABLING WORKS 63

3.1. Accessible path of travel – Bowral Street 63

3.2. Access to ED 64
3.3. Modifications to Ramp to Pathology 66
3.4. External Steel Exit Stair 67
4. CONCLUSION 68

1. Executive Summary

This access report has been prepared based on the documentation prepared for the expansion of the Bowral and District Hospital. It is proposed to develop new facilities in the northeast corner of the existing Bowral and District Hospital Campus.

For the purpose of this access assessment we have limited our assessment to the “affected part” as indicated by the hatched area nominated at Figure 1 and have not extended our access investigation into the other buildings on the site other than the common corridor link located at ground floor level of the Milton Park Building, Administration Building and the Imaging Building. We have reviewed the ramp link connecting the Imaging Building to the Bowral Private Hospital. The upper levels of the Milton Park and Administration buildings are serviced by existing lifts.

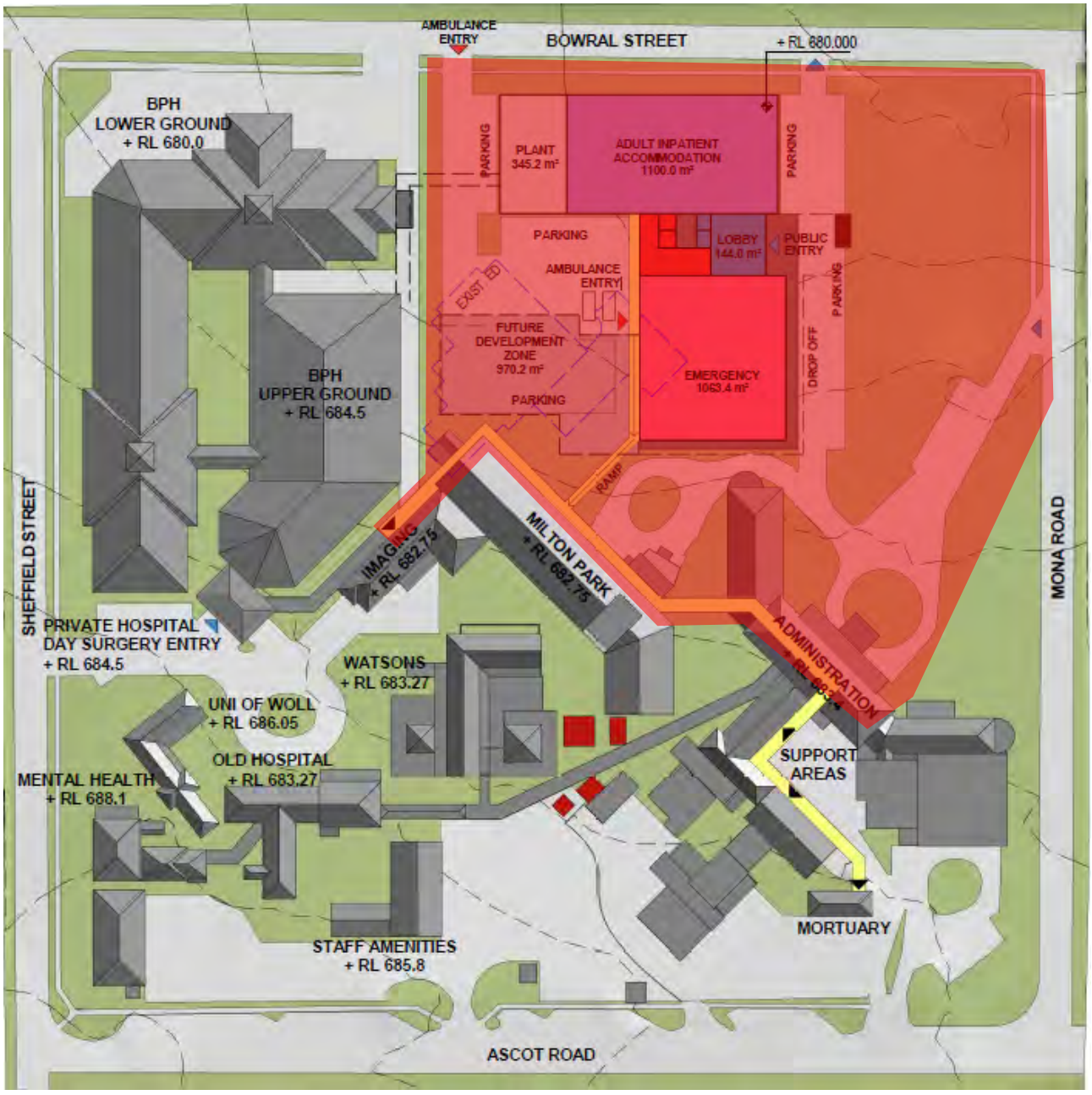


Figure 1 Extent of the scope of this access assessment

This access report identifies the accessible requirements for this facility.

1.1. Site Location

The site is located on the eastern side of the township of Bowral. The site is bounded by Bowral street to the north, Mona Road to the east, Ascot Road to the South and Sheffield Street to the west. The Bowral Private Hospital is also located on the northwest corner of the Bowral and District Hospital Campus.

The site is not level with a cross fall across the site from south to north. The image following indicates an aerial view of the existing hospital site.

Figure 2 Location Plan Source Google Maps

The site is serviced by private vehicles, taxis, community transfers and scheduled bus services. A bus stop for the 814 & 815 bus routes is located on Bowral Street which is also proposed to be the new main entrance to the Hospital.

Level accessible access is proposed to be provided from the bus stop to the Principal Pedestrian entrance of the Hospital.

The hospital site is large and there are secondary access points onto the hospital site. The assessment of these secondary access points is excluded from this access assessment as they are not part of the affected part of works.

1.2. Legislative framework

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.

In this report, iAccess will comment on compliance with best practice guidelines in support of the scheme, including the NCC 2016 (the applicable NCC for the project), with reference to the Disability (Access to Premises - Buildings) Standards 2010 and additional Accessibility Standards in draft and current Australian Standards, to meet the spirit and intent of the DDA and to ensure best practice principles are applied for this project.

The technical guidance utilised as part of the assessment process includes:

- Building Code of Australia 2016
- Disability (Access to Premises - Buildings) Standards 2010
- AS 1428.1:2009 General requirements for Access - New Building Work
- AS 1428.2:1992 Enhanced and Additional Requirements - Buildings and Facilities
- AS 1428.4.1:2009 Design for Access and Mobility - Means to Assist the Orientation of people with Vision Impairment - Tactile Ground Surface Indicators
- AS2890.6:2009 Parking Facilities - Off-street Parking for People with Disabilities
- Australasian Health Facility Guidelines (2010)

1.3. Reviewed documentation

This access report relates to the design drawings prepared by MSJ Architects.
130443-MSJ-AR-DWG-MW10001[1]
130443-MSJ-AR-DWG-MW10002[1]
130443-MSJ-AR-DWG-MW10003[1]
130443-MSJ-AR-DWG-MW10004[1]
130443-MSJ-AR-DWG-MW10005[1]
130443-MSJ-AR-DWG-MW10006[1]

1.4. Abbreviations

The following abbreviations have been adopted in the compilation of this access report

NCC	National Constriction Code
Premises Standard	Disability (Access to Premises – Buildings) Standard 2010

2. ACCESSIBILITY PROVISIONS

2.1. Introduction

This section of the access report has been provided as a key technical reference point for all stakeholders in respect of formal compliance required with the NCC and Premises Standards.

The guidance is included as part of the initial feedback and provides a means of identifying key performance specification requirements, which also provides ongoing reference to relevant supporting guidance, principally the AS1428 series on design for access and mobility.

The accessibility performance requirements are identified in the premises standard and the NCC as being:

DP1 Performance requirement
Access must be provided, to the degree necessary, to enable:
(a) people to:
(i) approach the building from the road boundary and from any accessible carparking spaces associated with the building; and
(ii) approach the building from any accessible associated building; and
(iii) access work and public spaces, accommodation and facilities for personal hygiene; and
(b) identification of accessways at appropriate locations which are easy to find.

DP4 Performance requirement
Exits must be provided from a building to allow occupants to evacuate safely, with their number, location and dimensions being appropriate to:
(a) the travel distance; and
(b) the number, mobility and other characteristics of occupants; and
(c) the function or use of the building; and
(d) the height of the building; and
(e) whether the exit is from above or below ground level.

DP6 Performance requirement
So that occupants can safely evacuate the building, accessways to exits must have dimensions appropriate to:
(a) the number, mobility and other characteristics of occupants; and
(b) the function or use of the building.

DP8 Performance requirement
Carparking spaces for use by people with a disability must be:
(a) provided, to the degree necessary, to give equitable access for carparking; and
(b) designated and easy to find.

DP9 Performance requirement
An inbuilt communication system for entry, information, entertainment, or for the provision of a service, must be suitable for occupants who are deaf or hearing impaired.

2.2. Part A4 NCC Building Classification

The NCC Building Classification of the new Hospital is NCC Building Class 9: a building of a public nature—

(a) Class 9a — a health-care building

2.3. NCC D3.1 – Access for people with a disability

Part D3 of the NCC and Premises Standards prescribes the minimum requirement for the provision of accessible access unless exempted by Clause D3.4 of the Premises Standard.

Accessible access for people with disabilities is required through the principal pedestrian entrance and throughout the building in accordance with Table D3.1.

Affected Path of Travel

The development of the new facilities will provide a new main entry to the Bowral and District Hospital. Vehicle access to the new Main Entry will be via the driveway access from Mona Road to the setdown area adjacent to the main entry indicated by the red dashed line. Limited public parking will be available adjacent to the entry area. An undercover parking area is proposed adjacent to the ambulance entry and Hospital Road located to the west of the site. Access to the ambulance entry and the parking structure is from Bowral Road.

Pedestrian access to the site and the accessible path of travel from the boundary to the Principal Pedestrian Entry is proposed to be from the bus stop located on Bowral Road. The pedestrian accessible path of travel is indicated by the blue dashed line.

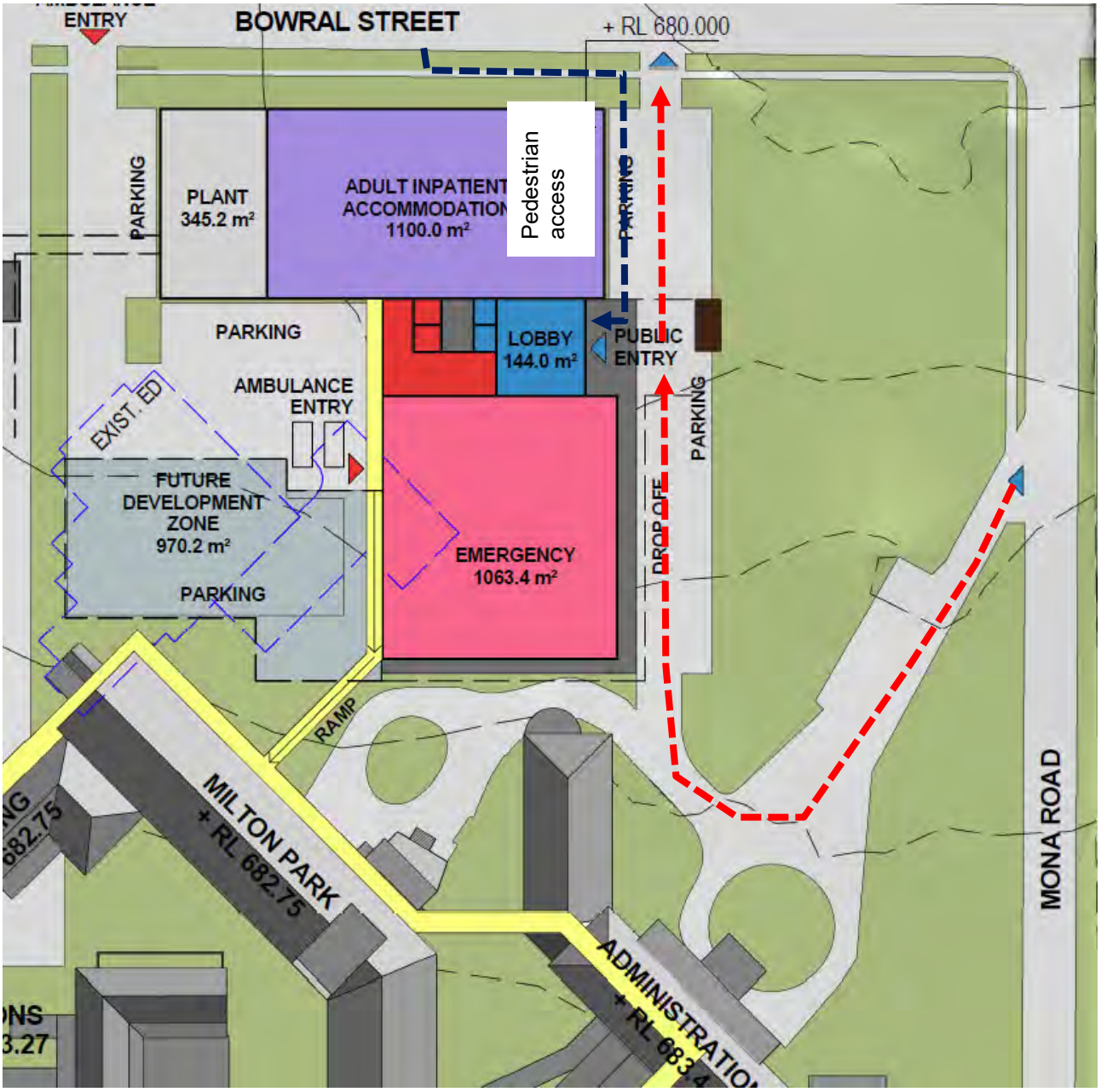


Figure 3 Access to the site

It is not intended to upgrade the accessible access to the entries to the existing Administration or Milton Park Buildings as no works are proposed to either of these buildings and accessible access to the hospital will be via the new entry being provided as part of these works.

The images following indicate the condition and configuration of the existing Administration and Milton Park building entries.

Figure 4 View of existing entry to the existing Administration building

Figure 5 View of existing entry to the existing Milton Park building

The works required to upgrade both these entry points are:

A. Administration Building – entry steps

- 50-75mm non slip nosing to goings – Clause 11.1(f) & (g) of AS1428.1:2009
- Slip resistance to goings – NCC Table D2.14
- Provision of compliant handrails and handrail extensions – Clauses 11.2 and 12 of AS1428.1:2009
- Installation of dome head button installation to handrails – Refer Figure 5 of AS1428.2:1992 & concession granted at NCC Clause D3.8(c) based on compliant handrails being installed
- Lighting levels on goings – Min 150 lx as per Clause 19 of AS1428.2:1992

B. Milton Park – entry steps and ramp

- 50-75mm non slip nosing to goings – Clause 11.1(f) & (g) of AS1428.1:2009
- Slip resistance to going and ramp – NCC Table D2.14
- Installation of dome head button installation to handrails of stairs and ramps – Refer Figure 5 of AS1428.2:1992 & concession granted at NCC Clause D3.8(c) based on compliant handrails being installed
- Lighting levels on goings and ramp – Min 150 lx as per Clause 19 of AS1428.2:1992
- Modification of existing handrails to include handrail extensions to the ramp.

Drop off area – Main Entry

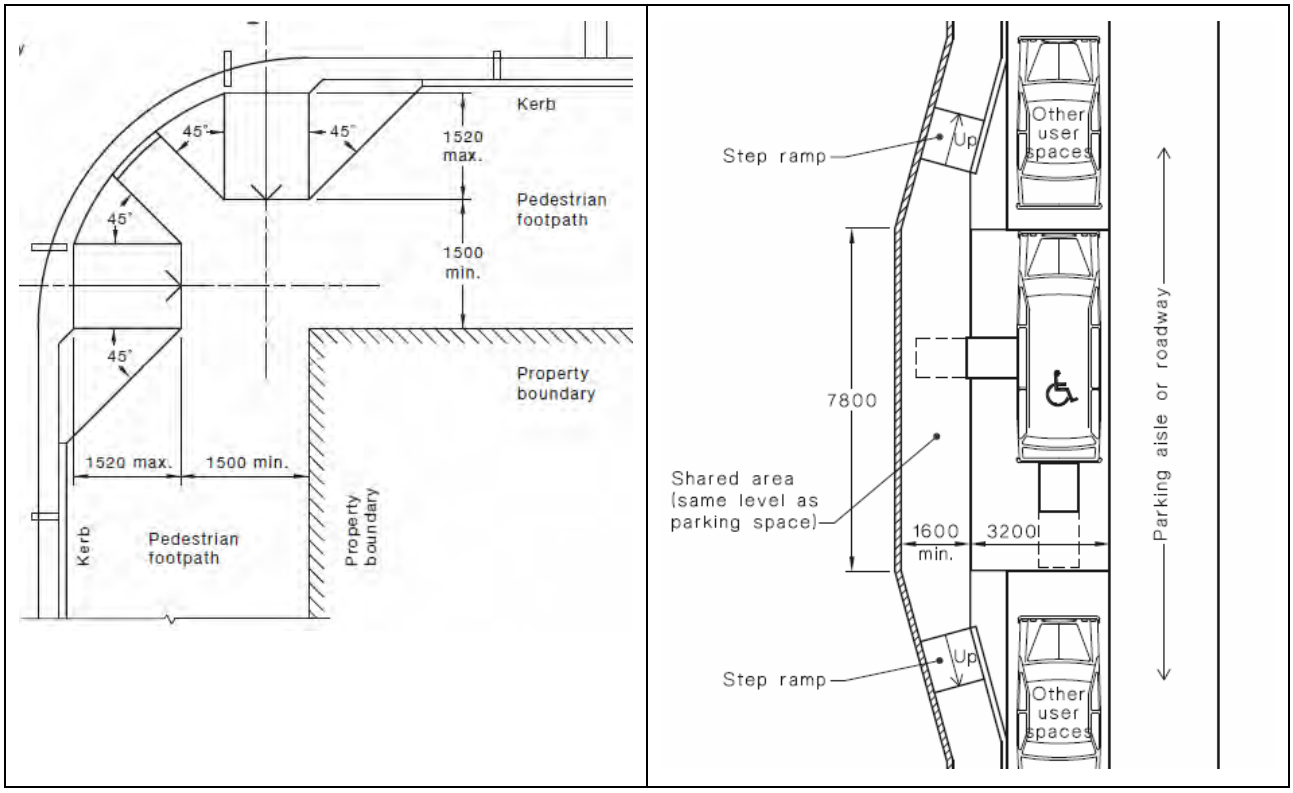
The driveway leading to the main entry will be required to be addressed. The images following indicate the existing condition of the existing drive which will form part of the approach to the new main entry.



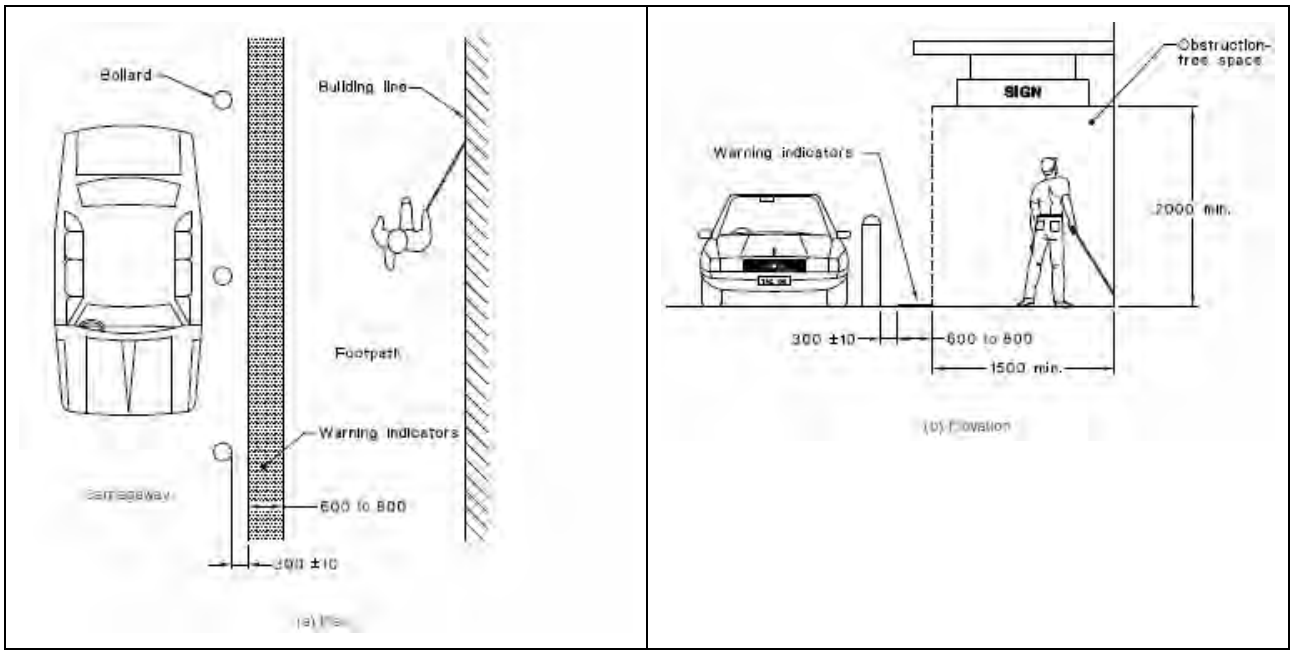

The detailing of the drop off / set down zone requires careful consideration when addressing accessibility.

If the drop off / set down area is constructed with kerb and gutters, then kerb ramps compliant to the provisions of Clause 10.7 of AS1428.1:2009 will need to be provided. This will require the width of the footpath along the building line to have a clear width of 3020mm from the face of the kerb to the face of the building alignment. (refer to extract from the Standard following).

It will also be necessary to provide an accessible setdown space as part of the setdown zone. The dimension of the parallel accessible space is 7.8 x 3.2m with a 7.8 x 1.6m shared zone as nominated at Clause 2.2.2 of AS2890.6:2009. A kerb ramp should be positioned as close as possible to the rear of the accessible setdown parking space. (refer to extract from the Standard following).

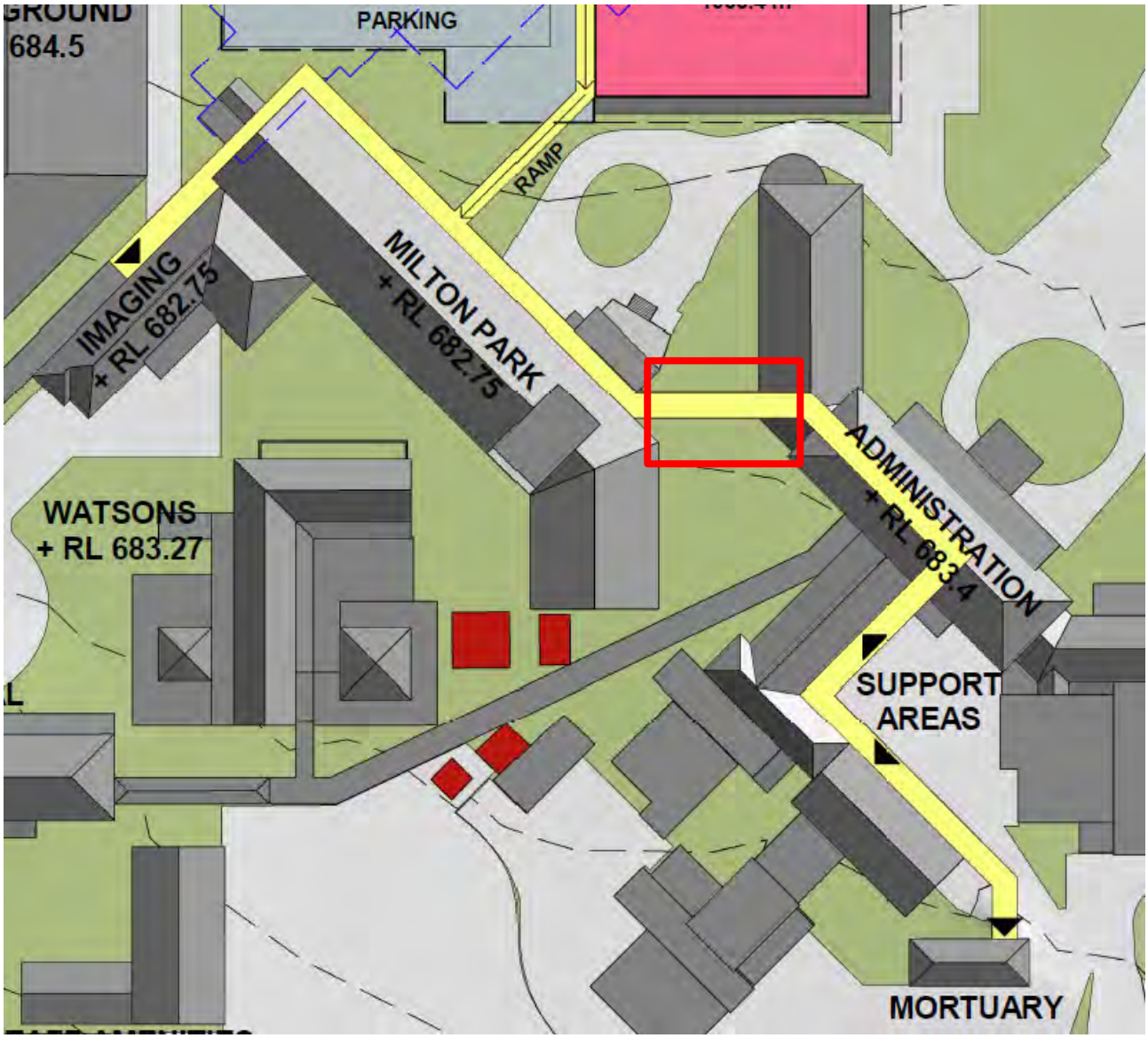


If the drop off zone is at the same grade as the walkway, then the provisions of Clause 2.6 of AS1428.4.1:2009 will come into effect. The requirements to be satisfied relate to the provision of TGSIs and bollards along the interface of the carriageway and the pedestrian walkway. (refer to extract from the Standard following).



Path of Travel

As part of our site visit on 29 July 2016 we walked the corridors that will form the path of travel connecting the new facility with Imaging, The Milton Park Building, Administration, Support areas and the Mortuary as indicated by the yellow path on the extract of the plan provided.



The pathway provides accessible connection from the new facility to all areas. The section of the pathway boxed in red indicates a ramped section where the gradient of sections of the pathway is steeper than 1:14.

The photos following indicate the existing condition of this walkway connection between the Milton Park Building and the Administration Building. The structure above this walkway is a single storey building and will probably be removed as part of future development of the site.

It is not proposed to request that this section of the path of travel be upgraded as it is expected that the new facility will reduce the frequency of use of this connection point.

Connection between the Milton Park building and the Administration Building.

Connection between the Milton Park building and the Administration Building.

Connection between the Milton Park building and the Administration Building.

Connection between the Milton Park building and the Administration Building.

Access Assessment

The following table outline the general building access requirements that iAccess Consultants have applied for this project.

CLASS OF BUILDING	NCC TABLE D3.1 - ACCESS REQUIREMENTS
Class 9a	To and within all areas normally used by the occupants.

Figure 6 NCC 2016 / Premises Standards Access Requirements (Table D3.1)

2.4. NCC D3.2 Access to Buildings - Requirements

NCC Clause D3.2 requires

(1) An accessway must be provided:
(a) to a building required to be accessible;
(b) from the main points of a pedestrian entry at the allotment boundary; and

(i) from another accessible building connected by a pedestrian link; and
(ii) from any required accessible carparking space on the allotment.

(2) In a building required to be accessible, an accessway must be provided through the principal pedestrian entrance, and:

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

(b) in a building with a total floor area more than 500 m2, a pedestrian entrance which is not accessible must not be located more than 50 m from an accessible pedestrian entrance; except for pedestrian entrances serving only areas exempted by clause D3.4.

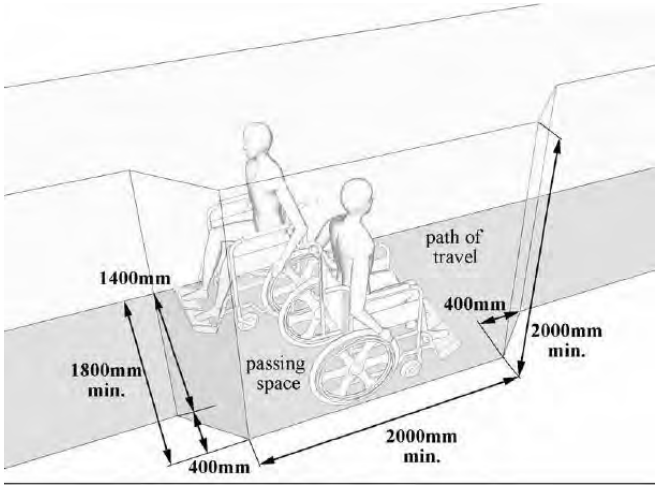
2.4.1.NCC D3.2 Access to Buildings - Compliance criteria to be satisfied

The design requirements of the accessible path of travel are:

AS1428.1:2009 Cl 6.2 The minimum unobstructed height of a continuous accessible path of travel shall be 2000 mm or 1980 mm at doorways

AS1428.1:2009 Cl 6.3 The minimum unobstructed width of a continuous accessible path of travel shall be 1000 mm (NCC Clause D1.6(b)(ii) requires 1.8 m in a passageway, corridor or ramp normally used for the transportation of patients in beds within a treatment area or ward area)

AS1428.1:2009 Cl 6.4 Passing space for 2 persons using wheelchairs shall be a minimum width of 1800 mm for a minimum length of 2000 mm



AS1428.1:2009 Cl 6.5.1 The space required for a wheelchair to make a 60° to 90° turn shall have a gradient no steeper than 1 in 40 and shall be not less than 1500 mm wide and 1500 mm long in the direction of travel. – Information to be provided as part of the Construction Certificate documentation,

AS1428.1:2009 Cl 6.5.3 The space required for a wheelchair to make a >90° to 180° turn shall be not less than 2070 x 1540mm,

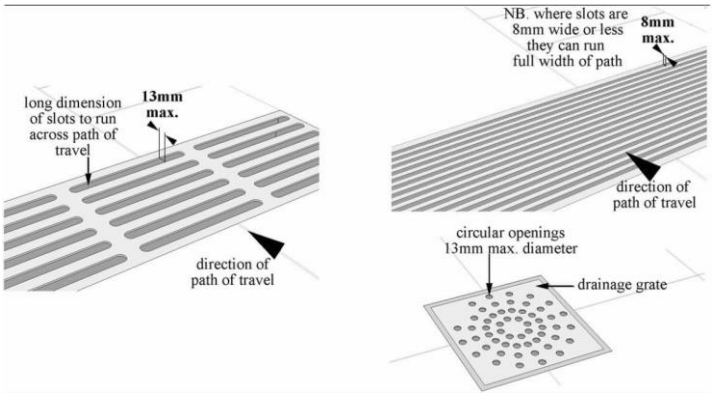
AS1428.1:2009 Cl 7.1 A continuous accessible path of travel and any circulation spaces shall have a slip-resistant surface. The texture of the surface shall be traversable by people who use a wheelchair and those with an ambulant or sensory disability.

Table 3B of SAA HB198 nominates the slip resistance ratings to be satisfied for various conditions.

AS1428.1:2009 Cl 7.2 The construction tolerances between the abutting pavement units will need to be 0±3 mm – Information to be provided

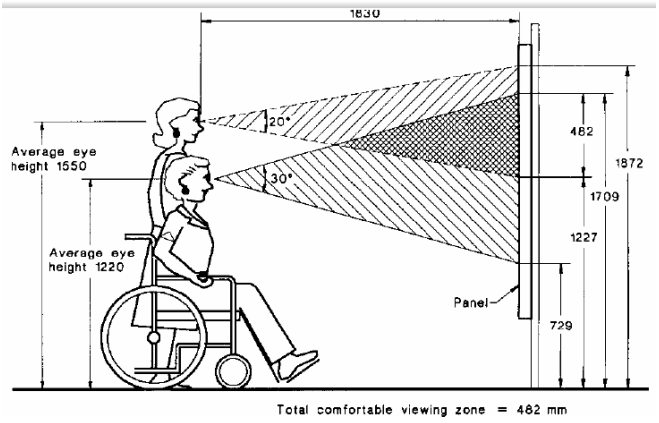
AS1428.1:2009 Cl 7.3 The construction tolerances between the abutting pavement units will need to be 0±3 mm – Information to be provided

AS1428.1:2009 Cl 7.5 It is likely that drainage grates will be located within the external pavement areas along the accessible path of travel. Slotted openings shall be not greater than 13 mm wide and be oriented so that the long dimension is transverse to the dominant direction of travel. – Information to be provided as part of the documentation.



AS1428.2:1992 Cl19 the minimum illumination level along the accessible path of travel will need to comply with the requirements of AS1680 or at a minimum will provide 150 lx as required by AS1428.2:1992 Cl19. Information to be provided as part of the construction certificate documentation

AS1428.2:1992 Cl25 It is likely that directional signage will be placed within the public domain to assist with wayfinding. The following extract from AS1428.2:1992 provides guidance as to the common view ranges in which to locate signage.



2.5. Premises Standard Part 2.1 - Affected Part

Internal paths of travel should be designed to enable safe and dignified travel by all.

Continuous accessible paths of travel need to be provided throughout all areas normally used by the occupants, including public, patient and staff areas required to be accessible, in accordance with AS 1428.1:2009 (NCC D3.1), including:

- Minimum corridor widths of 1000 mm
- Passing areas of 1800mm (width) x 2000 mm (length) at intervals of 20 metres (some areas identified on the plans as being non-compliant)
- Turning spaces of 1540 mm (width) x 2070 mm (length) where corridors terminate at a doorway
- Increased corridor widths, where necessary, to meet door circulation space requirements to adjacent doors (NCC D3.3)
- The NCC also seeks the provision of suitable handrails to corridors used by patients, as noted in Clause D2.17(b).

2.6. Floor or Ground Surfaces

NCC Reference: NCC Table D2.14
Australian Standard Reference: Clause 7 of AS1428.1:2009
HB198:2014 (slip resistance)

2.6.1. Slip Resistance

The slip resistance of the floor finishes will need to satisfy the minimum requirements of NCC Table 2.14 and the slip resistance ratings noted within HB198.

Certification indicating compliance with the slip resistance provisions will need to be provided from the respective tile suppliers.

The table following summarises the minimum slip resistance levels of flooring materials to be achieved within this development.

Location	NCC Table D2.14	HB198	Criterion Satisfied
Ramp steeper than 1:14	Dry P4/R11 – Wet P5/R12	P5/R12	Additional Information to be provided
Ramp steeper than 1:20 but not steeper than 1:14	Dry P3/R10 – Wet P4/R11		Additional Information to be provided
Tread or landing surface	Dry P3/R10 – Wet P4/R11	Dry P3/R10 – Wet P4/R11	Additional Information to be provided
Nosing	Dry P3 – Wet P4	Dry P3 – Wet P4	Additional Information to be provided
Transition Areas, wards and corridors in hospitals.		P2/R9	Additional Information to be provided
External ramps including sloping driveways, footpaths, etc., under 1:14, external sales areas (e.g. markets), external carpark areas, external colonnades, walkways, pedestrian crossings, balconies, verandas, carports, driveways, courtyards and roof decks		P4/R11	Additional Information to be provided
External Ramps (including sloping driveways, footpaths etc.) steeper than 1 in 14		P5/R12	Additional Information to be provided
Wet area / sanitary facilities		P3/R10	Additional Information to be provided
Bathrooms and ensuites in hospitals.		P3/B	Additional Information to be provided

2.6.2. Carpet

The finishes schedule may propose carpet finishes within this development. It will be necessary that the specification and application of the carpet satisfy the provisions of:

- NCC Clause D3.3 (g) & (h) and
- AS1428.1:2009 Clause 7.4

Clause 7.4.1 of AS1428.1:2009 states:

> *Where carpets or any soft flexible materials are used on the ground or floor surface—*
>
> *(a) the pile height or pile thickness shall not exceed 6 mm and the carpet backing thickness shall not exceed 4 mm;*
>
> *(b) exposed edges of floor covering shall be fastened to the floor surface and shall have a trim along the entire length of any exposed edge; and*
>
> *(c) at the leading edges, carpet trims and any soft flexible materials shall have a vertical face no higher than 3 mm or a rounded bevelled edge no higher than 5 mm or above that height a gradient of 1 in 8 up to a total maximum height of 10 mm*

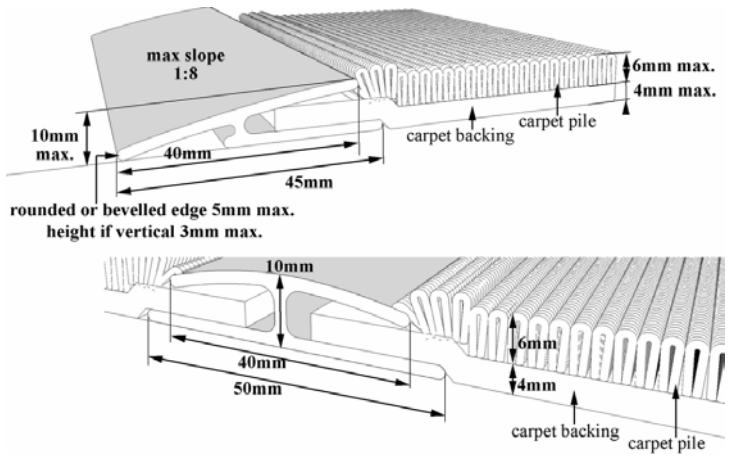


Figure 7 – Examples of carpet joints on an accessible path of travel

2.6.3. Floor transitions

Transitions between floor finishes will need to comply with Clause 7.2 of AS1428.1:2009.

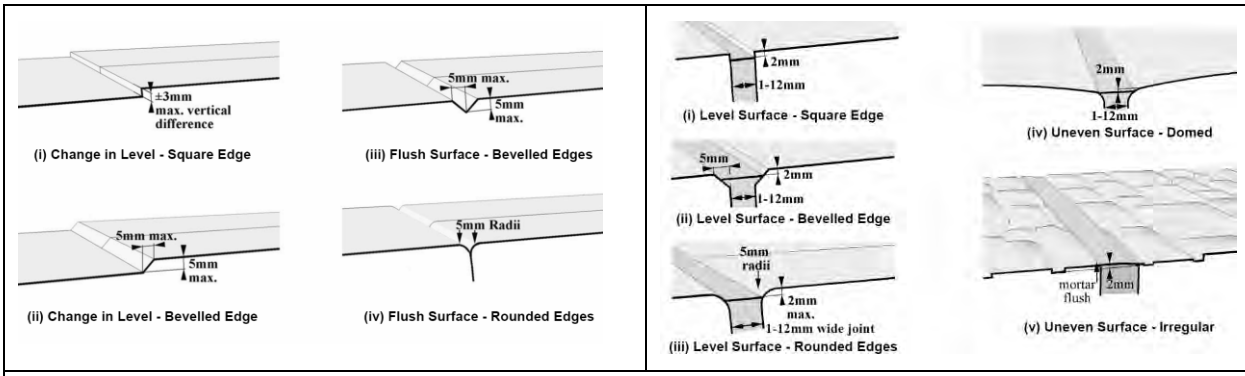


Figure 8 – diagrams indicating the acceptable tolerances between pavement finishes

2.6.4. Recessed Matting

The design may propose the installation of recessed matting. The installation will need to satisfy the following requirements from Clause 7.4.2 of AS1428.1:2009

Matting recessed within a continuous accessible path of travel—

(a) where of metal and bristle type construction or similar, its surface shall be no more 3 mm if vertical or 5 mm if rounded or bevelled, above or below the surrounding surface; and

(b) where of a mat or carpet type material, shall have the fully compressed surface level with or above the surrounding surface with a level difference no greater than 3 mm if vertical or 5 mm if rounded or bevelled.

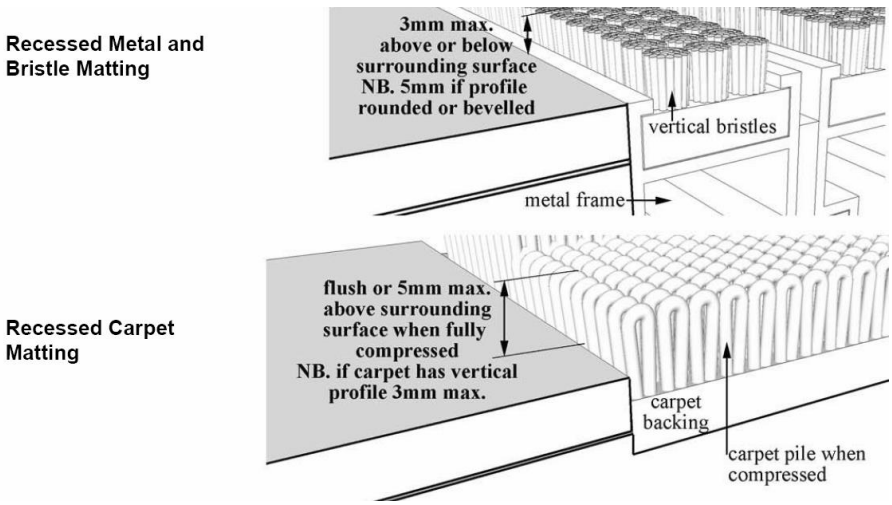


Figure 9 – Recessed matting height tolerances

2.7. Walkways, Ramps and Landings

NCC Reference: NCC Clause D3.3(a)(i)

Australian Standard Reference: Clause 10 of AS 1428.1:2009

2.7.1. 1:14 Ramps

The NCC Clause D3.3(a)(i) identifies that:

In a building required to be accessible—

(a) every ramp and stairway, except for ramps and stairways in areas exempted by D3.4, must comply with—

(i) for a ramp, except a fire-isolated ramp, clause 10 of AS 1428.1

Ramp setout specifications for ramps of gradient 1:14 are provided at Figure 14 of AS1428.1:2009.

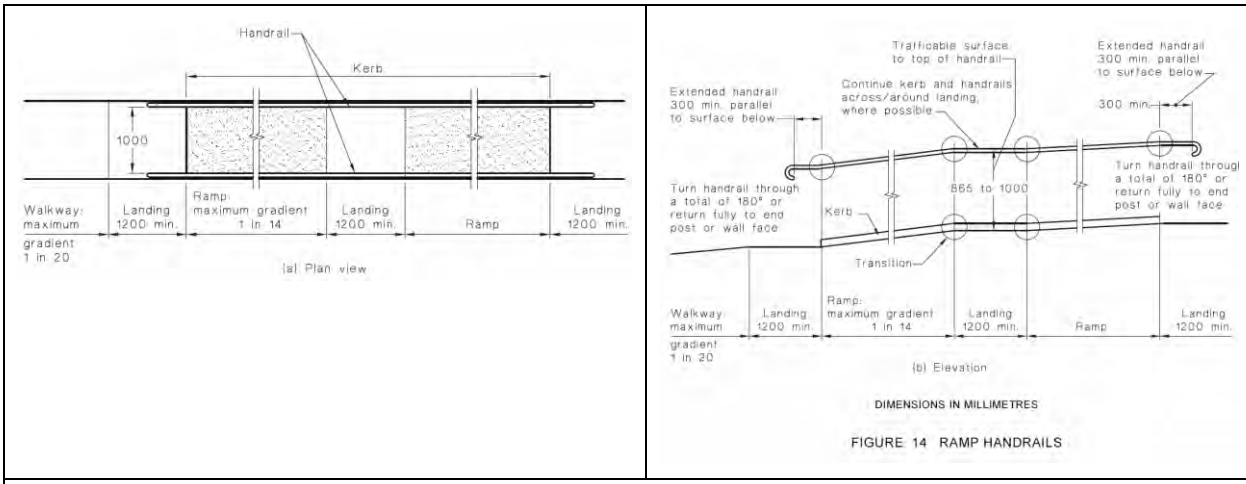


Figure 10 – Figure 14 of AS1428.1:2009

2.7.2. Kerb Ramps

Details of the landscaping and parking will need to be provided at a later stage.

The following information on Kerbs is provided for reference:

The requirements for kerb ramps are identified at Clause 10.7 of AS1428.1:2009:

Kerb ramps shall have—

(a) a maximum rise of 190 mm;

(b) a length not greater than 1520 mm; and

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

The profile of ramps shall comply with the following:

(i) The design and construction of kerb ramps shall be as shown in Figures 24(A), 24(B) and 24(C).

(ii) The sloping sides of a kerb ramp shall be tapered or splayed as indicated in Figures 24(A) and (24(B).

(iii) The angle at the base of the kerb ramp shall be a minimum of 166° as shown in Figures 24(A) and 24(B).

The slip resistance of the ramps shall be in accordance with Table 3B of HB198:2014, which identifies a rating of P5/R10 for a ramp steeper than 1:14.

The following relevant extracts from the Standard are referenced below.

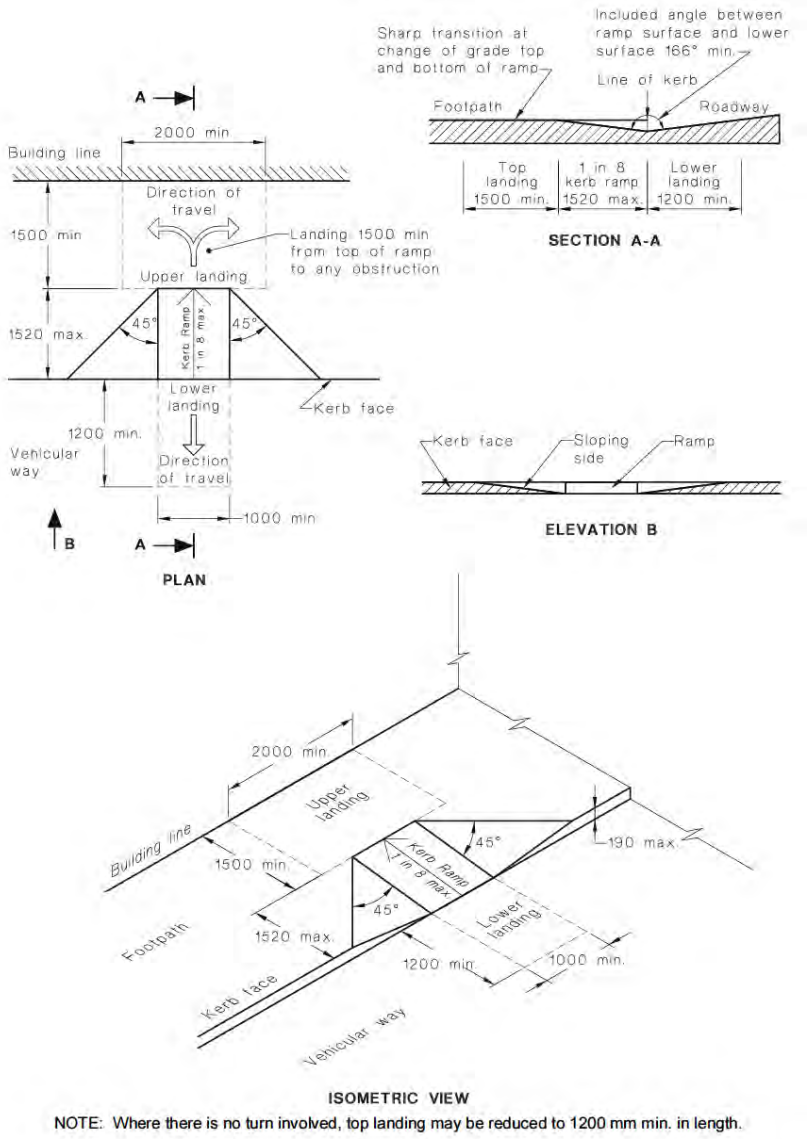


Figure 11 – Fig. 24A of AS1428.1:2009

The slip resistance of the surface of the kerb ramps will need to be P5 or R12 to satisfy the requirements of NCC Clause D2.14.

2.8. Stairways

NCC Reference:	Table D2.14 Slip Resistance Classification
	D3.3 Parts of buildings to be accessible
	(a)(ii) for a stairway
Australian Standard Reference:	Clause 11 Stairways AS1428.1:2009

2.8.1. Stairs External

The design proposes external stairs. The detailing and positioning of these stairs will need to be revised once the detailed documentation has been developed. Where the stair terminates in landscaped areas it will be necessary to provide a solid landing with the dimensions of 1200(d) x width of stairway.

2.8.2. Fire Stairs

The detailing of fire stairs will need to satisfy the requirements of Clauses 11.1 (f) & (g) of AS1428.1:2009.

Specific attention is directed to the following:

f) At the nosing, each tread shall have a strip not less than 50 mm and not more than 75 mm deep across the full width of the path of travel. The strip may be set back a maximum of 15 mm from the front of the nosing. The strip shall have a minimum luminance contrast of 30% to the background. Where the luminous contrasting strip is affixed to the surface of the tread, any change in level shall comply with Clause 7.2 and Clause 7.3.

g) Where the luminance contrasting strip is not set back from the front of the nosing then any area of luminance contrast shall not extend down the riser more than 10 mm

The provision of the nosing strip may be an applied paint finish. An example of a suitable product is the Berger Jet Dry Non-Slip Product. (Link to Berger Jet Dry Product)

The detailing of the handrail provided within the fire stairs will need to satisfy the provisions of Clause 11.2(c) which requires that there be no vertical sections in the handrail design and that the handrail follow the angle of the stairway nosing.

The details of the handrail design will need to be provided as part of the Construction Certificate documentation.

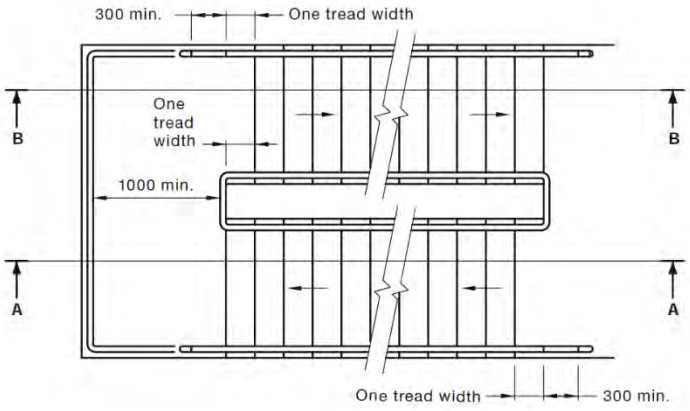


Figure 12 – Fig. 28 of AS1428.1:2009

Appropriate exit Braille Tactile Signage is required. Refer to the 'Signage' section of this report.

A detailed plan for fire emergency exit is required, including the provision of stair sleds or the like.

2.8.3. Circulation Stairs

The circulation stairs will need to comply with the provisions noted at Clause 11 and 12 of AS1428.1:2009.

Specific attention is directed to the following:

a) Compliant handrail designs

b) Compliant handrail extensions to the top and bottom of each flight

c) Non-slip finish to going (Refer to NCC Table D2.14)

d) Non-slip 50-75 nosing fixed to each going

e) Opaque risers

f) Compliant TGSIs located at the top and bottom of each flight. TGSIs are not required at mid-landings where no additional pedestrians are added to the stair system

   Note: TGSIs shall be 600mm in width (or 300mm wide where the stair is closer than 3m to an adjacent wall.)

g) Minimum lighting level of 150 lx to be achieved

The following extract Figures below highlight the main features of a compliant stair design.

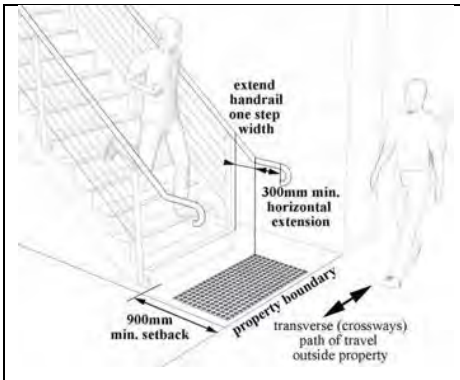


Figure 13 – Diag.25A DE-IG02 2013

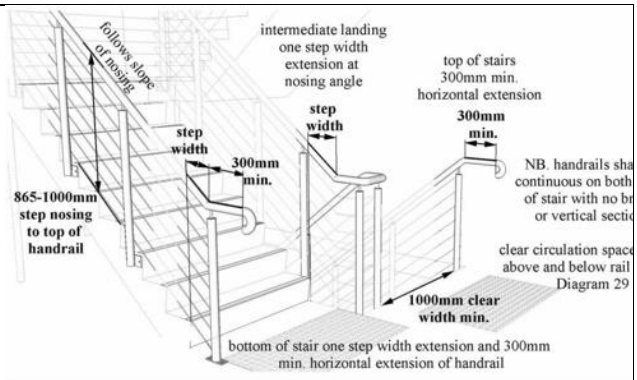


Figure 14 – Diag.25C DE-IG02 2013

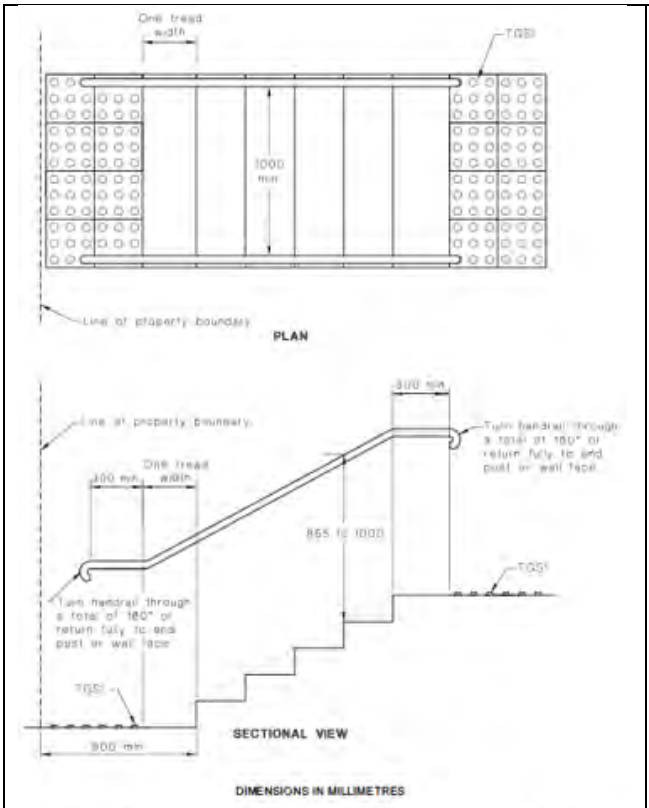


Figure 15 – Fig.26A Section 11 AS1428.1 2009

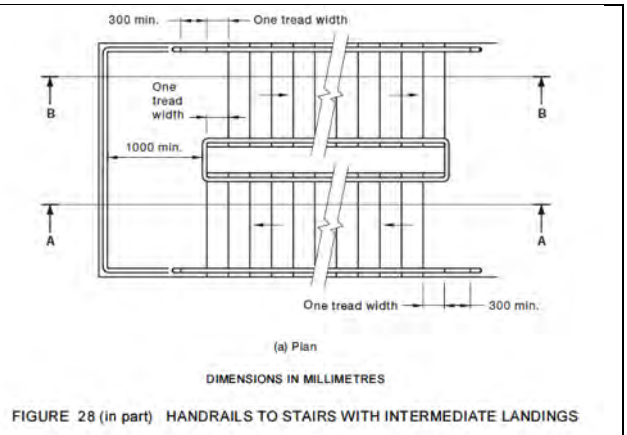


Figure 16 – Fig.28 Section 11 AS1428.1 2009

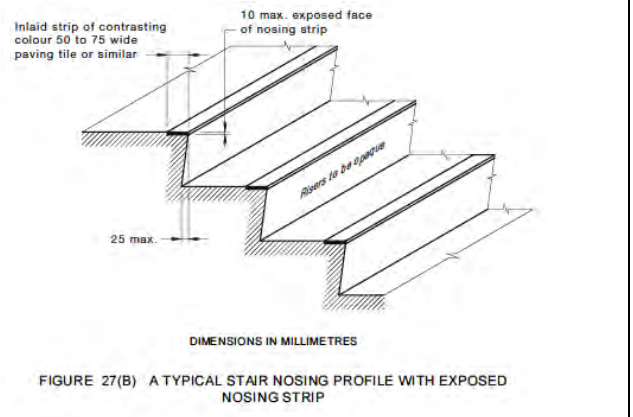


Figure 17 – Fig.27B Section 11 AS1428.1 2009

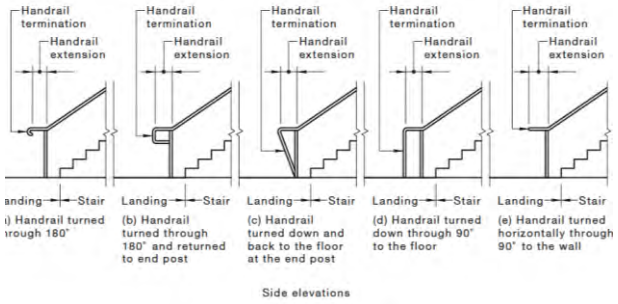


Figure 18 – Fig.26C Section 11 AS1428.1 2009

2.9. Signage and wayfinding

It is assumed that braille tactile signage associated with WC facilities and exist locations identified by an illuminated exit sign required by NCC Clause E4.5 located within the new facility will comply with the provisions of NCC Clause D3.6 and NCC Specification D3.6.

It is assumed that the wall signage associated wayfinding along the accessible path of travel will be mounted in accordance with the provisions of Clause 25 of AS1428.2:1992.

2.10. Handrails

NCC Reference:	D3.3 Parts of buildings to be accessible
Australian Standard Reference:	Clause 12 Handrails AS1428.1:2009

The design and construction of handrails shall comply with the following:

(a) Handrails and balustrades shall not encroach into required circulation spaces.

(b) The cross-section of handrails shall be circular or elliptical, not less than 30 mm or greater than 50 mm in height or width for not less than 270° around the uppermost surface as shown in Figures 29(a) and 29(b). Elliptical handrails shall have the greater dimension in the horizontal axis as shown in Figure 29(b).

(c) Exposed edges at ends and corners of handrails shall have a radius of not less than 5 mm.

(d) The top of handrails shall be not less than 865 mm nor more than 1000 mm above the nosing of stairway tread or the plane of the finished floor of the walkway, ramp or landing.

(e) The height of the top of the handrail, measured in accordance with Item (d), shall be consistent through the ramp (or stairs) and any landings.

(f) If a balustrade is required at a height greater than the handrail, both shall be provided.

(g) Handrails shall be securely fixed and rigid, and their ends shall be turned through a total of 180°, or to the ground, or returned fully to end post or wall face, as shown in Figures 26(C) and 26(D).

(h) The clearance between a handrail and an adjacent wall surface or other obstruction shall be not less than 50 mm. This clearance shall extend above the top of the handrail by not less than 600 mm.

(i) Handrails shall have no obstruction to the passage of a hand along the rail, as shown in Figures 29(a) and 29(b).

(j) The inside handrail at landings shall always be continuous, as shown in Figure 28(a).

2.11. Lift

Two (2) lifts are proposed to service the new facilities provided. One of the lifts proposed will be a public lift and the other lift will be a staff or service lift.

The total rise of the lifts is more than 12m. The minimum lift car size in each instance will need to be not less than 1400mm(w) x 1600mm(d). The actual size of the lift cars will need to be determined by the lift consultant having regard to the specific requirements of the facility and stretcher requirements. The following table when referenced with the requirements of AS1735.12 provides a checklist of elements to be satisfied in the lift installation.

CLAUSE	REQUIREMENT TO BE SATISFIED	STATUS	COMMENT / ACTION
Section 2	The minimum lift car internal dimensions shall be 1100 mm wide by 1400 mm deep between the inside of the closed car doors to the inside back wall of the car.		
	The minimum clear width of car door openings shall be not less than 900 mm.		
3.1	Any carpet shall have a pile length above the carpet substrate of not more than 6 mm. NOTE: Car floor surfaces should be firm and slip resistant.		
3.2	Where Type C safety gear as classified by AS 1735.2 is used, it shall be possible for a lift mechanic to gain access to the release mechanism of the safety gear while the lift car is occupied by a person in a wheelchair.		
4.1	Lift car doors and landing doors shall be of the horizontally sliding type, power- operated, and automatically controlled.		
4.2	Lift car doors shall be fitted with a passenger-protection system which, while activated, will hold the doors in the open position. The system shall not be nullified by objects with a reflective surface		
4.3	When the doors are responding to a landing button, they shall remain fully open for a minimum of 6 s		
5.1	Surfaces (including button cover plates), within 300 mm of car control buttons, that are parallel to the face of the buttons and the button cover plate shall have a finish that reduces glare and reflection.		
5.2	Protruding edges		
5.3	Handrails		
5.4	Seat		
Section 6	Lift car levelling		
7.1	Each landing served shall be provided with one or more control buttons to call a lift		
7.2.1	Number of control panels		
7.2.2	Control Buttons on Control Panels		
7.2.3	Key Pads		
7.3.1	Height above floor		
7.3.2	Distance from corners		
7.3.3	At lift landings		
7.3.4	Security system operating devices		

CLAUSE	REQUIREMENT TO BE SATISFIED	STATUS	COMMENT / ACTION
7.4.1.1	Control button movement		
7.4.1.2	Force to operate call button 5N		
7.4.2	Size of button (19mm)		
7.4.3	Separation		
7.4.4	Projection		
7.4.5	Surface		
7.4.6	Edges & Corners		
7.4.7	Inclination		
7.4.8	Highlight		
7.4.9	Identification of control Buttons		
8.1	Audible Information		
8.2	Visible Information		
8.3	Tactile information		
8.4	Shape of Characters		
8.5	Indication of direction of travel		
8.6.1	Car position Indicator		
8.6.2	Acknowledgement of floor calls		
9.1	Communication system		
9.2	Communication system		
9.3	Lift Identification system		
9.4	Permanently attended location		
9.5	Lift Car		
10.1	Compliance with AS1680		
10.2	General Lighting		
10.3	Lighting of lift car controls		

2.12. Visual Indicators on Glazing

NCC Reference: D3.2 Access to buildings

D3.3 Parts of buildings to be accessible

Australian Standard Reference: Clause 6.6 (Visual Indicators on Glazing) of AS1428.1 2009

AS 1428.4.1 2009 Design for access and mobility - Means to assist the orientation of people with vision impairment

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Where full height glazing is proposed, visual indicators will need to be fixed to the glazing in accordance with Clause 6.6 of AS1428.1:2009:

> *Where there is no chair rail, handrail or transom, all frameless or fully glazed doors, sidelights, including any glazing capable of being mistaken for a doorway or opening, shall be clearly marked for their full width with a solid and non-transparent contrasting line. The contrasting line shall be not less than 75 mm wide and shall extend across the full width of the glazing panel. The lower edge of the contrasting line shall be located between 900 mm and 1000 mm above the plane of the finished floor level.*
> *Any contrasting line on the glazing shall provide a minimum of 30% luminance contrast when viewed against the floor surface or surfaces within 2 m of the glazing on the opposite side.*

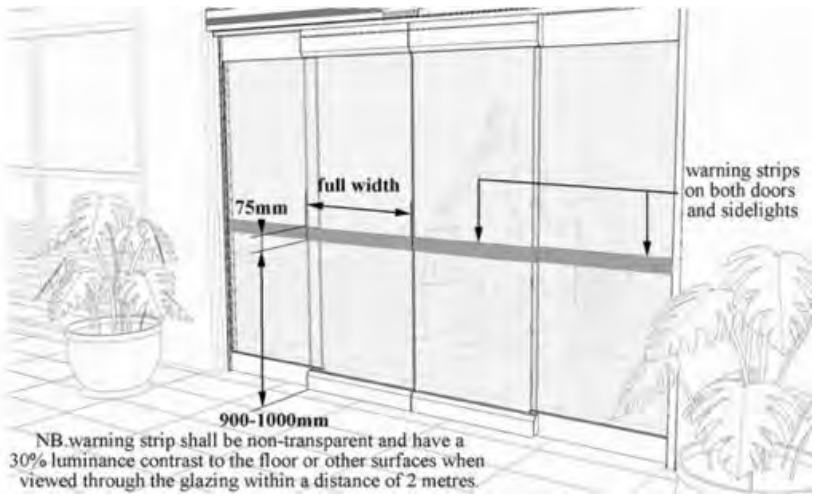


Figure 19 – Diag.4 DE-IG02 2013

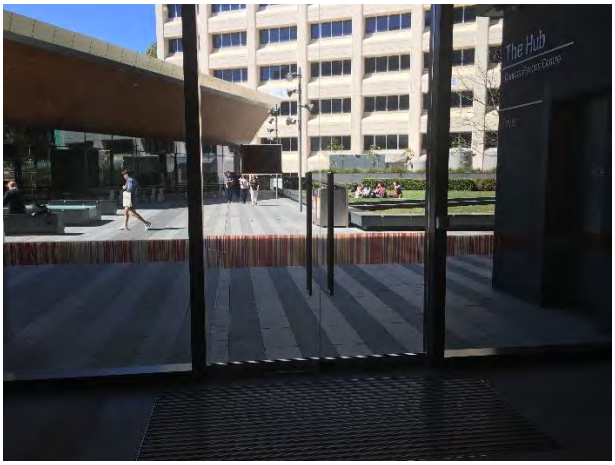
The following are some compliant examples of the application of Visual Indicators on glazing.

In considering the statutory requirements for Visual Indicators on glazing, it is important to note other contextual factors; such as glare, lighting, floor finishes, furniture placement and casted shadows from building lines.

The following are some non-compliant examples of the application of Visual Indicators on glazing as a result of these contextual factors.

Luminance contrast is not achieved due to glare and shadow cast.

Luminance contrast is not achieved due to floor finish colour.



Luminance contrast is not achieved due to shadow cast.

Future documentation will need to be provided detailing the application of Visual Indicators if full-height glazing is proposed to any wall or doorway.

2.13. Furniture and Fitments

NCC Reference: D3.3 Parts of buildings to be accessible

Australian Standard Reference: 24 (Furniture and Fitments) of AS1428.2 1992

2.13.1. Counters

All reception counters associated with the building entrance and triage areas are to include a portion of the counter that is accessible.

2.13.2. Tables

The tables located within offices will need to include accessible desks.

The accessible desks will need to be adjustable to meet the needs of the student. The preferred range of adjustability is 750-850mm AFFL.

The height of clearance beneath the unit from the finished floor should be 820 ±20 mm.

Where there are two tables/counters provided, the following dimensions apply:

(a) Height from the finished floor to the top of the unit:

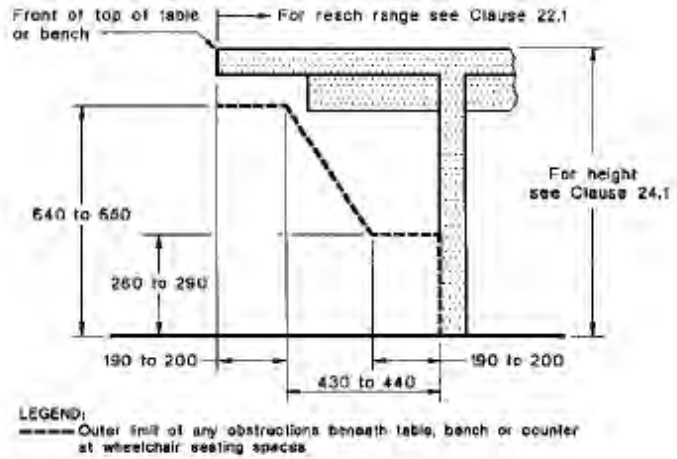
(i) 1st unit: 750 ± 20 mm.

(ii) 2nd unit: 850 ± 20 mm.

(b) Height of clearance beneath unit, from the finished floor:

(i) 1st unit: 730 ± 20 mm.

(ii) 2nd unit: 820 ± 20 mm.



NOTE: For width of seating spaces see Clause 24.1.3.

DIMENSIONS IN MILLIMETRES

FIGURE 25 KNEE AND FOOT CLEARANCE BENEATH A TABLE, BENCH OR COUNTER

Figure 20 – Fig.25 AS1428.2:1992

2.13.3. Seating

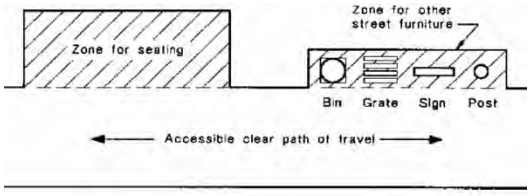
If a staff member has mobility requirements, the hospital policy of modifying the work environment will be implemented.

Note: where possible, the furniture shall not be built in to allow for accommodation of different seating opportunities and spatial allowances for any users who may require enhanced circulation space.

Public seating will be provided within this facility.

The public waiting areas associated with the ED waiting area and the Main entry waiting area should provide for at least 1 wheelchair zone in each of the waiting areas. Additional wheelchair locations may be required to be provided to other waiting areas once the detailed design is undertaken.

It is recommended that the custom joinery incorporate the accessibility dimensions identified at Clause 27 of AS1428.2:1992 – Street Furniture to provide access to accessible seating for as many people as possible.

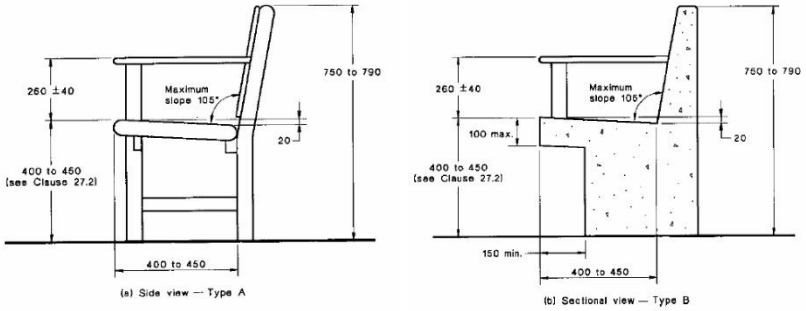


NOTE: There should be no projections into the accessible path of travel.

DIMENSIONS IN MILLIMETRES

FIGURE 31 EXAMPLE OF POSITION OF STREET FURNITURE

The detailing of accessible seating is to include for the provision of arms to some of the chairs. The following extract from the Standard provides some guidance as to the relationships of chair arms to the seat.



Seating Checklist

CRITERION TO BE SATISFIED	SEATING
Seats shall be a minimum of 500 mm away from the path of travel	
Objects shall be of a colour which provides a contrast with their background and have a luminance factor of not less than 0.3 (30%).	
Seat height to be 400-450mm	
Availability of some seating with a seat height of 530mm for the elderly	
The front of the seat shall have a clear space between any legs at ground level to within 150 mm of the front edge of the seat, and to within 100 mm of the seat height to allow for rearward adjustment of feet when rising	
The front edge of the seat shall have a minimum radius of 30 mm.	

CRITERION TO BE SATISFIED	SEATING
No edge or projection shall have a radius of less than 5 mm unless protected from contact with the user	
Where armrests are provided, the top surface of the armrests shall be at a height of 260 ±40 mm above the seat.	

2.13.4. Waiting Areas

All waiting areas require a location for a wheelchair of minimum 1300 x 800mm.

Refer to the plan mark-ups to review these relevant locations.

2.13.5. Lockers

At least one or two lockers in each bank of lockers should be designated for someone with a mobility impairment.

The designated accessible lockers are to be reflected in drawings, with the key opening, locks and handle between 900 – 1100mm AFFL. Refer to the following Sketch that illustrates this zone in blue.

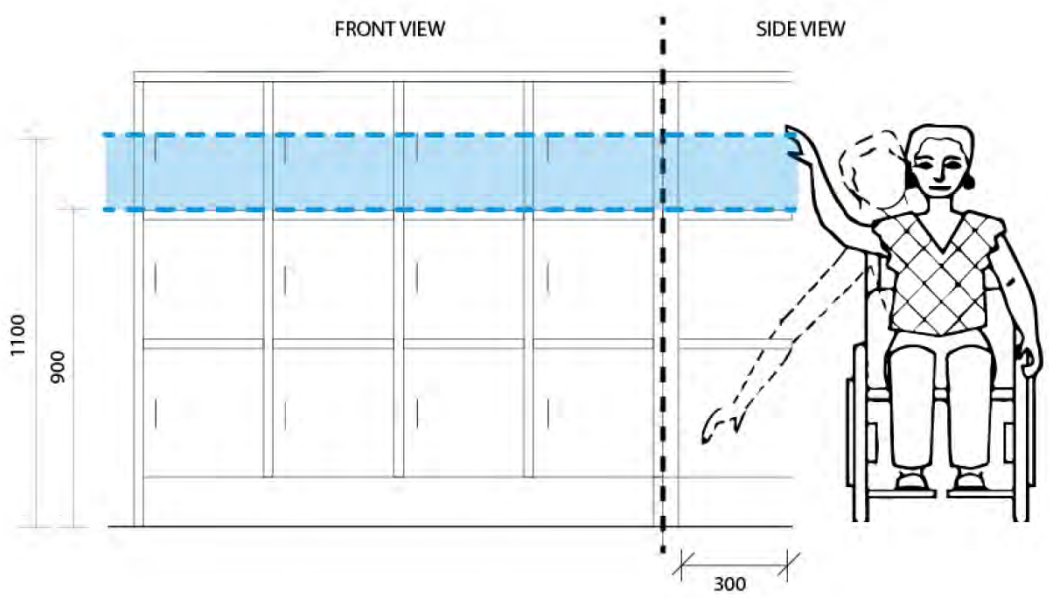


Figure 21 – Sketch by iAccess Consultants

If a staff member requires a locker within a certain reach range, they should be allocated an appropriate locker that best meets their needs.

2.13.6. Beverage Bays

If beverage bays are located within a room, the circulation space within the room will need to comply with the provisions noted in section 3.14.18 of this report, with zones of 1500 x 1500mm to ensure the ability to make a 180deg turn is provided.

The distance between the beverage bay counter and any adjacent wall shall be not less than 1540mm.

Where the beverage bay is located adjacent to a doorway, door circulation requirements apply which are noted in the Doorways section report.

Water ZIP taps shall be located not closer than 500mm from an internal corner.

The following photograph is an example of a ZIP tap that is not 500mm from an internal corner (i.e. is not compliant).

2.14. Circulation at doorways

NCC Reference:	D3.2 Access to buildings
	D3.3 Parts of buildings to be accessible
Australian Standard Reference:	Clause 13 (Doorways, Doors and Circulation Spaces at Doorways) of AS1428.1 2009

2.14.1. General

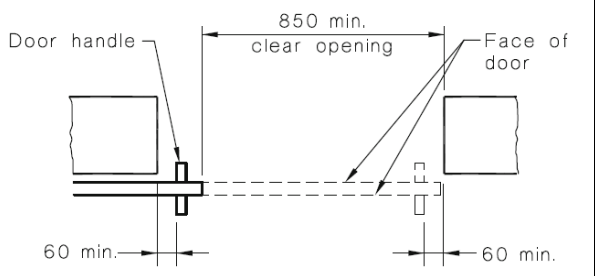
The plans provided indicate a number of locations where the circulation at doorways required by Clause D13.3 of AS1428.1:2009 is not able to be achieved. The attached plans nominate the locations where the design will need to be modified to provide compliant door circulation

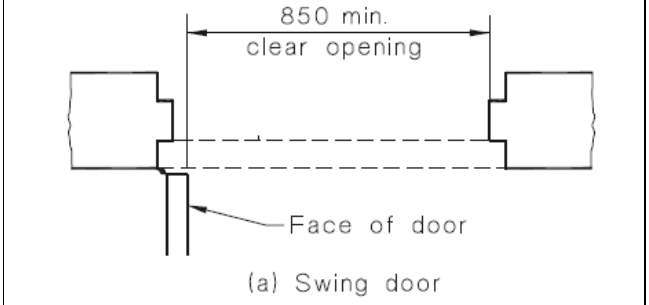
2.14.2. Clear Door Width

The minimum clear width of all doorways (including swing and sliding doorways) to rooms required to be accessible is to be not less than 850mm clear.

Where double doors are proposed, the active leaf is to have a minimum clear width of 850mm.

Provide confirmation of all door clear open widths.





2.14.3. Successive Doorways

Where there are successive doorways, a clear distance of 1450mm minimum is required between each doorway, in accordance with Figure 34 of AS1428.1:2009.

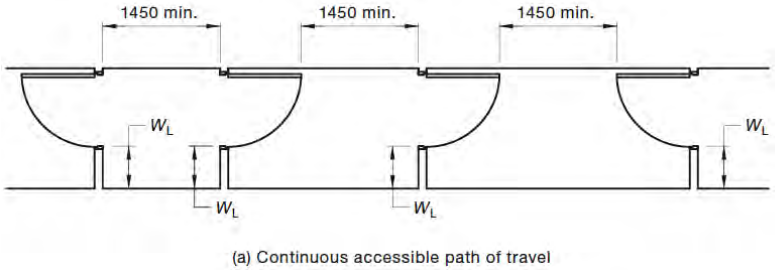


Figure 22 – Figure 34 of AS1428.1:2009

2.14.4. Door Controls

The Australian Standard requires that door hardware be located within 900-1100mm AFFL.

If lever hardware is proposed to be utilised it will be necessary for the design of the lever to comply with the provisions of Clause 13.5 of AS1428.1:2009.

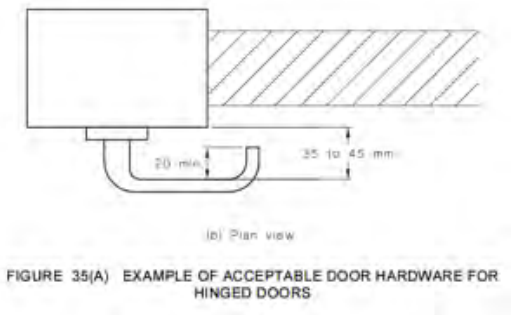


FIGURE 35(A) EXAMPLE OF ACCEPTABLE DOOR HARDWARE FOR HINGED DOORS

Figure 23 – Fig. 35 Section 13 AS1428.1:2009

The hardware will need to be a “D” handle style fixed to both sides of the door assembly as required by Clause 13.5.2(c) of AS1428.1:2009.

2.14.5. Circulation at Doorways

Clause 13.3 of AS1428.1:2009 provides direction as to the required circulation space to approach and enter rooms required to be accessible. Doorways to rooms that are not required to be accessible do not need to comply with the requirements for circulation at doorways.

If the furniture arrangement of the rooms precludes compliant circulation from being achieved, the commitment by the hospital will be to modify the work space to meet the specific needs of the employee. The work-place policy statement will need to be provided to substantiate this approach.

2.15. Doorways - Luminance Contrast

Rooms that are not required to be accessible do not need to satisfy the requirements for doorway luminance contrast.

All other rooms, required to be accessible, such as nursing stations, offices etc. require compliance with doorway luminance contrast requirements noted at Clause 13.1 of AS1428.1:2009:

> *All doorways shall have a minimum luminance contrast of 30% provided between—*
>
> *(a) door leaf and door jamb;*
>
> *(b) door leaf and adjacent wall;*
>
> *(c) architrave and wall;*
>
> *(d) door leaf and architrave; or*
>
> *(e) door jamb and adjacent wall.*
>
> *The minimum width of the area of luminance contrast shall be 50 mm*

The prevailing view is that option (b) – indicating luminance contrast between the *door leaf and adjacent wall* is the preferred option.

A table indicating wall colour and door colour with the associated luminance contrast level achieved will need to be prepared and provided to demonstrate compliance with the requirements of Clause 13.1 of AS1428.1:2009.

2.16. Switches

Australian Standard Reference:	Clause 14 (Switches and General Purpose Outlets) of AS1428.1 2009
Requirement to be Satisfied:	All switches and controls on an accessible path of travel, other than general purpose outlets, shall be located not less than 900 mm nor more than 1100 mm above the plane of the finished floor and not less than 500 mm from internal corners.

2.16.1. General

The operation of many of the doors within this building will be connected to the building access control system. The nature of the activities undertaken will necessitate the overlay of restricted access to some areas.

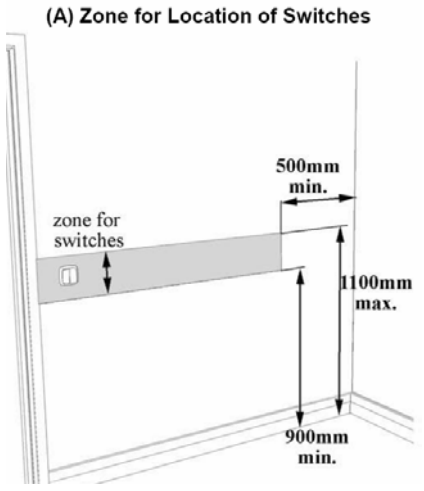
2.16.2. Video Intercoms

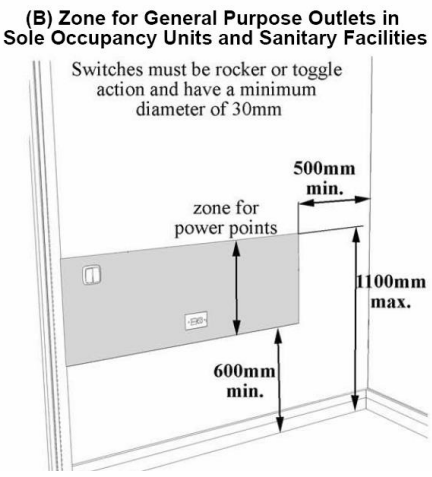
Any video intercom units will need to be installed in accordance with the manufacturer's instructions. The video intercom unit will need to be installed not closer than 5000mm to an internal corner.

2.16.3. Access Control

Access control swipe or fob readers will need to be installed between 900-1100mm AFFL and not closer than 500mm to an internal corner.

Door release buttons will need to be located between 900-1100mm AFFL and not closer than 500mm to an internal corner. The door release button will need to be the large format switches (35 x 35mm rocker switch) or the "mushroom" push button type.





 PRESS TO EXIT 20.12.2017 11:55	 PRESS

2.17. Carparking – Setdown area

The new works plan proposes a setdown area associated with the new entry to the hospital. None of the spaces have been designated as being accessible.

The plans do not indicate the kerb arrangements at this setdown area.

If a kerb is proposed, then a kerb ramp will need to be provided to transition between the driveway and the pavement level. It is recommended that a 30% luminance contrast be provided between the pavement finish and the finish of the driveway.

If no kerb is provided, TGSIs and Bollards in accordance with the requirements of AS1428.4.1:2009 will need to be provided. It is recommended that a 30% luminance contrast be provided between the pavement finish and the finish of the driveway.

2.18. Carparking Calculation

The parking at this facility can be considered for both outpatient and non-outpatient user classifications.

The at-grade parking associated with the Main Entry on the eastern side of the site could be considered as outpatient parking where accessible parking will need to be provided at the rate of 1/50 parking spaces provided.

The undercover parking provided adjacent to the emergency department on the western side of the site could be considered as non-outpatient parking where accessible parking will need to be provided at the rate of 1/100 parking spaces provided.

The configuration and the line marking of the accessible parking provided in both of these locations will need to satisfy the provisions of AS2890.6:2009.

The enabling works plan nominate the provision of two (2) accessible parking spaces located adjacent to the Mona Road frontage. The parking bay sizing and line marking of these accessible parking spaces will need to satisfy the requirements of AS2890.6:2009.

The lighting level associated with the parking bays will need to be 40lx as per the requirements of AS1680.2.1:2008.

The path of travel from the accessible parking bays to the various principle pedestrian entrances will need to be upgraded to provide a non-slip surface and constructed to satisfy the requirements of Clauses 7.1, 7.2 and 7.3 of AS1428.1:2009.

The new works propose an additional two accessible parking spaces located opposite the new entry to the Hospital. The configuration of the parking bays and the line making will need to satisfy the requirements of AS2890.6:2009.

2.19. Threshold Ramps - Design intent

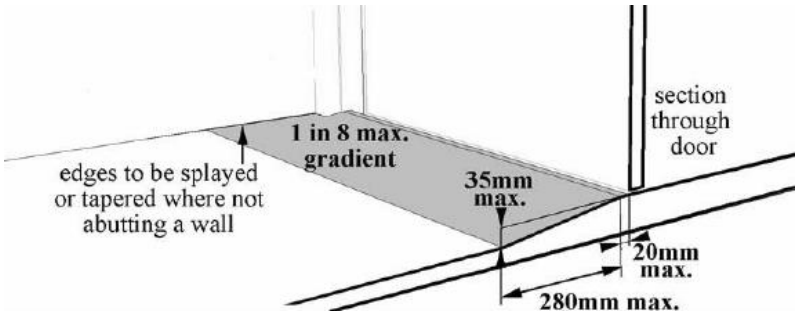
It is anticipated that door threshold ramps may be required at the doorways connecting the internal spaces of the facility with the external secure courtyards. Threshold ramps must meet the requirements of NCC Clause D3.3(a)(i) and Clause 10 of AS 1428.1:2009, including:

(a) a maximum rise of 35 mm;

(b) a maximum length of 280 mm;

(c) a maximum gradient of 1:8; and

(d) be located within 20 mm of the door leaf which it serves



2.20. Hearing augmentation

NCC Reference:	NCC Clause D3.7
	NCC Clause D3.6
	NCC Specification D3.6
Australian Standard Reference:	AS1428.5:2010 Design for access and mobility - Communication for people who are deaf or hearing impaired
	AS1428.4.1:2009
Requirement to be Satisfied:	NCC D3.7 Hearing Augmentation
	A hearing augmentation system must be provided where an inbuilt amplification system, other than one used only for emergency warning, is installed—
	ii. in an auditorium, conference room, meeting room or room for judicatory purposes; or
	iii. at any ticket office, teller's booth, reception area or the like, where the public is screened from the service provider.

A hearing augmentation system is to be provided in locations where a built-in amplification system is provided.

A built-in amplification system is a system where either speakers are installed within a room or the wall mounted monitor has built-in speakers. Such installations are typically found in meeting rooms, training rooms and waiting areas.

Where the wall mounted screen is not capable of broadcasting sound and any audio is provided by way of the speakers attached to a laptop or that are portable, the hearing augmentation provisions will not need to be applied.

Section 2.3 of AS1428.1:2010 highlights the types of hearing augmentation system:

Persons with a hearing loss may or may not have a personal hearing aid or a cochlear implant fitted. When choosing an ALS the outcome should enable communication by all people with hearing impairment whether they wear hearing aids, or have hearing aids or cochlear implants without a telecoil (T-switch), or have hearing aids or cochlear implants with a telecoil (T-switch).

ALS types include—

(a) audio frequency induction loop systems (AFILSs);

(b) modulated radio systems (commonly referred to as FM systems); and

(c) infra-red (IR) systems.

Details of the proposed method of hearing augmentation to be installed will need to be provided as part of the detailed documentation provided for this project.

Where hearing Augmentation systems are installed, a Braille Tactile Sign incorporating the international symbol of deafness will need to be provided.

NCC D3.6 identifies the requirement for Braille Tactile Signage to be implemented where a hearing augmentation system is installed.

(b) signage including the international symbol for deafness in accordance with AS1428.1 must be provided within a room containing a hearing augmentation system identifying –

(i) the type of hearing augmentation; and

(ii) the area covered within the room; and

(iii) if receivers are being used and where the receivers can be obtained

Refer to the ‘Signage’ section of this report for details of Braille Tactile Signage requirements.

2.21. Accessible Sanitary Facilities

NCC Reference: NCC Clause F2.4 Accessible Sanitary Facilities
NCC Clause D3.6
NCC Specification D3.6

Australian Standard Reference: Clauses 15 of AS1428.1:2009

Accessible WC facilities have been nominated on the plans provided for review. The detailed layout drawings for each facility has not been provided.

The table following summarises the NCC requirements to be satisfied.

Accessible WC requirements as nominated at NCC Clause F2.4	Additional criteria to be satisfied	Criteria satisfied by the proposed design
(a) accessible unisex sanitary compartments must be provided in accessible parts of the building in accordance with Table F2.4(a); and	Accessible WC facilities are to be provided (a) 1 on every storey containing sanitary compartments; and (b) where a storey has more than 1 bank of sanitary compartments containing male and female sanitary compartments, at not less than 50% of those banks.	To be confirmed
(b) accessible unisex showers must be provided in accordance with Table F2.4(b); and	Where 1 or more showers are provided, not less than 1 for every 10 showers or part thereof.	To be confirmed
(c) at each bank of toilets where there are one or more toilets in addition to an accessible unisex sanitary compartment at that bank of toilets, a sanitary compartment suitable for a person with an ambulant disability in accordance with AS 1428.1 must be provided for use by males and females; and		To be confirmed
(d) an accessible unisex sanitary compartment must contain a closet pan, washbasin, shelf or bench top and adequate means of disposal of sanitary towels; and		Information to be provided
(e) the circulation spaces, fixtures and fittings of all accessible sanitary facilities provided in accordance with Table F2.4(a) and Table F2.4(b) must comply with the requirements of AS 1428.1; and		Information to be provided

Accessible WC requirements as nominated at NCC Clause F2.4	Additional criteria to be satisfied	Criteria satisfied by the proposed design
(f) an accessible unisex sanitary facility must be located so that it can be entered without crossing an area reserved for one sex only; and		Satisfied
(g) where two or more of each type of accessible unisex sanitary facility are provided, the number of left and right handed mirror image facilities must be provided as evenly as possible; and		Information to be provided
(h) where male sanitary facilities are provided at a separate location to female sanitary facilities, accessible unisex sanitary facilities are only required at one of those locations; and		Information to be provided
(i) an accessible unisex sanitary compartment or an accessible unisex shower need not be provided on a storey or level that is not required by D3.3(f) to be provided with a passenger lift or ramp complying with AS 1428.1.		Not applicable

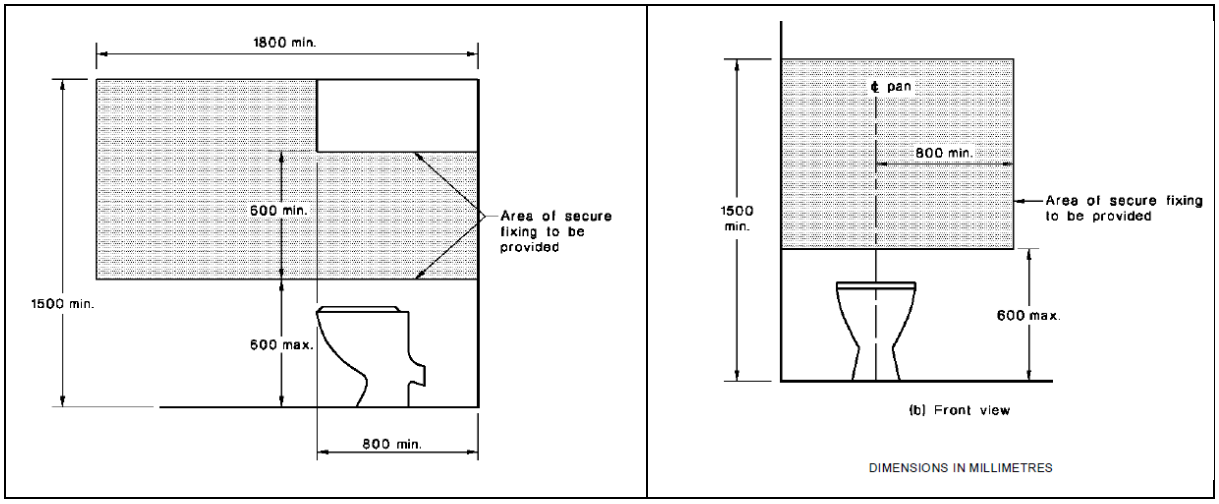
Details of the non-slip floor finish to the bathrooms will need to be provided.

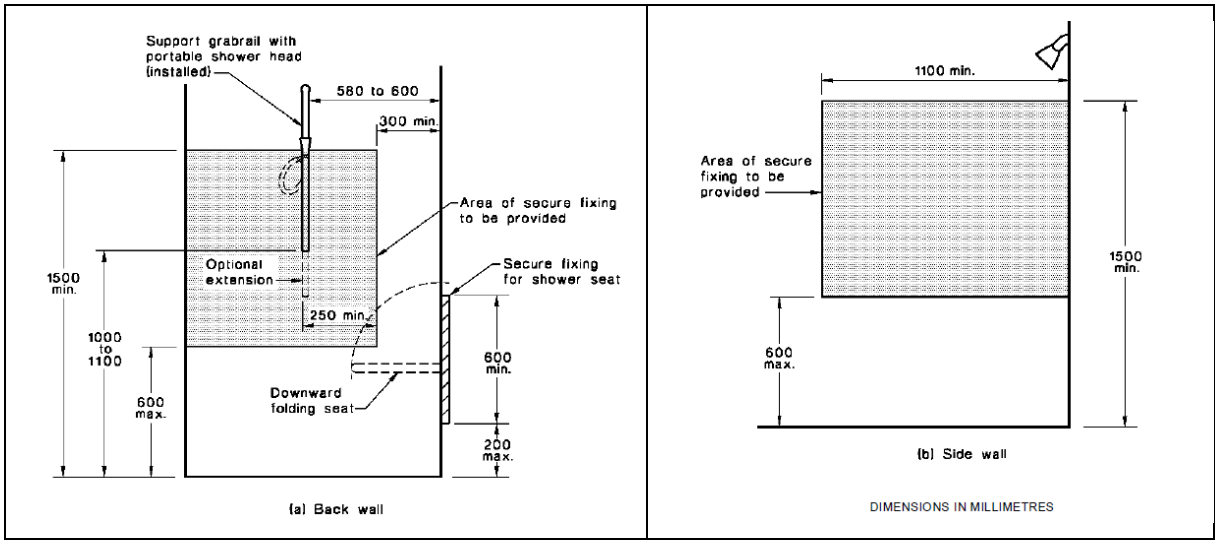
Position of TMV details are to be provided as part of the Construction Certificate documentation.

Tap sets will need to be specified with lever or capstan handles.

2.21.1. Wall Reinforcement

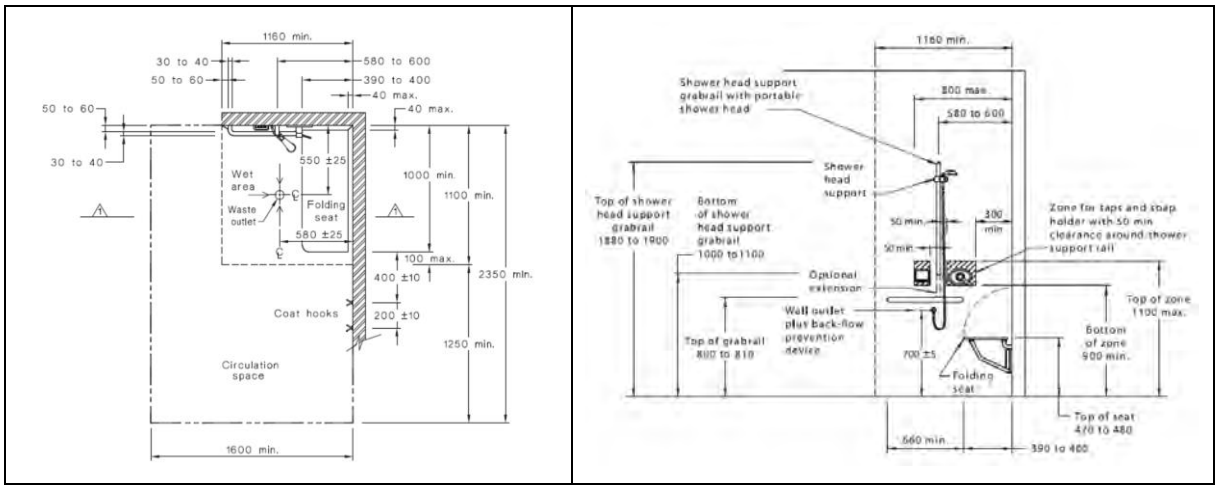
Provision of wall strengthening for grabrails will need to be provided adjacent to the WC and shower of all accessible sanitary facilities.





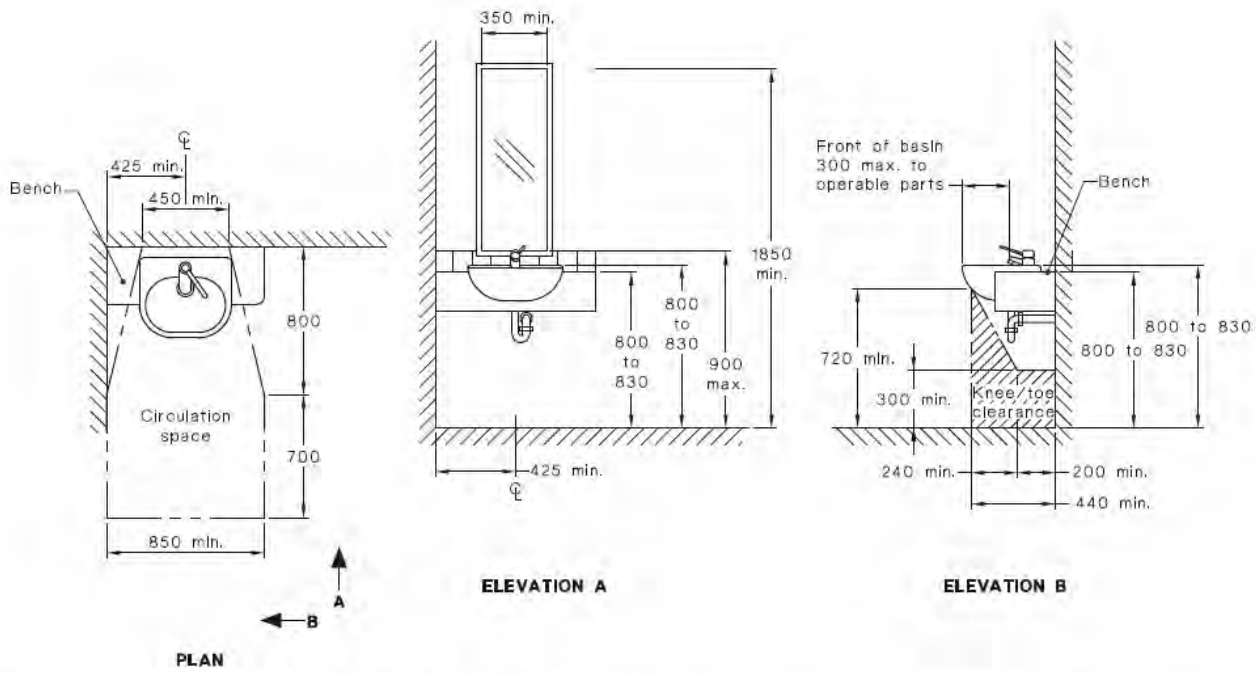
2.21.2. Shower Compartment

The shower compartment will need to have an area of 1160 x 1100mm. The position of the shower rose, tapware and the soap holder recess will need to be compliant to the provisions of Clause 15 of AS1428.1.



Specific attention is directed to the requirement of the length of the hose associated with the shower rose. The Standard requires the length of the hose to be 1500mm. The placement of the hose connection point results in the possibility of the shower head reaching the WC bowl which is prohibited by the Australian Standards. The detailing of this configuration will need to be resolved as part of the detailed documentation of detailed construction certificate documentation.

2.21.3. Hand-basins



NOTE: 'Operable parts' means the centre-line of the tap, or where a level handle is provided, the end point of the level measure throughout its arc of movement, or where a sensor is provided where the sensor is reliably activated.

DIMENSIONS IN MILLIMETRES

FIGURE 44(A) SEMI-RECESSED WASHBASIN INSTALLATION —OTHER THAN FOR SOLE-0CCUPANCY UNIT

A wash basin with compliant circulation to AS1428.1 will need to be provided.

2.21.4. Toilet Roll Dispensers

The location of toilet roll dispensers shall be fixed within the zone specified in Figure 41 of AS1428.1:2009.

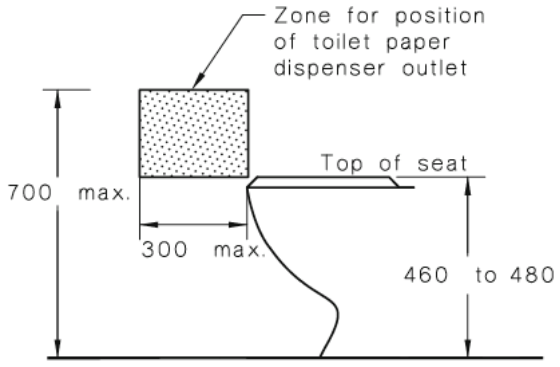


Figure 24 – Fig.41 AS1428.1 2009

Clause 17-Handrails of AS1428.1:2009 specifies the clearance requirement for grabrails.

The clearance between a grabrail and the adjacent wall surface or other obstruction shall be not less than 50 mm and not more than 60 mm. The clearance above a horizontal grabrail shall extend

above the top of the grabrail by not less than 600 mm. The clearance below a horizontal or angled rail shall be a minimum of 50 mm except at fixing points.

Grabrails shall be fixed so that there is no obstruction to the passage of the hand along the top 270° arc of horizontal and angled grabrails. There shall be no obstruction to the passage of the hand for the full length of vertical grabrails.

The toilet roll dispenser shall therefore not be installed less than 50mm from underneath the grabrail.

2.21.5. Summary

The following is a summary of requirements to satisfy the WC provisions of AS1428.1:2009:

• Entry Door	The detailing of the circulation at doorways shall comply with the provisions of Clause 13 of AS1428.1:2009
• Entry door	The luminance contrast provisions at the doorway shall comply with the provisions of Clause 13.1 of AS1428.1:2009
• Force required to operate door	The force required to operate the door if fitted with a door closer is a maximum of 20N. It is assumed that autodoors will not be installed
• Door hardware	The position of door hardware is to be located between 900-1100mm AFFL.
• WC pan circulation	1900×2300mm
• hand basin circulation	850×1500mm, the basin may encroach a maximum of 100 mm into the circulation space of the adjacent WC pan circulation
• WC pan offset from side wall	450/460 mm
• WC pan offset from rear wall	800±10 mm
• WC pan backrest	to code requirements
• WC pan toilet seat	The toilet seat will need to be the full round type, securely fixed in position, be rated 250 KG and have a minimum limits contrast of 30% with the background pan, wall or floor against which it is viewed.
• WC pan grab rails	Grab rail to be mounted 800 mm above finish floor level, length of grab rail to be 1050 mm from rear wall, install 300 mm grab rail to left-hand side of the WC pan. It is assumed that the walls to which the grab rails are fixed will have the required 1100N force rating wall reinforcement required by the standard
• Hand basin mounting height	Top of hand basin to be 800/830 mm above finish floor level
• Hand basin clearances	The clearances around and under the hand basin need to comply with the provisions of clause 15.3 of AES 1428.1:2009. Specific attention is drawn to the plumbing installation where the required clearances under the hand basin necessitate special consideration of the bottle trap associated with the hand basin
• Hand basin selection	The detailing of the hand basin requires the installation of a shelf unit. It may be possible to specify a hand basin that incorporates a shelf section thereby eliminating an additional component to be installed in the USAT
• Hand basin mirror	The mirror is to be flush mounted on the wall above the sink the bottom of the mirror is to be no more than 900 mm above the finish floor level and the top of the mirror is to be a minimum of 1850 mm above the finish floor level
• Hand basin tap	It is recommended that a lever hand basin tap be installed in lieu of the capstan type

• Toilet roll holder	The position of the toilet roll holder is to be in accordance with code requirements
• Coat hooks	Coat hooks can be installed 1200 to 1350 mm above finish floor level and not closer than 500 mm from an internal corner. The coat hook can be installed on the wall or on the back of the door
• Soap dispensers/hand towel	These items are to be able to be operated by one hand and shall be installed so that the tap or dispenser is not less than 900 and not more than 1100 mm above the finish floor level.
• Baby change facility	The plan does not indicate if there is a baby change facility located within this USAT. If a baby change table is installed within this facility, then the unit will need to be installed outside of the WC circulation zone
• Braille Tactile Signage	The detailing of the Braille Tactile Signage will need to comply with the provision of NCC Clause D3.6 and NCC Specification D3.6. The location of the Braille Tactile sign is to be mounted on the latchside wall. The sign is to indicate the handing of the grabrails to the WC Pan. The following is an example of the type of information to be provided in the Braille Tactile Sign. Details of Braille tactile signage are highlighted in the above Signage section of this report.

2.22. Ambulant Sanitary Facilities

NCC Reference:	NCC Clause F2.4 Accessible Sanitary Facilities
	NCC Clause D3.6
	NCC Specification D3.6
Australian Standard Reference:	Clause 16 of AS1428.1:2009

Where a single toilet or a bank of toilets are provided, ambulant sanitary facilities are required.

2.23. Signage

The requirements are referenced in the following legislation:

NCC Reference:	D3.2 Access to buildings D3.6 Signage Specification D3.6 D2.23 Signs on Doors
Australian Standard Reference:	Clause 8 – Signage, AS1428.4.1 2009 Design for access and mobility - Means to assist the orientation of people with vision impairment Clause 16 – Symbols, AS1428.4.2 1992 Design for access and mobility - Enhanced and additional requirements - Buildings and facilities Clause 17 – Signs, AS1428.4.2 1992 Design for access and mobility - Enhanced and additional requirements - Buildings and facilities DR AS1428.4.2-2017 Design for access and mobility – Wayfinding

2.23.1. Statutory Signage Requirements

The statutory requirements for signage apply to entrances, toilets, hearing augmentation and exits.

The applicable clauses to the topic of entrances of the NCC Section D3.6 Signage states:

In a building required to be accessible—

*(a) braille and tactile signage complying with **Specification D3.6** must—*

(i) incorporate the international symbol of access or deafness, as appropriate, in accordance with AS 1428.1 and identify each—

(A) sanitary facility,

(B) space with a hearing augmentation system; and

(ii) identify each door required by E4.5 to be provided with an exit sign and state—

*(A) **"Exit"**; and*

*(B) **"Level"** ; and either*

(aa) the floor level number; or

(bb) a floor level descriptor; or

(cc) a combination of (aa) and (bb); and

(b) signage including the international symbol for deafness in accordance with AS 1428.1 must be provided within a room containing a hearing augmentation system identifying—

(i) the type of hearing augmentation; and

(ii) the area covered within the room; and

(iii) if receivers are being used and where the receivers can be obtained; and

(c) signage in accordance with AS 1428.1 must be provided for accessible unisex sanitary facilities to identify if the facility is suitable for left or right-handed use; and

(d) signage to identify an ambulant accessible sanitary facility in accordance with AS 1428.1 must be located on the door of the facility; and

(e) *where a pedestrian entrance is not accessible, directional signage incorporating the international symbol of access, in accordance with AS 1428.1 must be provided to direct a person to the location of the nearest accessible pedestrian entrance; and*

(f) *where a bank of sanitary facilities is not provided with an accessible unisex sanitary facility, directional signage incorporating the international symbol of access in accordance with AS 1428.1 must be placed at the location of the sanitary facilities that are not accessible, to direct a person to the location of the nearest accessible unisex sanitary facility.*

DR AS 1428.4.2-2017, The Australian Standard for design for access and mobility – Wayfinding, specifies the minimum wayfinding sign requirements to enable pedestrians, particularly those who are blind, deafblind or have low vision, to enter and to navigate within buildings and/or sites, including a return route, in a safe and independent manner.

This Standard will also be of use to people with other disabilities who require enhanced information to communicate wayfinding information within buildings.

2.23.2. Entrances

In a building required to be accessible, the accessible entrance shall be not more than 50m from the main pedestrian entrance (NCC D3.2 (b)(ii)).

2.23.3. Exit Signage

AS2293.1:2005 outlines details for illuminated exit signs.

6.6 SIZE OF PICTORIAL ELEMENT

The minimum allowable size of any pictorial element on an exit sign shall be determined by the maximum viewing distance intended under the design as follows:

(a) For viewing distances not greater than 32 m, in accordance with Table 6.1.

TABLE 6.1

MINIMUM PICTORIAL ELEMENT HEIGHTS

Maximum viewing distance (m)	Minimum pictorial element height (mm)
16	100
24	150
32	200

(b) For viewing distances greater than 32 m, in accordance with the following equation:

$$\text{Minimum element height} = \frac{\text{Maximum viewing distance}}{160}$$

Braille tactile Exit signage will need to be provided at each level of the building associated with the fire egress door.

Examples of Braille Tactile Signage include:

(*Figure 25 – Examples of Braille Tactile Signage from* www.brailletactilesigns.com.au)

2.23.4. WC Signage

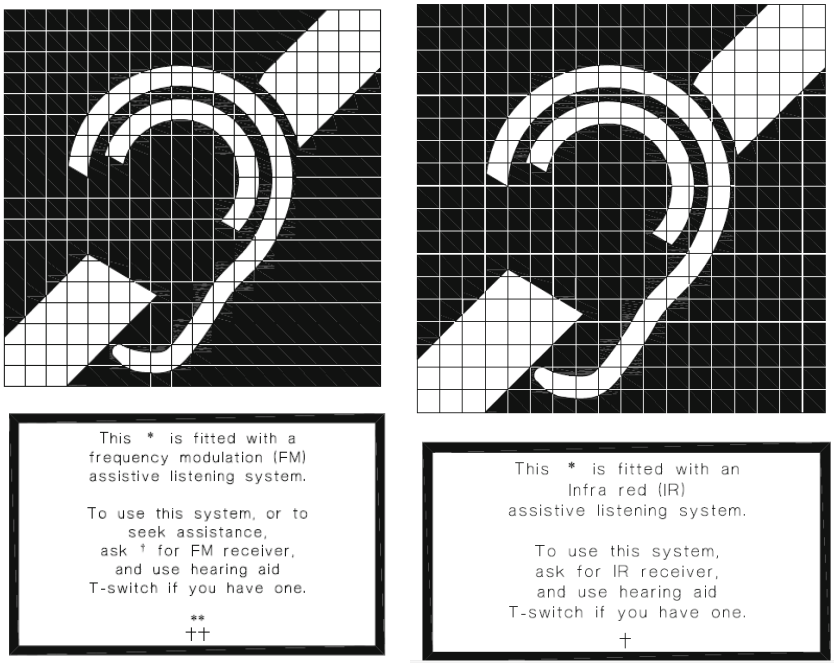
Braille tactile WC signage will need to be provided at each public sanitary facility entrance.

Examples of Braille Tactile Signage include:

NB: Text "Unisex Toilet RH" to be used where the toilet is configured adjacent to a wall on the right, and simialrly text "Unisex Toilet LH" is to be used where the toilet is adjacent to a wall on the left of the toilet pan.

2.23.5. Hearing Augmentation Signage

Braille tactile hearing augmentation signage will need to be provided in a room or area in which an inbuilt communication system is installed.



Examples of Braille Tactile Signage include:

The documentation provided indicates compliance with the above requirements (as per review of drawings A-6200-A6202)

Clause 8 of AS128.4.1:2009 and Clause 16 & Clause 17 AS1428.4.2 1992 specify the requirements of the Braille Tactile Signage.

2.23.6. General Signage Information – Maintenance

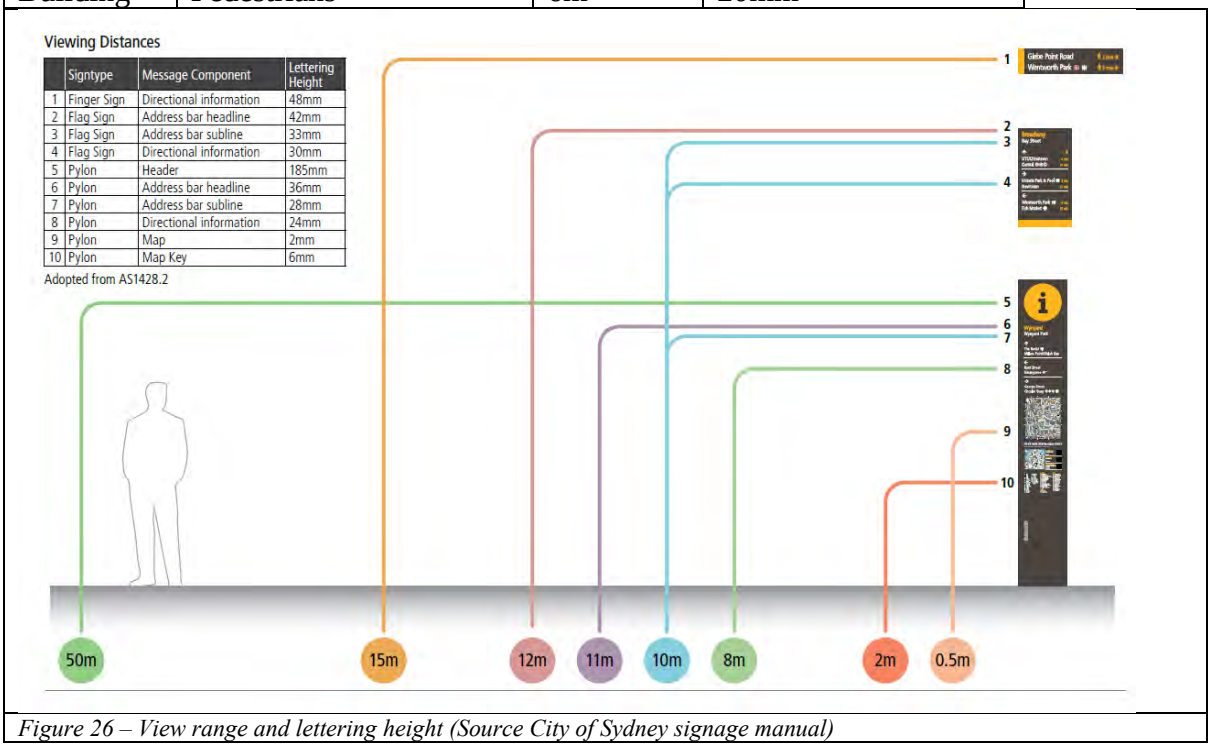
The maintenance of signage is vital. All signage should have a maintenance plan, including:

- Prohibiting of sticking posters/flyers up over permanent signage
- Incorporating a cleaning schedule
- Incorporating a maintenance schedule to review condition of signage
- Vegetation should be continually trimmed and upkeep is to be reviewed as part of the cemetery's landscape maintenance to ensure signage is not hidden behind vegetation.

2.23.7. General Signage Information – Sizing

The recommended size of signage is dependent on the distance by which it is aiming to be identified. The following summary is a recommended guideline:

Type	User	Distance	Letter Size (ref. Table 2 of AS1428.2:1992)
Gate/ Building	Ped. & Drivers	50m	150mm
Building	Pedestrians	25m	80mm
Building	Pedestrians	12m	40mm
Building	Pedestrians	6m	20mm



	Signtype	Message Component	Lettering Height
1	Finger Sign	Directional information	48mm
2	Flag Sign	Address bar headline	42mm
3	Flag Sign	Address bar subline	33mm
4	Flag Sign	Directional information	30mm
5	Pylon	Header	185mm
6	Pylon	Address bar headline	36mm
7	Pylon	Address bar subline	28mm
8	Pylon	Directional information	24mm
9	Pylon	Map	2mm
10	Pylon	Map Key	6mm

Figure 26 – View range and lettering height (Source City of Sydney signage manual)

The size of target boards shall be relative to the icon size.

Appendix D of AS1319:1994 (Safety Signs for the Occupational Environment) indicates the sizing of icons relative to their target board:-

Appendix D
(b) Single and multiple signs with target board.
The dimensions of the target board relative to the size of the symbolic sign(s) is shown in Figure D1.
The target board should be white or yellow for warning signs, and white only for other signs. Black may also be used for warning signs (see Clause 2.3.3(b)).

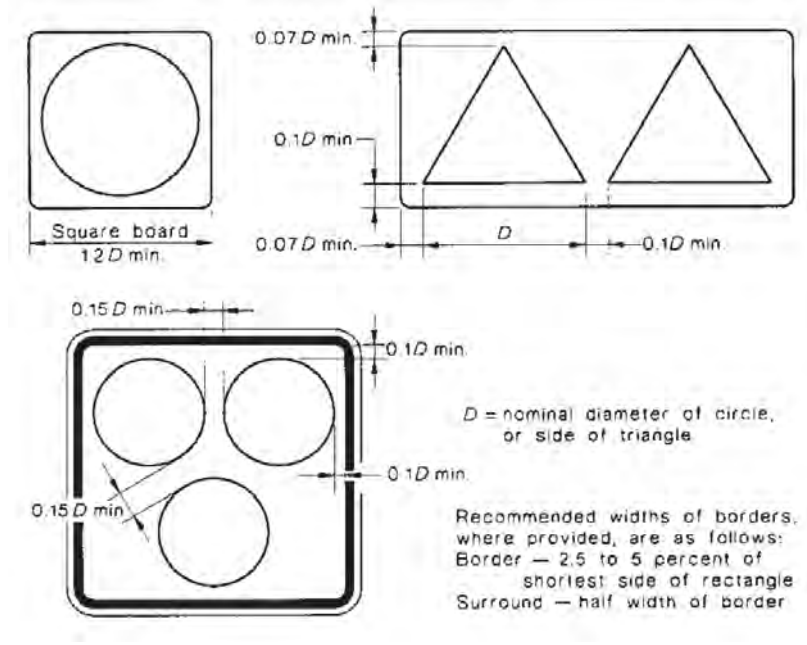


Figure 27 – Fig. D1 of AS1319:2994.

As appropriated from AS1319:1994 (Safety Signs for the Occupational Environment) Appendix D, the size of the sign (target board) shall be 1.2 x Diameter of the icon, with a minimum boarder of 0.07 x Diameter of the icon.

The following Sketch indicated the minimum sizing of icons and relative target board size surrounding the icons.

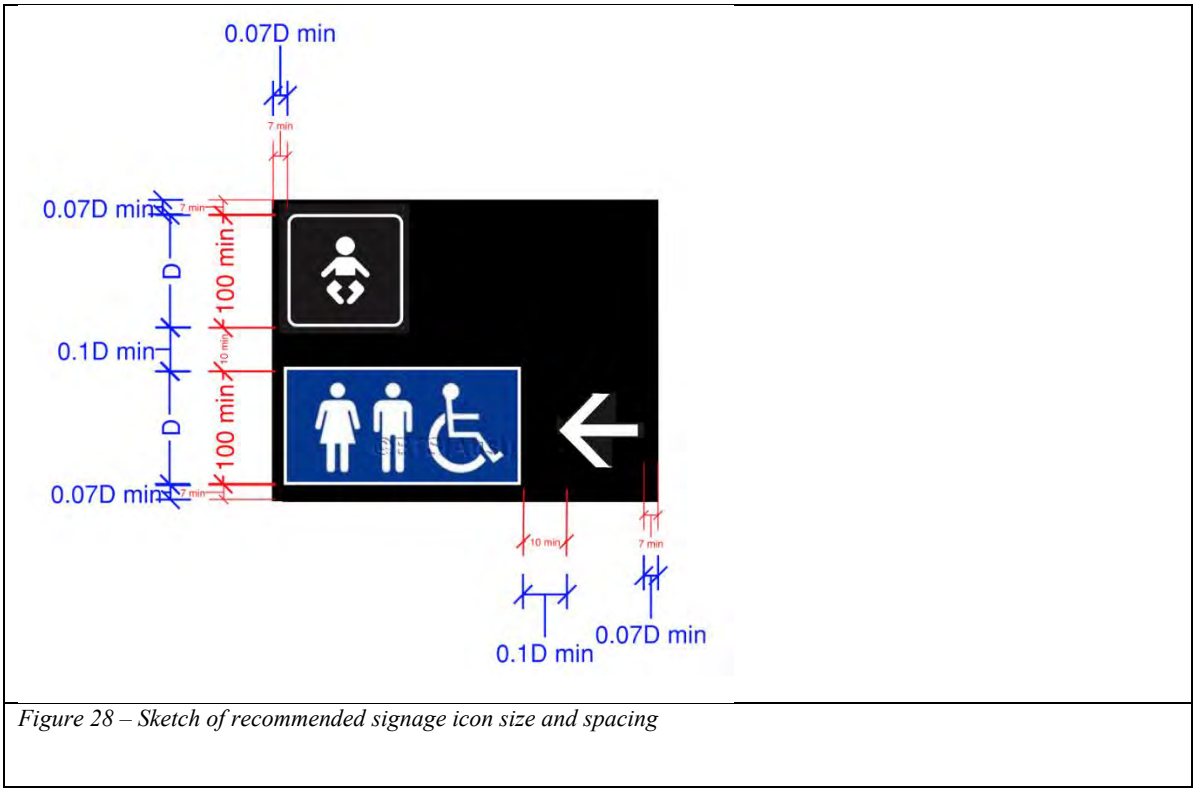


Figure 28 – Sketch of recommended signage icon size and spacing

The minimum size of an icon should be 100mm for overhead signage in accordance with Exit Sign requirements.

The size of icons should be in proportion to the size of the sign itself, as per the following recommendations:

Sign Size (appropriated from AS1319:1994)	Icon Size
60mm x 60mm (with boarder of 3.5mm)	50mm x 50mm
90mm x 90mm (with boarder of 5.2mm)	75mm x 75mm
120mm x 120mm (with boarder of 7mm)	100mm x 100mm

2.23.8. Mounting Heights

The mounting heights of signage will need to incorporate the viewing zones as identified in AS1428.2:1992.

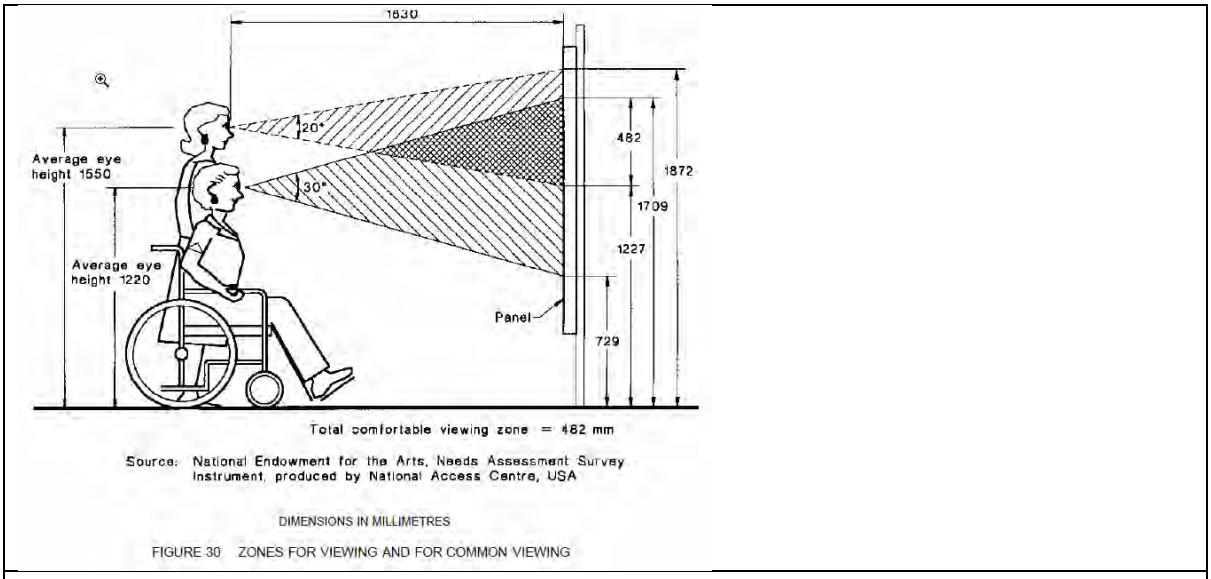


Figure 29 – Extract from Australian Standard indicating acceptable view range for signage

2.23.9. Luminance & Colour Contrast

Signs should be matt in colour, instead of a gloss finish to avoid any glare.

The minimum recommended luminance contrast for lettering on signage to the sign background is 30%.

The minimum recommended luminance contrast of a sign to its context is 30%.

2.24. Lighting

Further information should be provided, when available regarding lighting, particularly to key public areas and circulation areas (such as stairs and ramps).

Minimum lighting levels should be provided as per Clause 19 AS1428.2:1992 and AS1680 (DDA).

2.25. Way finding strategy

Statutory signage with tactile and Braille features will be required to meet NCC D3.6. Further consideration is recommended to determine the direction for the provision of Braille and tactile features to way-finding and directional signage, such as directory boards and the replication of suspended directional signage at lower heights. The use of interactive technology may also be beneficial to assist those unfamiliar with the hospital complex. Further discussion and detailing is recommended.

2.26. Emergency evacuation

Emergency evacuation of people with disabilities should be considered as part of management procedures, which may extend to the provision of a safe refuge and progressive horizontal evacuation.

Further discussion with the project fire engineer and building surveyor / certifier is required to ensure safe and efficient evacuation of people with disabilities, however a hospital building does lend itself to the safe evacuation of occupants with a disability by the suitable design of the fire safety measures allowing horizontal egress to a relative place of safety in the first instance.

2.27. NCC Clause D3.4 – Areas where accessible access is excluded

With consideration to the needs of prospective employees, patients and visitors, there are likely to be areas of the building where people with disabilities would not be expected to access, due to health and safety or other related reasons. D3.4 of the NCC does provide scope to exclude areas from access and reference should be made to this Clause at an early stage of the design. This is important to identify as it could compromise further design if an area is assumed to be exempt, but actually will require suitable accessibility.

It is understood that hospital management will facilitate the broad and individual needs of employees on an as needs basis, which may include temporary reassignment of tasks, buddying arrangements, further environmental modifications, or implementation of a suitable management plan to ensure direct assistance is available as required.

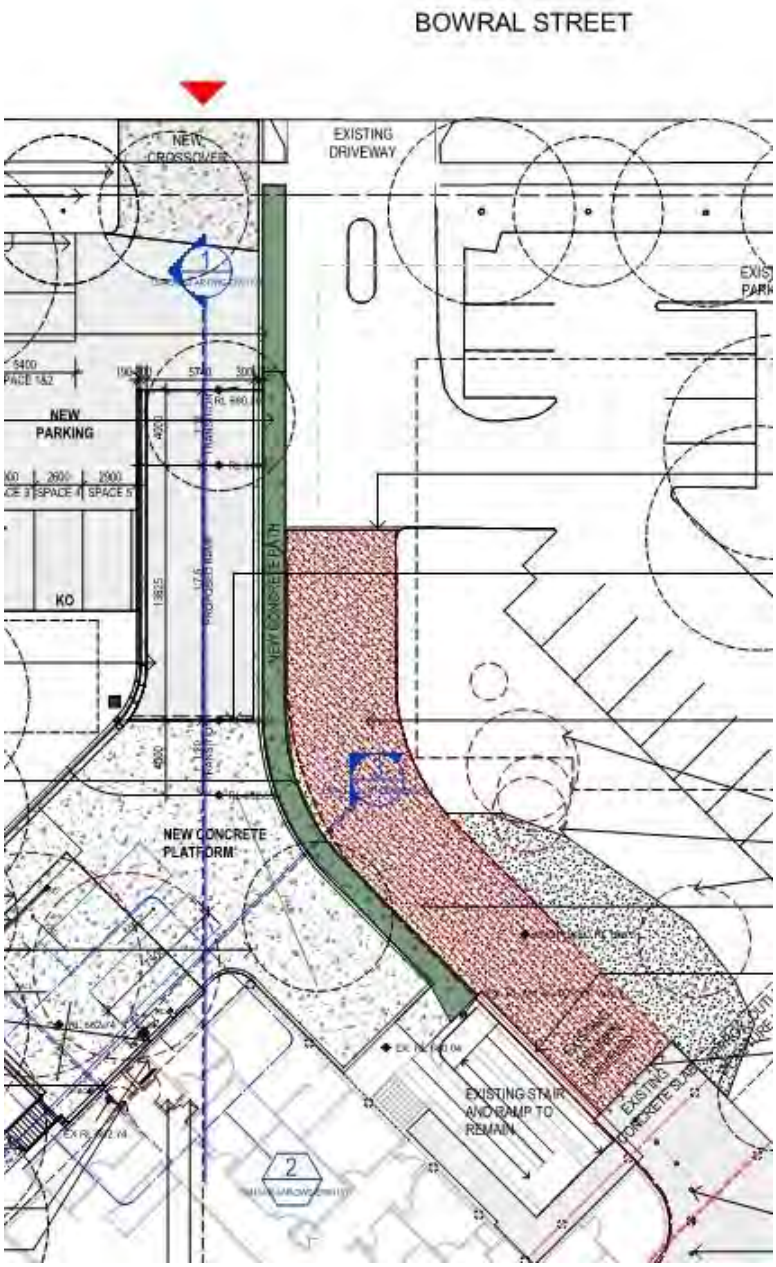
3. ENABLING WORKS

3.1. Accessible path of travel – Bowral Street

The following extract from the plan indicates the accessible path of travel from Bowral Street to the steps and ramp leading to the ED entry (highlighted in green).

The minimum clear width of the pathway is to be not less than 1m. It is preferred that the clear width be 1800mm. If the width is less than 1800mm then passing bays with the dimensions of 180 x 2000mm are to be provide at intervals not greater than 20m (NCC Clause D3.3(c)(ii)(B)).

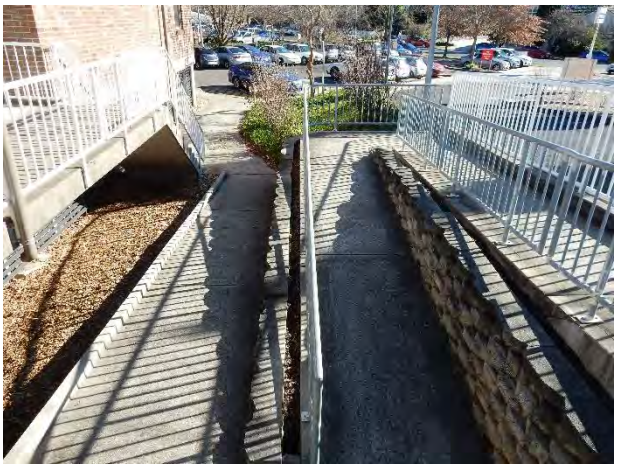
Details of any passing bay are to be provided.



3.2. Access to ED

The enabling works nominate the retention of the existing ambulance and public access points to the existing ED facilities. The proposed enabling works necessitate the demolition of the existing ambulance ramp, stairway and the accessible pedestrian ramp all accessed from the existing northern carpark.

The images following indicate the existing access arrangements from the Northern Public Carpark.



Two scenarios have proposed for consideration. Scenario 1 provides the least intrusive option for the Hospital.

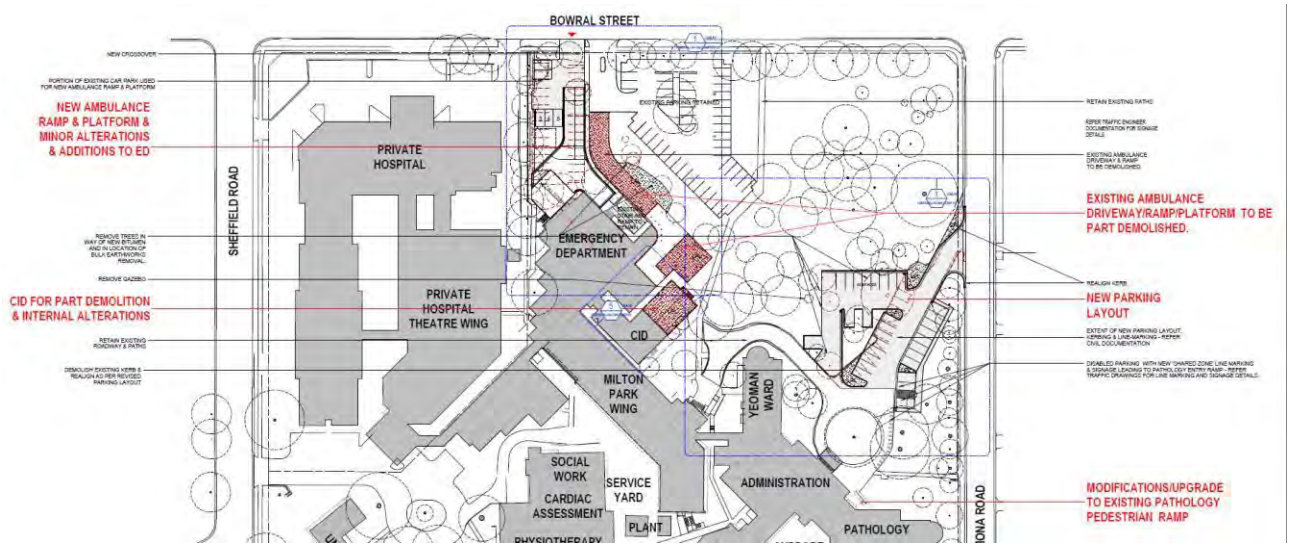


Figure 30 Proposed enabling works Scenario 1

Ambulance access to the ED podium is provided by way of a vehicle ramp from the eastern side of the site. Pedestrian accessible access would be provided by way of a new accessible 1:14 ramp connecting the existing northern public carpark with the public entry to the ED.

The change in level from the northern carpark is approximately 2.385m. The design length of the 1:14 ramp would need to be in the order of 33.39m + the length of 3 mid landings. The design of the 1:14 ramp would need to satisfy the provisions of Clause 10.3 of AS1428.1.

The minimum width of the 1:14 ramp will need to be not less than 1m between the handrails. It is recommended that the width of the ramp be 1.8m between the handrails. If this is not possible to be achieved, then it is recommended that the landings between the sections of ramps be a minimum of 1.8 x 2m to allow for passing bays for passing wheelchairs in accordance with the provisions of Clause 6.4 of AS1428.1:2009.

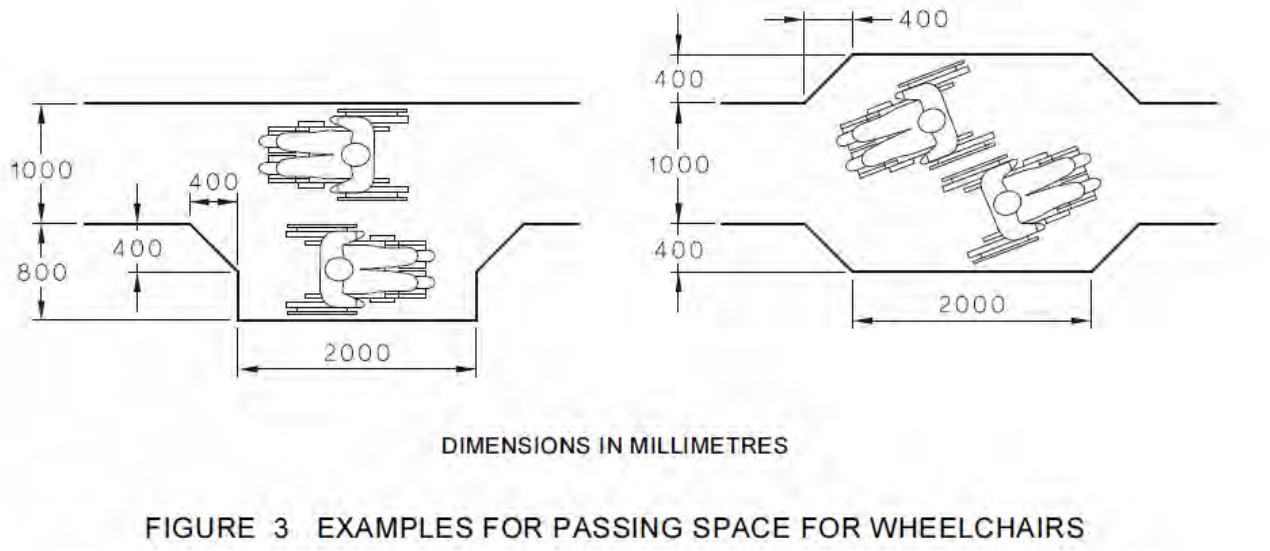


FIGURE 3 EXAMPLES FOR PASSING SPACE FOR WHEELCHAIRS

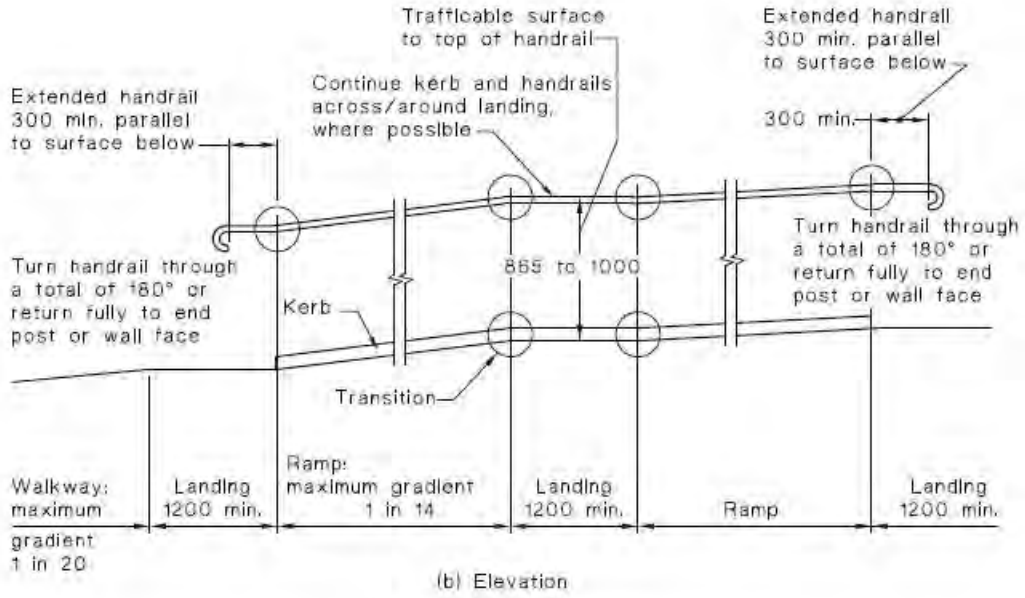
The landing at the top of the ramps system will need to provide sufficient circulation area for people to enter and exit the ED. It is likely that this area will be in the order of 3 x 3m.

3.3. Modifications to Ramp to Pathology

Drawing 130443-MSJ-AR-DWG-EW01102 indicates a scope of works to be undertaken to the ramp to the Pathology Department. The phot following indicates the existing ramp arrangement.

The maximum gradient of the ramp is to be 1:14.

The detailing of the handrails at the bottom of the ramp will need to satisfy the requirements of Clause 10.3(h) of AS1428.1:2009.



(b) Elevation

DIMENSIONS IN MILLIMETRES

FIGURE 14 RAMP HANDRAILS

The plan indicates that the surface of the ramp is to have a non-slip surface applied to the ramp. The slip resistance level to be achieved is to be P4/R11 in accordance with the requirements of NCC Table D2.14.

The width of the TGSIs at the top of the ramp may be reduced to 300mm as there is less than 3000mm to the wall at the top of the landing.

A clear 1500 x 1500mm landing will need to be provided at the top of the ramp section.

Details of the luminance contrast of the TGSIs proposed for this ramp will need to be provided. The plans nominate that TGSIs are to be provided to the bitumen drive finish. Fixing details will need to be considered. Perhaps an integrated TGSI tile system may be preferable in this instance.

The lighting level on the ramp will need to be 150lx (Clause 19 of AS1428.2:1992).

3.4. External Steel Exit Stair

The enabling works propose an external steel stair.

A non-slip nosing will need to be provided to these stairs.

The surface of the steel stair will need tom achieve a slip resistance of P4/R11 and the nosing detail will need to achieve a slip resistance of P4.

4. CONCLUSION

We have assessed the architectural documentation available to date and have reviewed the proposed building works with respect to Part D3 of the National Construction Code 2016 and the Premises Standard.

In the context of the broader obligations of the DDA which will apply to the new facilities once operational, it is recommended that an accessibility policy for the hospital be developed which defines the function of each space and the degree of accessibility to be achieved to and within that space. Development of an access policy will require further consultation with management and user groups.

The objective of an accessibility policy is to confirm commitment to achieving the intent of the Disability Discrimination Act 1992 (Cth) (DDA), primarily the provision of an equitable and accessible environment for all, regardless of disability or impairment (mainly Sections 22 and 23 of the DDA). It is understood that in special-use buildings, particularly within hospitals and other health care facilities, there may be some specialist functions, which by the nature of the tasks required to be undertaken, may be unsuitable by people with disabilities.

It is the purpose of the accessibility policy to define the use and function of identified, specialist areas and determine the suitability for full, partial or managed accessibility. Where full access is unachievable due to the required functions of the space, the policy may detail or include reference to the proposed management plan to be implemented, to ensure accessibility is not compromised.

Access and security to individual areas and likelihood of access by people with disabilities may be defined in accordance with the following:

CONDITION	ACCESSIBILITY
1. Area accessible by public, contractors, patients and visitors, including those who may have a disability;	Access by people with disabilities is highly likely and full compliance with AS 1428.1, AS 1428.2, NCC and additional DDA recommendations are to be satisfied.
2. Area secured, all visitors accompanied	Access by people with disabilities is likely, however may be managed on a case by case basis.
3. Area secured and accessible by employees only;	Environmental modifications and staff facilitation to be reviewed and undertaken as required.
4. Function and tasks likely to be undertaken by ambulant personnel only;	Highly unlikely access by people with disabilities will be required in the future. This may include dirty linen or other service and maintenance areas.

This accessibility report has been provided to assist the client and the project team to determine the suitability for access features and facilities.