

Our Ref: DDA 1140

24th January 2019

Hamish Crookes
Richard Crookes Constructions Pty Ltd
Level 3, 4 Broadcast Way
Artarmon, NSW 2064

Attention: **Hamish Crookes**

Dear Hamish:

Re: SSDA Assessment Report
Project: Alex Avenue Primary School
Address: Pelican Road, Schofields, NSW 2762

Certis Access Consultancy provides the following professional opinion in regards to access for people with disabilities to, and throughout, the new Alex Avenue Primary School, located at Pelican Road, Schofields, NSW 2762.

1.0 INTRODUCTION

This SSDA report has been prepared for the new Alex Avenue School and represents a review of all aspects of access to, and within, the new building work, with respect to the Building Code of Australia (BCA), Disability Discrimination Act 1992 (Cth) (DDA), AS1428.1-2009 and other relevant Australian Standards as applicable to this project. The review will also ensure that equitable access is provided to and within the development and any relevant information contained within the Blacktown Development Control Plan 2015.

Following the Disability (Access to Premises-Buildings) Standards 2010 should ensure that obligations under the Disability Discrimination Act 1992 (DDA) are met with regards to matters covered by the standard. However the report will also provide advice in relation to the broader obligations under the DDA, which should be considered as the scheme develops. The DDA elements are more focused on management policy and procedure, both in theory and practice. Meeting the principles of the DDA may have little impact on the design, however there may be elements that the client should consider further before any works are undertaken.

1.1 DETAILS OF THE SCHEME

The proposals include the new development of a new public school campus consisting of two (2) storey school classrooms connected by pedestrian walkways, a school assembly hall and outdoor playgrounds.

It is understood from the Building Surveyor that the buildings have been considered as Class 9b.

1.2 TECHNICAL DOCUMENTATION USED FOR ASSESSMENT

The following documentation has been used as reference material (where appropriate), in making recommendations:

- Disability Discrimination Act 1992 (DDA)
- National Construction Code Series Building Code of Australia – Volume One (BCA 2016) – *Particularly Parts D3, Access for people with disabilities; Part E3, Lift installations; and Part F2, Sanitary and other facilities*
- Advisory Notes on Access to Premises 1996 (Human Rights and Equal Opportunities Commission)
- Australian Standard AS1428.1 – 2009 – *Design for access and mobility. Part 1: General requirement for access*
- Australian Standard AS1428.2 - 1992 – *Design for access and mobility. Part 2: Enhanced and additional requirements – Buildings and facilities*
- Australian Standard AS1428.4 - 2009 – *Design for access and mobility. Part 4: Tactile Indicators*
- AS 1735.1 - 2003/Amdt 1 – 2006 - *Lifts, escalators and moving walks - General requirements*
- Australian Standard AS1735.12 - 1999 – *Lifts, escalators and moving walks. Part 12: Facilities for persons with disabilities*
- Australian Standard AS2890.6 - 2009 – *Parking facilities – Off-street car parking*
- Disability (Access to Premises – Buildings) Standard 2010
- Disability Standards for Education 2005

1.3 LEGISLATION

The Disability Standards for Education 2005 are applicable to education providers and have the objective to eliminate, as far as possible, discrimination against persons on the grounds of disability in the area of education and training and to ensure, as far as practicable, that persons with disabilities have the same rights to equality before the law in the area of education and training as the rest of the community. It also aims to promote recognition and acceptance within the community of the principle that persons with disabilities have the same fundamental rights as the rest of the community.

These standards aim to specify how education and training are made accessible to students with disabilities. They cover the following areas:

- Enrolment
- Participation
- Curriculum development, accreditation and delivery
- Student support services
- Elimination of harassment and victimization.

Part 3 of the Standards requires that reasonable adjustments are made in respect of providing education for people with a disability. For this assessment we are only going to consider adjustments in respect to physical access into buildings and associated 'premises', therefore the applicable standard is the Disability (Access to Premises- Buildings) Standards 2010.

The Disability (Access to Premises- Buildings) Standards 2010 came into force on the 1st May 2011. The purpose of these Standards is to provide for equitable and dignified access to new buildings and those areas of existing buildings that undergo renovation or upgrade that require a building approval.

If a building complies with the Premises Standards those responsible for the building cannot be subject to a successful complaint of unlawful discrimination under the Disability Discrimination Act (DDA) in relation to matters covered by the Premises Standards.

Building Certifiers, Building Developers and Building Managers all have obligations under the Standards and must ensure a building complies with the Standards, with each party being responsible for the area they have control over. It is unlawful to fail to comply with the requirements of the Premises Standards.

The Building Code of Australia aligns with the requirements of the Premises Standards and therefore new building work that complies with the NCC (BCA) will also comply with the Premises Standards. However the Premises Standard places additional requirements on existing buildings where building work is being undertaken. The requirements for the new part of an existing building to comply with the Standards is limited to the actual work identified in the building approval and does not extend to other parts of the building which the new part is located. However the Premises Standards recognises that in most circumstances it will be necessary to provide an accessible path of travel to the new or modified part and has therefore introduced the concept of 'affected part'. The 'affected part' is not triggered as the project relates to new development only.

The following documentation prepared by Group GSA was reviewed as part of our assessment:

190115_ALEX_GF [2]
190115_ALEX_L01 [2]
190115_ALEX_ROOF [2]
190115_Landscape
190115_Markup

2.0 NCC (BCA) CLASSIFICATION

The relevant Building Surveyor has advised that the proposed buildings are being assessed against NCC (BCA) 2016, and that the entire development has been classified as follows:

Proposed Use	Building Classification
Assembly Building (School)	Class 9b

2.1 KEY ITEMS

With regards to the NCC the following items have been highlighted as potential issues and are **required** to be addressed.

- When detailing dimensions for fixtures, fittings and circulation spaces consideration should be given to construction tolerances to ensure items are installed in accordance with the Standards.
- Provide site level details to confirm that the 3 pedestrian entrances and accessways are accessible.
- Entrance doors are to be in accordance with Clause 13 of AS1428.1.
- Thresholds to doorways are to be level or be provided with a threshold ramp.
- Stairs are to be designed in accordance with Clause 11 AS1428.1 2009 and be provided with appropriate TGSIs.
- The proposed lift is required to be in accordance with AS 1735.12 1992. Further information is required as the design proceeds.
- New unisex accessible sanitary accommodation to be in accordance with Clause 15 AS1428.1.
- Ambulant sanitary facilities are required to the boys and girls toilets within the proposed buildings
- Further consideration needs to be given to the provision of accessible sanitary facilities for members of staff and visitors.
- Signage to be provided in accordance with AS1428.1 and include Braille and tactile specifications. This is required to the accessible sanitary facilities, doors requiring an exit sign and any areas with hearing augmentation.
- A hearing augmentation system needs to be provided if an inbuilt amplification system (other than one used solely for emergency warning) is installed.
- Tactile indicators must be provided in appropriate locations and comply with sections 1 & 2 of AS 1428.4.1.
- Glazed areas to have appropriate decals in accordance with AS1428.1.
- Wheelchair spaces are required to any proposed fixed seating areas.

2.2 DDA

The following is **best practice advice** to allow for a design that will be better placed to offer access and use for all, offer more flexibility for future use and provide a higher degree of protection against litigation under the DDA.

- Consideration should be given to the specification of finishes to ensure appropriate colour contrast is provided between elements.
- Consideration of the design of counters and positioning of appliances should be given. AS 1428.2 has further information.
- Consideration should be given to the type and specification of external furniture and any equipment provided. AS 1428.2 provides further information. Pathways should be continuous to the area it is leading to.
- Consideration should be given to the signage and way finding strategy throughout the site.
- Consideration of how people with disabilities will evacuate the premises in an emergency situation.

3.0 ACCESS PROVISIONS

BCA D3.1 requires a Class 9b premises to be accessible to:

Class	Parts of Building required to be accessible (unless exempted by D3.4)
Class 9b (School)	To and within all areas normally used by the occupants

4.0 ACCESS CODE OF THE PREMISES STANDARD ASSESSMENT

Certis Access confirms that access to and through the development has been assessed against the attached DA documentation provided to date and which is referenced within this report:

Part D3	Access for people with a disability	Comment
D3.1	General building access requirements	<p>Class 9b Schools -To and within all areas normally used by the occupants.</p> <p>Compliance can be achieved.</p>
D3.2	<p>Access to buildings</p> <p>An accessway must be provided to the new building from:</p> <ul style="list-style-type: none"> (i) the main points of a pedestrian entry at the allotment boundary; and (ii) another accessible building connected by a pedestrian link; and (iii) Any existing accessible car parking space on the allotment. 	<p>There are 3 pedestrian entrances identified on the plans. These entries are capable of compliance however no levels are provided to establish if there is an accessible path of travel leading to the buildings. Further information is required as the design progresses.</p> <p>The principal pedestrian entrance into each building will need to be in accordance with AS 1428.1 2009. The minimum clear width of the entrances are required to be 850mm, where multiple leaves are used an unobstructed width of 850mm must be maintained to at least one doorway leaf.</p> <p>Circulation spaces are required at doorways in accordance with clause 13.3 of AS 1428.1. Where power operated doors are provided and the approach requires a wheelchair to turn through the door from a side on approach the W_L or W_H dimensions are only required on the approach side. Where a sliding door is power operated and there is a front approach the W_L or W_H does not apply.</p> <p>Consideration needs to be given to the threshold detail to ensure either level access or a suitable threshold ramp is provided.</p> <p>The entrance doors are required to have appropriate luminance contrast (Clause 13.1) and hardware in accordance with Clause 13.5.</p> <p>Further information is required.</p> <p>Accessways should have a continuous accessible path of travel which has a minimum unobstructed width of 1000mm in accordance with AS 1428.1. Where paths are less than 1800mm wide then passing places (1800w x 2000mm) at no more than 20m intervals are required.</p> <p>Ramps are indicated on the landscape markup. Any ramps with a 1:20 or steeper gradient are required to be in accordance with AS1428.1 and will need TGSIs, handrails etc. If the gradients are no steeper than 1:20 there is no requirement for handrails or TGSIs.</p> <p>External stairs are required to be in accordance with Clause 11 of AS1428.1. No details have been provided to assess.</p>

<div data-bbox="170 1131 767 1155" data-label="Text"> <p>D3.3</p> </div>	<div data-bbox="301 324 668 349" data-label="Text"> <p>Parts of buildings to be accessible</p> </div> <div data-bbox="301 387 464 409" data-label="Section-Header"> <p>Internal doors</p> </div> <div data-bbox="777 333 1420 611" data-label="Text"> <p>Doors to areas required to be accessible should have a minimum clear opening of 850mm under AS 1428.1. Where multiple leaves are used an unobstructed width of 850mm must be maintained to at least one doorway leaf. Circulation spaces are required at doorways in accordance with clause 13.3 of AS 1428.1. Door hardware and any security measures must be selected and installed to comply with the requirements of AS 1428.1. This will include any snibs to internal locking devices.</p> </div> <div data-bbox="777 647 1420 734" data-label="Text"> <p>When available forward further details, including door schedule, legend and hardware details for review of the following:</p> </div> <div data-bbox="876 770 1378 925" data-label="List-Group"> <ul style="list-style-type: none"> • Door types noting minimum door operation weights; • Door handles; • Door locks; • Door closers. </div> <div data-bbox="777 996 1420 1050" data-label="Text"> <p>All doorways must have a minimum 30% luminance contrast minimum 50mm wide between:</p> </div> <div data-bbox="826 1106 1155 1267" data-label="List-Group"> <ul style="list-style-type: none"> • Door leaf and jamb • Door leaf & adjacent wall • Architrave & wall • Door leaf & architrave; or • Door jamb & adjacent wall </div> <div data-bbox="777 1357 1420 1541" data-label="Text"> <p>The distances between doorways in vestibules, airlocks and other similarly enclosed spaces shall not be less than 1450mm. Where the doors encroach into space, the distance shall be not less than 1450mm plus the door leaf width except for air locks leading directly to ambulant toilets where a minimum 900mm x 900mm clear zone is required.</p> </div> <div data-bbox="301 1590 477 1612" data-label="Section-Header"> <p>Access Routes</p> </div> <div data-bbox="777 1621 1420 1677" data-label="Text"> <p>A continuous accessible path of travel minimum 1000mm wide is required and appears to be achievable.</p> </div> <div data-bbox="777 1700 1420 1850" data-label="Text"> <p>Passing places for 2 wheelchairs minimum 1800mm wide and 2000mm long must be provided at maximum 20m intervals. Turning spaces are also required within 2m of the end of accessways where it is not possible to continue on. These are as follows:</p> </div> <div data-bbox="826 1877 1339 1982" data-label="List-Group"> <ul style="list-style-type: none"> • 60°-90°turn 1500mm wide by 1500mm long • 90°-180° turn 1540mm wide by 2070mm in direction of travel. </div>
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	<p>Stairs</p> <p>Ramps</p>	<p>Floor finishes must be slip resistant. The pile height of any carpet shall not exceed 11mm and the carpet backing thickness shall not exceed 4mm. Recessed matting must not be more than 3mm vertically or 5mm if rounded or bevelled above or below the surrounding surface. Further information is required.</p> <p>All stairs (except fire isolated stairs) should be in accordance with clause 11 of AS 1428.1, including any external stairs. Fire isolated stairs are required to have suitable luminance contrast to nosings. There appears to be numerous new stairs which are all required to be in accordance with Clause 11 of AS1428.1.</p> <p>Any ramps provided (except fire isolated ramps) shall be in accordance with clause 10 of AS 1428.1.</p>
D3.4	Exemptions	<p>Exemptions</p> <p>Clause D3.4 of the NCC allows exemptions for areas that would pose a health and safety risk for people with disabilities or an area which could be considered inappropriate because of the particular purpose for which the area is used.</p> <p>For this project any store rooms/data rooms and plant rooms may be considered as being exempt.</p>
D3.5	Accessible carparking	<p>No car parking is identified on the plans. Accessible carparking spaces will need to be allocated as per table D3.5 of the BCA and for a class 9b (school) building, 1 accessible carparking space in accordance with AS2890.6-2009 is required for every 100 carparking spaces or part thereof.</p>
D3.6	Signage	<p>Further information will be required to assess the suitability of signage. Signage needs to be provided in accordance with AS1428.1 and include Braille and tactile specifications. In particular signage will be required to accessible and ambulant sanitary facilities, each door required by E4. to be provided with an exit sign, stating 'exit and floor level' and spaces with hearing augmentation</p>
D3.7	Hearing augmentation	<p>A hearing augmentation system needs to be provided if an inbuilt amplification system (other than one used solely for emergency warning) is installed.</p> <p>Any screen or scoreboard associated with a Class 9b building and capable of displaying public announcements must be capable of supplementing any public address system, other than a public address system used for emergency warning purposes only. Further information is required.</p>

D3.8	Tactile indicators	<p>Tactile indicators will be required in the following locations:</p> <ul style="list-style-type: none"> • Stairways (other than fire isolated stairways). • Ramps (other than a step or kerb ramp). • Where an overhead obstruction is less than 2m (except doorways) if no suitable barrier is provided • Where an accessway adjacent to a pedestrian entrance meets a vehicular way if there is no kerb or kerb ramp at that point. <p>Tactile indicators must comply with sections 1 & 2 of AS 1428.4.1</p> <p>TGSI's are not identified on the drawings but are required to all stairs and ramps steeper than 1:20. Further information is required to assess suitability.</p>
D3.9	Wheelchair seating spaces in Class 9b assembly buildings	<p>It is understood that the seats within the hall are not fixed. The fixed seating around the basketball courts must also include wheelchair seating spaces.</p> <p>Under the NCC D3.9 the number of wheelchair seating spaces for 151 to 800 fixed seats is 3 spaces, plus 1 additional space for each additional 50 seats or part thereof in excess of 150 seats.</p>
D3.11	Ramps	Any ramps provided (except fire isolated ramps) shall be in accordance with clause 10 of AS 1428.1-2009
D3.12	Glazing on an accessway	Design team to consider areas of glazing which could be mistaken as a doorway which may need decals markings to AS1428.1. Decals should comprise of a solid non transparent contrasting line which is a minimum of 75mm and extends the whole length of the glazing panel. This should be positioned between 900-1000mm from finished floor level.
Part E3	Lift installations	Comments
E3.6	Passenger lifts	<p>A new lift is indicated between Block A and B1, this will be required to be in accordance with AS1735.12.</p> <p>This would include:</p> <ul style="list-style-type: none"> • Handrail in accordance with clause 5.3 • Lift floor dimensions min 1100 x 1400mm where the lift travels less than 12m. • Minimum clear door opening of 900mm. • Have a passenger protection system. • Have car control buttons complying with clause 7 including:

		<ul style="list-style-type: none"> ▪ Lift control buttons on each landing sited between 900-1200mm from floor level and a minimum of 500mm away from any internal corner of obstruction ▪ Control buttons within lift car between 700-1250mm above floor level and located where it is able to be tangentially touched by a horizontal disc with a radius of 300mm, where it is located adjacent to a door entrance and 400mm for all other locations. ▪ Have appropriate tactile and Braille symbols ▪ Have audible and visual indication at each landing to indicate the arrival of the lift car.
Part F2	Accessible sanitary facilities	Comments
F2.4 (a) (b)	Accessible unisex sanitary facilities	<p>There are numerous unisex accessible toilets located on the ground floor and Level 1 of the proposed new buildings. These are required to be designed in accordance with AS1428.1. Further information is required to assess.</p> <p>A number of the unisex accessible toilets include accessible showers. These should be designed in accordance with AS 1428.1. Further information is required as the design progresses.</p>
F2.4 (c)	Ambulant sanitary facilities	Non accessible toilets are also indicated on both levels adjacent or near to the unisex accessible toilets and these must also include ambulant sanitary compartments in accordance with the NCC and Clause 16 of AS1428.1.

5.0 CONCLUSION

This report has been prepared at the request of the applicant and does not absolve the applicant and owner of the requirements pursuant of the Disability Discrimination Act 1992 (Cth).

Certis Access Consultancy has endeavored to ensure all key aspects of access provision have been addressed and that all reasonable attempts have been made to identify the main matters pursuant to the DDA. This professional opinion is based upon assessment of DA documentation to date, and to ensure the design principles are adhered to for the construction stage. On this basis, we believe that the development at DA stage is capable of compliance without any major concern and that the development can achieve a reasonable level of access and meet statutory requirements when considering the Certificate of Classification.

6.0 DDA COMMENTARY

The Disability Discrimination Act 1992 (DDA) states it is unlawful to discriminate on the basis of disability, protecting persons with disability and their associates. Section 22 of the DDA relates to Education whilst section 23 relates to access to premises and states it is unlawful to:

- Deny students access, or limit students access to any benefit provided by the education authority
- Refuse access to, or the use of, any premises, or the facilities within them.
- Impose terms or conditions specific to persons with disability and their associates on the access and use of any premises or facilities;
- Exclude access based on the provision of an appropriate means of access;
- Request persons with disability or their associates to leave premises or cease use of facilities

The DDA also addresses discrimination in other areas, including:

- In employment (Sections 15 to 21);
- Provision of goods, services and facilities (Section 24);
- Accommodation (Section 25);
- Administration of Commonwealth laws and programs (Section 29);
- Requests for information (Section 30)

There is a misconception that compliance with the NCC/Premises Standards equals compliance with the DDA; however there is a lack of uniformity between these legislative documents means that whilst the physical aspect of the building may comply with DDA requirements it is important to note that the Building Management should consider the implementation of some Access Management Plan to minimise potential litigation under the DDA with constant review built in to its application and use.

The requirements set out in the NCC and Disability (Access to Premises – Buildings) Standards reference AS1428.1 which is designed for people between the ages of 18-60 and therefore consideration should be given to the use of the building and the age range that will be occupying and using the facilities. AS1428.3 Requirements for children & adolescents with physical disabilities should be referenced to provide enhanced design features suitable for the younger age group. AS1428.2 also offers advice on enhanced features.

Additional Physical Building design aspects which although not covered in the NCC or Premises Standards which could be considered at this stage (not exhaustive but could form the basis for further consideration) are as follows:

6.1 SURFACE FINISHES

Floor, wall, door and ceiling finishes can help or hinder the use of buildings by people with disabilities. E.g. blind or partially sighted people and people who are deaf or hard of hearing might have difficulty finding their way around spaces if they cannot respond to visual cues or find it difficult to distinguish sounds in an acoustically reverberant environment.

When considering surface finishes, the following should be considered:

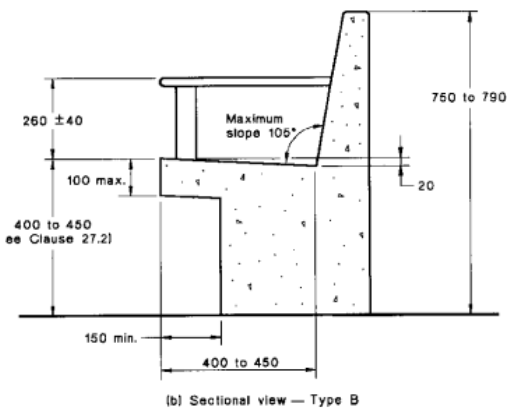
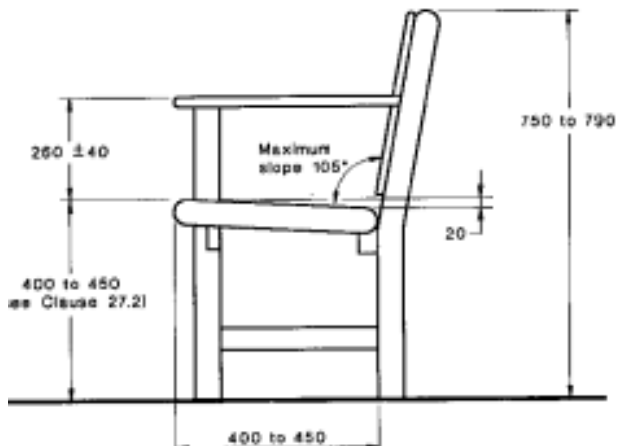
- Colour, pattern, luminance contrast and texture of the surfaces. Shiny surfaces can cause glare and reflections which can confuse people with vision impairments. Certain patterns of carpets can cause confusion for example strips across the path of travel can be confused as steps by people with vision impairments.
- The definition of features e.g. the treatment of components and finishing elements such as doors, architraves and skirtings can be designed to define elements. Consider providing luminance contrast of floor finishes against wall finishes, hardware against doors, fittings to sanitary accommodation against surrounding walls and floors.
- Consider the acoustic environment e.g. hard surfaces reflect sound and create a noisy environment in which a person with a hearing impairment may have difficulty understanding what is being said.
- Slip resistance properties of floor finishes. Ensure adjacent surfaces have similar slip resistance properties to prevent slipping or tripping.
- Excessive use of glazing. Glazing can often give the illusion that there is unimpeded access even when decals are provided in accordance with the NCC, if large areas of glazing are to be specified consider using greater areas of manifestation.

6.2 FURNITURE

6.2.1 SEATING

AS 1428.2 provides guidance on suitable ranges of seating depending upon the occupant profile. Consider seat styles and where possible always offer a range of different types of seats. If a seat is too high or too low or if there are no armrests or side supports a person with disabilities can experience considerable discomfort as a result of poor posture. A person may also experience difficulty rising from the seated position if the seat is too low or has no armrests.

Figure 32 of AS1428.2 gives typical seating details to consider.



However when designing for children reference should be made to Table 8 of AS1428.3

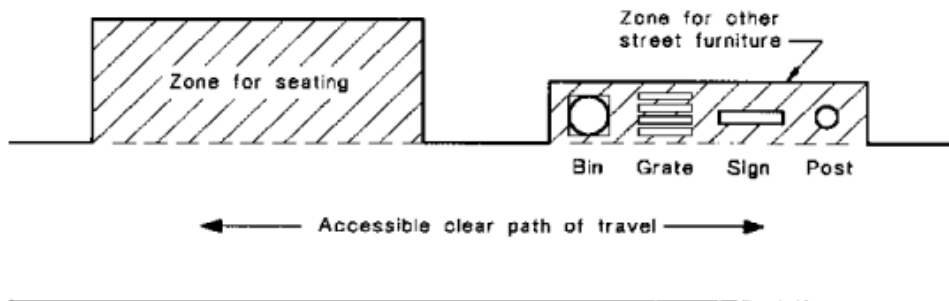
**TABLE 8
SEAT HEIGHTS**

Age range years	Height and adjustment range*					
	mm					
	Groups A and S			Groups M and E		
	Preferred height	Range		Preferred height	Range	
		Above	Below		Above	Below
≥3 ≤6½	300	50	50	410	50	75
>6½ ≤10½	320	75	50	510	50	75
>10½ ≤14½	410	50	50	590	50	75
>14½ ≤18	435	50	75	595	50	75

* Tolerance ±10 mm.

Consider also the location of seating and manoeuvring space around the seats. Do not site directly on a path of travel but consider setting back to allow for the seat and peoples feet when sitting down, however ensure that they are is a suitable connecting path of travel to access the seat. AS1428.2 suggests a minimum of 500mm (zone for feet).

Figure 31 indicates the preferred zone.



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

For internal seating the layouts should be designed to allow for passing of people who use mobility aids and ensure there is sufficient turning spaces at the end of rows of seating.

6.2.2 BENCHES/WORKTOPS INCLUDING RECEPTION DESKS

Consider the heights of tables, counters, desks and worktops. Where possible incorporate benches at both higher and lower heights. AS1428.2 Clause 24 offers more guidance. Also consider the clear space beneath to enable people who use wheelchairs or other mobility aids to be able to position themselves close enough to be able to use the worktop.

Table 9 of AS1428.3 provides further detailed heights for children

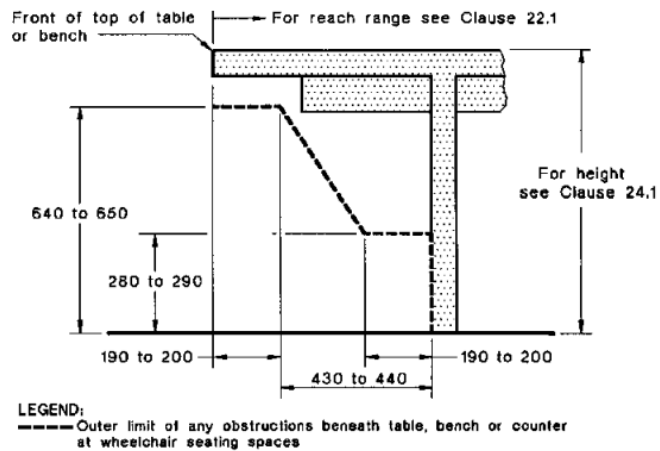
**TABLE 9
TABLE HEIGHTS**

Age range years	Height and adjustment range* mm					
	Groups A and S			Groups M and E		
	Preferred height	Range		Preferred height	Range	
		Highest	Lowest		Highest	Lowest
≥3 ≤6½	600	660	565	680	770	625
>6½ ≤10½	635	700	595	700	780	690
>10½ ≤14½	720	770	655	730	840	710
>14½ ≤18	750	780	700	770	870	700

* Tolerance ±10 mm.

6.2.3 KITCHENETTE/SINK AREAS

As discussed in section 4.2.2 above consider the bench heights and allow for suitable clearances under. Consider position of key facilities such as sink, dishwashers, hobs, microwaves and ensure adequate clear space is provided to access these areas. Consider the reach ranges discussed in section 4.3.



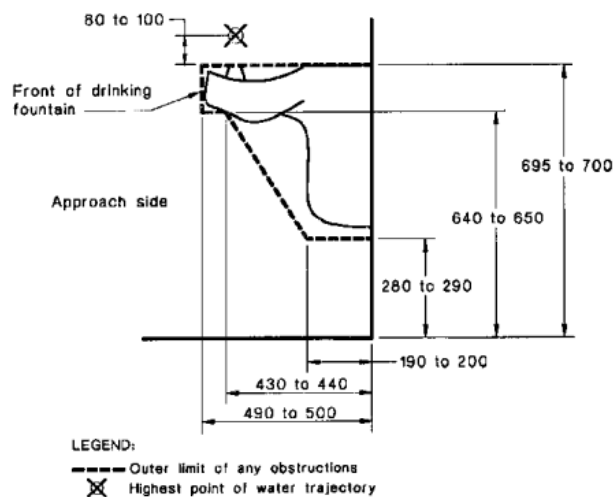
NOTE: For width of seating spaces see Clause 24.1.3.

DIMENSIONS IN MILLIMETRES

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

6. 2.4 DRINKING FOUNTAINS

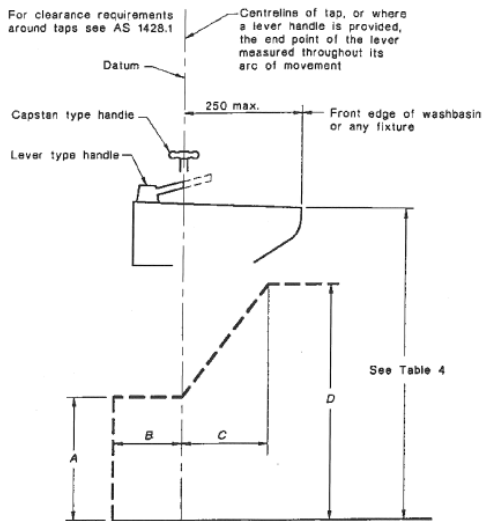
AS1428.2 gives specific guidance on the design of drinking fountains and water coolers. In particular figure 33 provides guidance.



DIMENSIONS IN MILLIMETRES

FIGURE 33 DRINKING FOUNTAINS AND WATER COOLERS

Further guidance is given in AS1428.3 with regards to suitable heights for children.



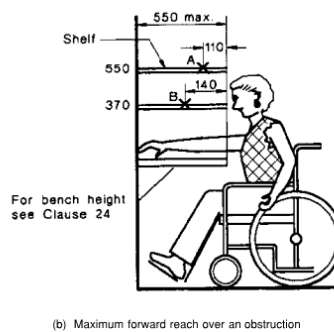
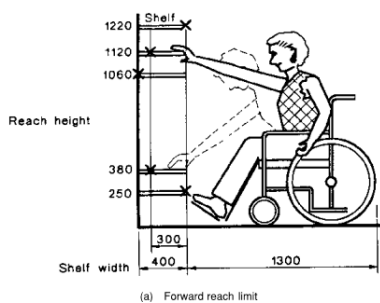
Age range years	Dimension* mm			
	A	B	C	D
≥3 ≤6 1/2	330	100	100	575
>6 1/2 ≤10 1/2	380	130	170	640
>10 1/2 ≤14 1/2	390	170	230	660
>14 1/2 ≤18	340	190	240	650

* Tolerance ±10 mm

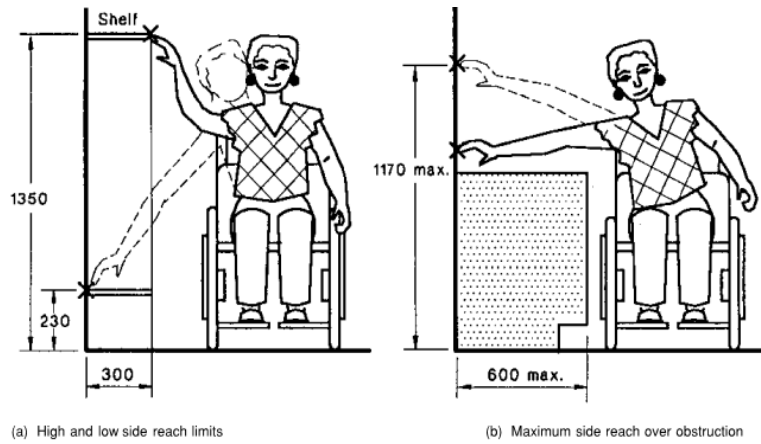
6.3 REACH RANGES

Consider reach ranges when designing shelving and placing coat hooks, bag racks etc.

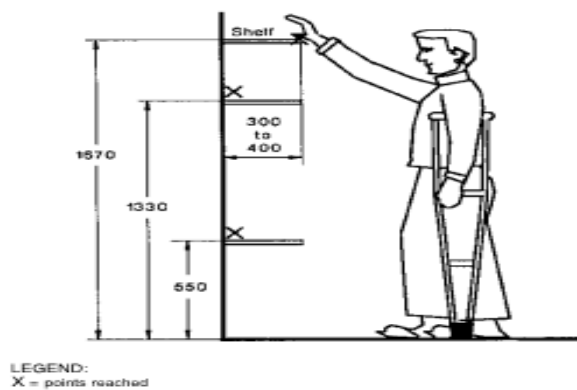
Forward reach



Side reach



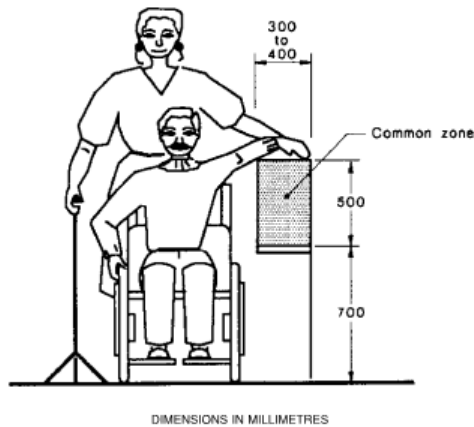
Ambulant Persons reach



DIMENSIONS IN MILLIMETRES

FIGURE 22 REACH OF AMBULANT PEOPLE WITH DISABILITIES

Zone of common reach – ambulant and wheelchair users



6.4 SIGNAGE

6.4.1 ILLUMINATION LEVELS

Consider lighting levels and surrounding surface finishes to avoid glare and shadowing which may make the sign difficult to read. Generally older people require a higher level of artificial lighting.

AS1428.2

19.1 Illumination levels Illumination levels shall be uniform and comply with the requirements for maintenance illumination set out in [AS 1680.2](#).

NOTES:

- 1 The following minimum levels of maintenance illumination are recommended:

Entrances	
Passageways and walkway	≥150 lx
Stairs	150 lx
Ramps	150 lx
Lifts	See AS 1735.12
Toilet and locker rooms	200 lx
Counter tops	250 lx
General displays	200-300 lx
Telephones	200 lx

- 2 Many people require better artificial lighting than is normally provided. This applies particularly to older people and to all people with impaired sight.
- 3 For people with impaired hearing, a level of illumination of not less than 150 lx, without glare, is needed to allow for lip reading.

6.4.2 SIGNAGE TO ASSIST WITH WAYFINDING

People need clear information about the purpose and layout of spaces if they are to maintain a clear sense of direction and independent use of a building. Signs should form part of an integrated communication scheme that gives clear directions, information and instructions. Information is particularly important at junctions of circulation routes and at key destination points such as reception areas, to identify lifts and sanitary facilities. Clear signs are important and are necessary for people with hearing impairments who may not be able to ask or feel comfortable about asking for directions. Signs should include Braille and tactile information wherever possible and use appropriate colour schemes and fonts.

6.5 EVACUATION IN EMERGENCY

Whilst this is not called up directly by the NCC or AS [Certis Access Consultancy](#) would recommend that any Building emergency and evacuation plan takes into account the entire potential building population. In particular the following items should be considered:

- Providing appropriate means for giving warning in the event of a fire. (Visual strobes to fire alarms etc)
- Management Planning including provision of personal emergency evacuation plans (PEEP).
- Appropriate fire instructions in alternative formats (e.g. Braille)
- Appropriate way finding systems (Braille and tactile exit signage)
- Evacuation lifts or protected refuge area and devices for taking people up and down stairs.