BLACKETT MAGUIRE+ GOLDSMITH

BCA & ACCESS ASSESSMENT REPORT

PROJECT: New High School in Bungendore
PREPARED FOR: Hindmarsh Constructions

Revision 5
Date: 27 June 2022
Reference: 210035

Address
Suite 2.01,
22-36 Mountain St
Ultimo NSW 2007

Contact
Ph: 02 9211 7777
Fax: 02 9211 7774

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REPORT STATUS

DATE	REVISION	STATUS	AUTHOR	REVIEWED
18.03.21	Draft	Preliminary schematic BCA/Access Assessment Report	A.R	D.B
9.04.21	1	Revised schematic BCA/Access Assessment Report	A.R	D.B
27.07.21	2	Revised schematic BCA/Access Assessment Report	A.R	D.B
07.09.21	3	Minor corrections requested by client	A.R	D.B
19.10.21	4	Revised report based on re-design	A.R	D.B
27.06.22	5	Updated report based on revised design	A.R	D.B

Prepared by:

Aaron Redfern
Senior Building Surveyor
Blackett Maguire + Goldsmith
Building Surveyor-Unrestricted *(NSW)*
BDC No. 2321

Reviewed by:

David Blackett
Director
Blackett Maguire + Goldsmith
Building Surveyor-Unrestricted (NSW)
BDC No. 0032

PREAMBLE

1.1. INTRODUCTION

This Access/BCA report accompanies an Environmental Impact Statement (EIS) pursuant to Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act) in support of an application for a State Significant Development (SSD No 14394209). The SSDA is for a new high school located at Bungendore.

This report addresses the Secretary's Environmental Assessment Requirements (SEARs), notably:

SEARs Requirement	Response
Accessibility Report	Refer Section D, Part D3

1.2. PROPOSAL

The proposed development is for the construction of a new high school in Bungendore. The proposal has been designed as a stream 3 high school to initially provide for approximately 450 students with core 4 facilities aimed to future proof demand forecasted to 2036.

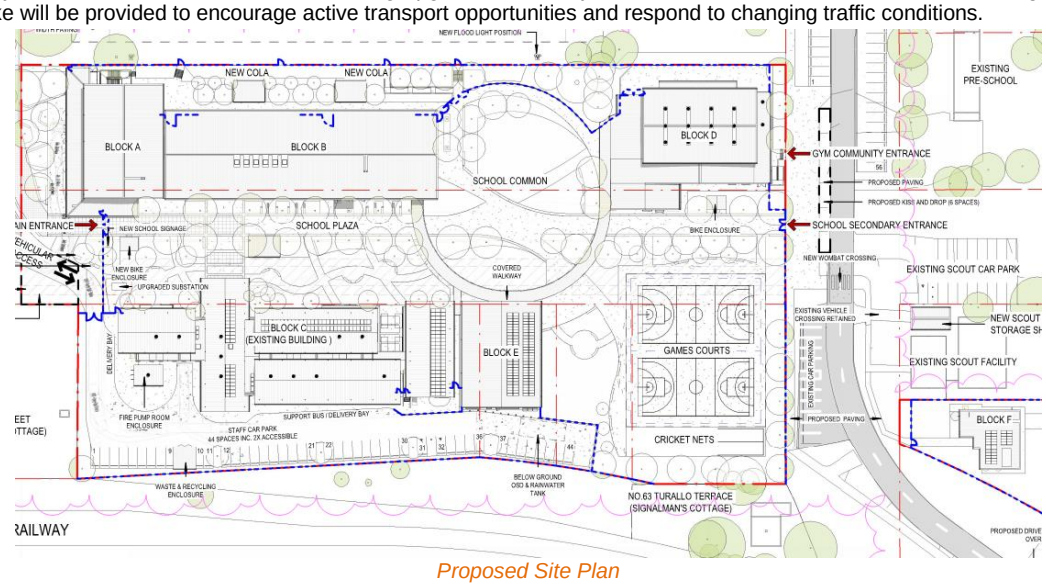
The site is located adjacent to the existing Bungendore Public School to the south enabling the creation of an education style precinct that will enable a cohesive connection between the two schools as well as the wider Bungendore community.

The proposal will include the demolition of the Bungendore Swimming Pool (to be relocated to Queanbeyan-Palerang Regional Council's proposed new Bungendore Sports Hub) and the Bungendore Community Centre; repurposing of existing council buildings; and the construction of new school buildings. New facilities for the high school will comprise of 24 general learning spaces; dedicated science and technology spaces; a gymnasium; library; canteen; outdoor learning and play areas that include two games courts.

A new agricultural plot is also proposed to the north of the main school site including a new agricultural building and scout storage shed, adjacent to the existing scout hall.

The proposal will also provide for shared administration and staff facilities between the high school and existing primary school and refurbishment of Primary School Buildings A, G and K.

Additionally, miscellaneous off-site works, including upgrades to nearby road intersections and infrastructure, crossings, footpaths and the like will be provided to encourage active transport opportunities and respond to changing traffic conditions.



Proposed Site Plan
Source: TDK Architects

1.3. SITE DESCRIPTION

The proposed development is located within the Bungendore Town Centre within the local government area of Queanbeyan-Palerang Regional Council. The proposal involves the use of land which includes Bungendore Park bounded by Gibraltar Street, Majara Street, Turallo Terrace and Butmaroo Street, the existing former Palerang Council site at 10 Majara Street, the Majara Street Road reserve bounded by Turallo Terrace and Gibraltar Streets and Nos. 2, 4 and 6 Majara Street (Refer to Table 1 below).

The site is approximately 29,205m2 in area and consists of a relatively flat topography. It contains part of Bungendore Park, existing Council buildings and maintained public open space areas. The land is mostly cleared of vegetation with some mature trees intersperse throughout subject lots.

The surrounding area generally includes low density residential developments to the north and west, an existing rail line to the east and Bungendore Public School and the Bungendore train station to the south and south west respectively.

Table 1 – New high school in Bungendore legal descriptions

Property Address	Lot Numbers
6-14 Butmaroo Street	Part Lot 701 DP1027107
2 Majara Street	Lot 12 DP1139067
4-6 Majara Street	Lot 13 DP1139067 Lot 14 DP1139067
10 Majara Street	Lot 3 DP830878
Butmaroo Street	Part Lot 701 DP96240
Portion of Majara Street (between Turallo Terrace and Gibraltar Street)	N/A

Figure 1: Site aerial depicting the land subject to the proposed High School
Source: TKD Architects

EXECUTIVE SUMMARY

The following comprises a summary of the key compliance issues identified under the clause-by-clause assessment in APPENDIX 1 of this report that will be addressed prior to the BCA Certification for the project.

A. MATTERS REQUIRING REDESIGN OR ADDITIONAL INFORMATION AT CROWN STAGE:

	BCA (DTS) CLAUSE	DESCRIPTION
1.	**Part B1, C1 & D3**	Noting that the former Council Building – Building C is proposed for a change of use from Class 5 to 9b school. Further detail required in regards to upgrade BCA provisions for structural resistance, fire resistance and stability. A Structural Engineer will be required to undertake a review of the existing structure to determine that it is capable of resisting new loads imposed by the proposed building works.
2.	**C1.1, C3.2** **D1.10. Section E**	It is noted that the referenced plans show multiple allotments for the subject site, within building extending over multiple allotments. As allotment boundaries are deemed fire source features, internal allotment boundaries may result in technical non-compliances with the BCA DtS provisions particularly with respect to required fire ratings to external walls, protection of openings in external walls, discharge from exits and fire services. In this regard, we understand the various lots will be consolidated.
3.	**C1.1, C2.9**	Type B construction applies to Block AB. As it is a Class 9b building, it must have a floor with either of the following: + Ceiling system having a resistance to the incipient spread of fire of not less than 60 minutes; or + Have an FRL of 30/30/30; or + Have a fire-protective covering on the underside of the floor, including beams incorporated in it, if the floor is combustible or metal.
4.	**C2.2**	Buildings AB, C**,** D **and E** will be within the maximum fire compartment limitation on the advice that the awning structure between Buildings AB, C, D and E is supported independently with no physical connection between the buildings. Exact details confirming no physical connection of the awnings is required as the design progresses.
5.	**C2.12**	Confirmation is to be provided as to whether or not any of the proposed Communications Rooms or Main Switch Rooms will contain any of the equipment listed under C2.12(a) which would trigger the need for fire separation.
6.	**C2.13**	Confirmation is to be provided whether or not any of the proposed Main Switch Rooms will contain any emergency equipment required to operate in emergency mode.
7.	**C3.2**	The external wall on Northern side of Block A is within 3m of side boundary as such any openings within this wall must be protected in accordance with C3.4.
8.	**D1.2**	The Block D library is proposed to be served by a single exit however, as is it will contain more than 50 occupants, it is required to have a minimum of two exits.
9.	**D1.4**	As the library is only served by a single exit, travel to the exit is 43m in lieu of the DTS max. of 40m
10.	**D2.19**	As shown below there are roller shutters proposed to serve rooms that are under 200m^2 and the roller shutter is the only required exit. In order to rely on the roller shutter as the required exit from those parts, it is required to be held in the open position while the building or part is lawfully occupied. Alternatively, an additional swinging door can be provided in the rooms and the roller shutter can be retained and remained closed.
11.	**D2.20**	The external gates leading to open space shall swing in the direction of egress. Refer circled below.
12.	**D2.21**	The external gates shown above shall be provided with single handed downward action door hardware to facilities egress, or be provided with an automatic fail safe device which releases the door upon activation of smoke detection system.
13.	**E1.3 & AS 2419.1-2005**	The proposed location for the external Hydrant Pump Room is within 6m of the external walls of Building C which is not proposed to be sprinkler protected. As such, the enclosing walls of the Pump Room are required to achieve a minimum FRL of 90/90/90 or alternatively, the Pump Room is to be relocated to a position that it more than 6m from the external wall of Building C.
14.	**E1.3 & AS 2419.1-2005**	The referenced plans show an internal Pump Room in the Kitchen area of Block C. As there is an external Pump Room already proposed and the internal Pump Room looks undersized, clarification is to be provided as to its proposed use and whether this is a Fire Pump Room.
15.	**E1.3 & AS 2419.1-2005**	The proposed external hydrants do not provide full coverage to Level 1 of Block A and there appear to be no internal hydrant proposed on Level 1. As such, there is a coverage shortfall across level 1. The plans are to be updated to demonstrate full coverage with fire hydrants in compliant locations.

	BCA (DtS) Clause	Description
16.	**E1.4 & AS 2441-2005**	There are no fire hose reels proposed in Block D which is required to be served by a fire hose reel system as it comprises Class 9b and does not contain classrooms. The plans are to be updated to demonstrate full coverage in Block D with fire hose reels in compliant locations
17.	**E2.2**	The following fire safety measures are required: + Automatic shutdown of air handling system (there than non-ducted individual room units with a compacity more than 1000L/s and miscellaneous exhaust air system installed in accordance with sections 5 and 6 of AS 1668.1) which does not form part of the smoke hazard management system; + An Automatic smoke detection and alarm system complying with AS 1670.1-2018
18.	**F2.3**	In order to verify that the School Hall is served by sufficient sanitary facilities for after school use, clarification is required as to whether the after-hours use of the school hall is proposed. Further clarification is required as to whether the hall will be proposed for use as a sports venue, public hall or function room as there are different sanitary facility requirements for each. Confirmation is required if the Library is for school student use only, or is open to the public.
19.	**F2.3**	The toilets across all Blocks (particularly in Block C) are to be labelled as being for either staff or students.
20.	**F2.3**	As the library is only proposed to be provided with one accessible w.c, there is a lack of sanitary facilities based on a population determined under Table D1.13. The anticipated population number for the library are to be provided to undertake a more detailed assessment. Further confirmation is required whether the after-hours use of the school hall is proposed.
21.	**F2.3**	Confirmation is required whether the proposed staff and student number are as per the email regarding occupant numbers listed under the referenced documentation. Furthermore, there is a lack of detail on the plans regarding the toilet fit out. For example, the bank in Block C does not show any pans, urinals or washbasins.
22.	**F2.4**	The plans are to be updated to show fully compliant accessibility fit out in ambulant and accessible w.c including grabrails and other fittings and fixtures required under AS 1428.1-2009

B. Matters requiring fire safety engineered performance solutions:

	BCA (DtS) Clause	Description
1.	**C1.1, Spec. C1.1**	It is proposed to adopt FRL requirement of Type C Construction In lieu of Type B FRL requirements.
2.	**D1.5**	The two alternative exits in the front of existing Council admin building are less than 9m apart. These are required to be considered alterative exits for exit travel distances.
3.	**E1.3, AS 2419.1-2005**	The location of the Fire Hydrant Booster assembly is not fully compliant as it is not located with main sight of all building entry points. Performance solution required.

C. Accessibility matters requiring further information:

	BCA (DtS) Clause	Description
1.	**D3.2**	The referenced plans are to clearly show how access is proposed to be provided to and from the following areas: + Main pedestrian entrance off Gibraltar Street to the various School Blocks + Accessible pedestrian pathway from the main campus to Block F. + From the accessible parking spaces to the various School Blocks. + Block C main entrance
2.	**AS1428.1 Cl. 13.3**	As per Figure 5 to Figure 8, there is a lack of doorway circulation space at doorways. As these spaces are believed to be accessible, re-design is required to ensure that the minimum required doorway circulation spaces are achieved.
3.	**D3.2**	Further Information is required with regards to the required accessways to the main points of the building from any accessible parking spaces. The gradients of any proposed ramps are to be shown.
4.	**D3.2**	We understand that Building E is proposed to be accessible and open to students. Noting that accessible sanitary facilities are proposed, clarification is to be provided as to how access to the building is proposed for those in a wheelchair.

	BCA (DtS) Clause	Description
5.	**D3.4**	Please confirm if there are any areas that are deemed inappropriate to access for people with disabilities due to that area's particular use, such as the Comms Rooms in the Buildings such as Cleaners Rooms which do not provide the required doorway circulation areas.
6.	**D3.7**	Details required of the proposed hearing augmentation system for any areas where inbuilt amplification system/PA system is installed. This may include all classrooms.
7.	**D3.8**	The plans submitted for Crown Certificate are to show the provision of tactile indicators to stairway and ramp landings as required.

2. INTRODUCTION

2.1. PROPOSAL

Blackett Maguire + Goldsmith Pty Ltd have been commissioned by Hindmarsh to undertake an assessment of the new Bungendore High School against the relevant provisions of the Building Code of Australia 2019 Amendment 1 (BCA).

2.2. AIM:

The aim of this report is to:

+ Undertake an assessment of the proposed development against the deemed-to-satisfy provisions of the BCA;
+ Identify matters that require plan resolutions in order to achieve compliance with the BCA;
+ Identify matters that are to be required to be addressed by Performance Solutions;
+ Enable the certifying authority to satisfy its statutory obligations under Clause 145 of the Environmental Planning and Assessment Regulation, 2000.
+ Enable the Public Authority to satisfy its statutory obligations under Section 6.28 of the Environmental Planning and Assessment Act, 1979.

2.3. PROJECT TEAM

The following BM+G Team Members have contributed to this Report:

+ Aaron Redfern – Report Preparation (Senior Building Surveyor) | Building Surveyor-Unrestricted
+ David Blackett – Project PCA/Peer Review (Director) | Building Surveyor-Unrestricted

2.4. REFERENCED DOCUMENTATION

The following documentation has been reviewed, referenced and/or relied upon in the preparation of this report:

+ Building Code of Australia 2019 Amendment 1 (BCA).
+ The Guide to the Building Code of Australia 2019 Amendment 1 (BCA).
+ Preliminary Detailed Design Architectural Plans prepared by TKD Architects AR-DA HS-0000 to AR-DA HS-9000 dated 7 June 2022
+ Email from TKD Architects regarding anticipated occupant numbers sent 24 March 2021
+ Acconex TKD-GCOR-000230 sent by TDK with compartment volumes

2.5. REGULATORY FRAMEWORK

Pursuant to clause 6.28 of the Environmental Planning and Assessment Act 1979 Crown building work cannot be commenced unless the Crown building work is certified by or on behalf of the Crown to comply with the Building Code of Australia.

The assessment has been undertaken in accordance with Clause 24 and 25 of the Building and Development Certifiers Act 2020.

2.6. RELEVANT VERSION OF THE NCC BUILDING CODE OF AUSTRALIA

Pursuant to S6.28 of the Environmental Planning and Assessment Act 1979, the proposed building is subject to compliance with the relevant requirements of the BCA as in force at the time of the date of invitation for tenders to carry out the Crown building work. The current BCA is in force is BCA 2019 Amendment 1, with BCA 2022 coming in to force September 2022. Confirmation is required if the tender is likely to be lodged prior to September 2022, this report assesses the design against compliance with the requirements of BCA 2019 Amendment 1.

Re-assessment against the new BCA 2022 provisions will be required should the invitation to tender not be lodged in time prior to 1 September.

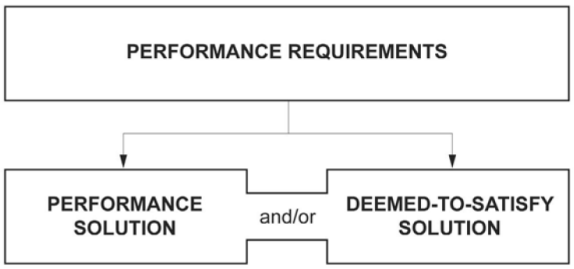
2.7. COMPLIANCE WITH THE NATIONAL CONSTRUCTION CODE

Compliance with the NCC is achieved by complying with—

+ the Governing Requirements of the NCC; and
+ the Performance Requirements.

Performance Requirements are satisfied by one of the following, as shown in the Figure below:

+ A Performance Solution.
+ A Deemed-to-Satisfy Solution.
+ A combination of the above two options



Where a *Performance Requirement* is proposed to be satisfied by a *Performance Solution*, the following steps must be undertaken:

+ Prepare a performance-based design brief in consultation with relevant stakeholders.
+ Carry out analysis, using one or more of the Assessment Methods listed in A2.2(2), as proposed by the performance-based design brief.
+ Evaluation the results against the acceptance criteria in the performance-based design brief.
+ Prepare a final report that includes –
  - All Performance Requirements and/or Deemed-to-Satisfy provisions identified through A2.2(3) or A2.4(3) as applicable; and
  - Identification of all Assessment Methods used; and
  - Details of steps (a) to (c); and
  - Confirmation that the Performance Requirement has been met; and
  - Details of conditions or limitations, if any exist, regarding the Performance Solution

2.8. LIMITATIONS AND EXCLUSIONS

The limitations and exclusions of this report are as follows:

+ Please note that whilst the BCA specifies a minimum standard of compliance with AS1428 (Parts 1-3) and Part D3 of the BCA for access and facilities for people with disabilities, compliance with such requirements may not necessarily preclude the possibility of a future complaint made under the DDA 1992. The DDA is a complaint-based legislation and is presently not identified by the State Building Codes and Regulations. In this regard the building owner should be satisfied that their obligations under the DDA have been addressed.
+ The Report does not address matters in relation to the following Local Government Act and Regulations:
  i. Work Health and Safety Act and Regulations.
  ii. Work Cover Authority requirements.
  iii. Water, drainage, gas, telecommunications and electricity supply authority requirements.
  iv. Disability Discrimination Act 1992.
+ Blackett Maguire + Goldsmith Pty Ltd cannot guarantee acceptance of this report by Local Council, Fire & Rescue NSW or other approval authorities.
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2.9. REPORT TERMINOLOGY

BCA Completion Certificate – A certificate issued at the completion of works which confirms the building is suitable for occupation in accordance with its classification under the BCA.

BCA Crown Certificate – A certificate issued against building works carried out by or on behalf of the Crown which verifies that the works comply with the requirements of the BCA prior to works commencing, subject to S6.28 of the Environmental Planning and Assessment Act 1979.

Building Code of Australia - Document published on behalf of the Australian Building Codes Board. The BCA is a uniform set of technical provisions for the design and construction of buildings and other structures throughout Australia and is adopted in NSW under the provisions of the Environmental Planning & Assessment Act & Regulation.

Climatic Zone – Means an area defined in Figure 2 and in Table 2 (of BCA Schedule 3) for specific locations, having energy efficiency provisions based on a range of similar climatic characteristics.

Construction Certificate – Building Approval issued by the Certifying Authority pursuant to Part 6 of the EP&A Act 1979.

Construction Type – The construction type is a measure of a buildings ability to resist a fire. The minimum type of fire-resisting construction of a building must be that specified in Table C1.1 and Specification C1.1, except as allowed for—

(i) certain Class 2, 3 or 9c buildings in C1.5; and

(ii) a Class 4 part of a building located on the top storey in C1.3(b); and

(iii) open spectator stands and indoor sports stadiums in C1.7.

Note: Type A construction is the most fire-resistant and Type C the least fire-resistant of the types of construction.

Deemed-to-Satisfy (DTS) Provisions of the BCA – Means the prescriptive provisions of the BCA which are deemed to satisfy the performance requirements.

Effective Height – The vertical distance between the floor of the lowest storey included in the calculation of rise in storeys and the floor of the topmost storey (excluding the topmost storey if it contains only heating, ventilating, lift, or other equipment, water tanks or similar service units).

Exit – Any, or any combination of the following if they provide egress to a road or open space;

+ An internal or external stairway.
+ A ramp.
+ A fire-isolated passageway.
+ A doorway opening to a road or open space.

Fire Compartment – The total space of the building; or when referred to in

+ The Performance Requirements – any part of a building separated from the remainder by barriers to fire such as walls and/or floors having an appropriate resistance to the spread of fire with any openings adequately protected; or
+ The Deemed-to-Satisfy Provisions – any part of a building separated from the remainder by walls and/or floors each having an FRL not less than that required for a fire wall for that type of construction and where all openings in the separating construction are protected in accordance with the Deemed-to-Satisfy Provisions of the relevant part.

Fire Resistance Level (FRL) – The grading periods in minutes for the following criteria-

(a) structural adequacy; and

(b) integrity; and

(c) insulation,

and expressed in that order

Fire Source Feature (FSF) - The far boundary of a road adjoining the allotment; or a side or rear boundary of the allotment; or an external wall of another building on the allotment which is not a Class 10 building.

National Construction Code Series (NCC) – The NCC was introduced 1 May 2011 by the Council of Australian Governments (COAG). The BCA Volume One (Class 2 to 9 Buildings) is now referenced as the National Construction Code Series Volume One — BCA.

Occupiable outdoor area means a space on a roof, balcony or similar part of a building—

+ that is open to the sky; and
+ to which access is provided, other than access only for maintenance; and

+ that is not open space or directly connected with open space.

***Occupation Certificate* (OC)** – Building Occupation Approval issued by the Principal Certifying Authority pursuant to Part 6 of the EPA Act 1979.

Open Space - Means a space on the allotment, or a roof or other part of the building suitably protected from fire, open to the sky and connected directly with a public road.

Performance-based Design Brief - Means the process and the associated report that defines the scope of work for the performance-based analysis, the technical basis for analysis, and the criteria for acceptance of any relevant Performance Solution as agreed by stakeholders.

Performance Requirements of the BCA - A Building Solution will comply with the BCA if it satisfies the Performance Requirements. A Performance requirement states the level of performance that a Building Solution must meet.

Compliance with the Performance Requirements can only be achieved by-

(a) complying with the Deemed-to-Satisfy Provisions; or

(b) formulating an Alternative Solution which-

(i) complies with the Performance Requirements; or

(ii) is shown to be at least equivalent to the Deemed-to-Satisfy Provisions; or

(c) a combination of (a) and (b).

Performance Solution – Means a method of complying with the performance requirements other than by a *Deemed-To-Satisfy Solution.*

Professional Engineer *means a person who is—*

+ if legislation is applicable — a registered professional engineer in the relevant discipline who has appropriate experience and competence in the relevant field; or
+ if legislation is not applicable—
  - *registered in the relevant discipline on the National Engineering Register (NER) of the Institution of Engineers Australia (which trades as 'Engineers Australia'); or*
  - *eligible to become registered on the Institution of Engineers Australia's NER and has appropriate experience and competence in the relevant field.*

Rise in Storeys – The greatest number of storeys calculated in accordance with C1.2.

Sole Occupancy Unit – means a room or other part of a building for occupation by one or joint owner, lessee, tenant, or other occupier to the exclusion of any other owner, lessee, tenant, or other occupier and can include a dwelling and/or office suite

3. BUILDING CHARACTERISTICS

3.1. PROPOSED DEVELOPMENT

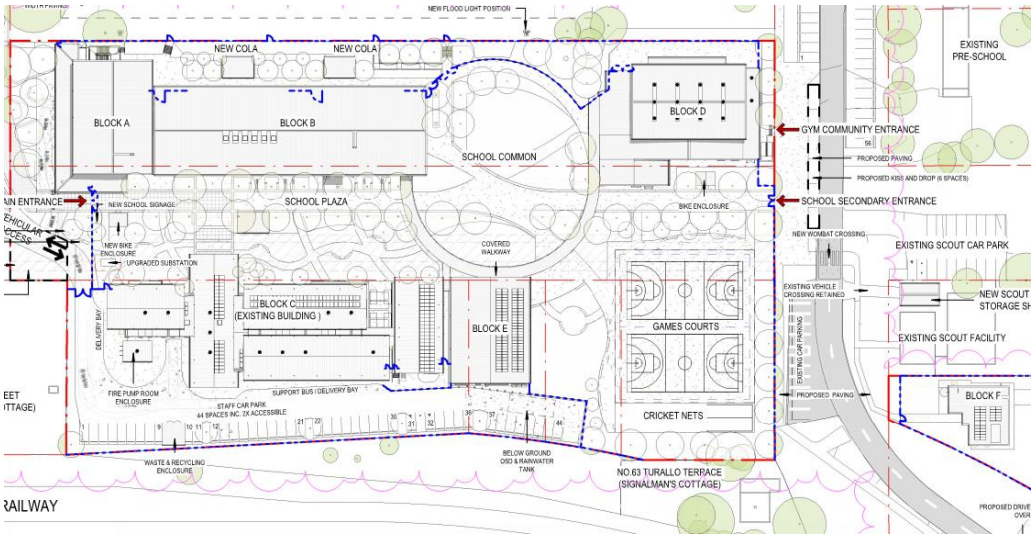


Figure 2: Proposed Site Plan
Source: TKD Architects

The proposed development consists of the construction of three new high school buildings, an ancillary agriculture building known as Block F, refurbishment of existing Council building for use as staff administration and Food and Textiles.

We understand that the external covered linkways are not physically connected to the buildings, as such and as per below, we have assessed Block AB, C, D, E and F as separate buildings.

The building is classified as follows:

	Block AB	Block C	Block D	Block E	Block F
BCA Classification:	Class 9b (School)	Class 5 (Staff Admin) Class 9b (School)	Class 9b (Library and Gymnasium/Hall)	Class 9b (School)	Class 9b (School)
Rise in Storeys:	Two (2)	One (1)	One (1)	One (1)	One (1)
Storeys Contained:	Two (2)	One (1)	One (1)	One (1)	One (1)
Type of Construction:	Type B	Type C	Type C	Type C	Type C
Importance Level (Structural):	3	2^	3	1	1
Sprinkler Protected Throughout:	No	No	No	No	No
Effective Height:	Less than 12m	Less than 12m	Less than 12	Less than 12	Less than 12
Floor Area:	Approx. 3,776m^2	Approx. 1,400m^2	Approx. 1,500m^2	Approx. 550m^2	Approx. 140m^2
Max. Fire Compartment Size:	5,500m^2 & 33,000m^3	3,000m^2 & 18,000m^3	5,500m^2 & 33,000m^3	3,000m^2 & 18,000m^3*	3,000m^2 & 18,000m^3*
Climate Zone:	Zone 7	Zone 7	Zone 7	Zone 7	Zone 7

Note^: A structural importance level of 2 has been applied to building C on the basis that the population will not exceed 250.

3.2. FIRE COMPARTMENT FLOOR AREA LIMITATIONS

Maximum size of fire compartment / atria is:

Classification		Type A	Type B	Type C
5, 9b or 9c	Max. floor area	8,000m^2	5,500m^2	3,000m^2
	Max. volume	48,000m^3	33,000m^3	18,000m^3

3.3. DISTANCE TO FIRE SOURCE FEATURES

Based upon a review of the plans, it is noted that each elevation of the building is located within the following distances from fire source features on the site.

Note: It is noted that the referenced plans show multiple allotments for the subject site, with the building extending over multiple allotments.
As allotment boundaries are deemed fire source features, internal allotment boundaries may result in technical non-compliances with the BCA DtS provisions particularly with respect to required fire ratings to external walls, protection of openings in external walls, discharge from exits and fire services.

We understand the allotments will be consolidated as part of the development approvals process.

Block AB		
Elevation	**Fire Source Feature**	**Distance**
North	Side or rear boundary	>3m
East	Another building on the allotment	>6m
West (Western side of Block A)	Side or rear boundary	<3m
South	Front boundary	>6m

Block C		
Elevation	**Fire Source Feature**	**Distance**
North	Another building on the allotment	>6m
East	Side or rear boundary	>3m
West	Side or rear boundary	>3m
South	Side or rear boundary	>3m

Building D		
Elevation	**Fire Source Feature**	**Distance**
North	Side or rear boundary	>3m
East	Side or rear boundary	>3m
West	Another building on the allotment	>6m
South	Front boundary	>3m

Building E		
Elevation	**Fire Source Feature**	**Distance**
North	Side or rear boundary	>3m
East	Side or rear boundary	>3m
West	Side or rear boundary	>3m
South	Another building on the allotment	<3m

Building F		
Elevation	**Fire Source Feature**	**Distance**
North	Side or rear boundary	>3m
East	Side or rear boundary	>3m
West	Side or rear boundary	>3m
South	Another building on the allotment	<3m

Note: ***Fire Source Feature (FSF)*** *- The far boundary of a road adjoining the allotment; or a side or rear boundary of the allotment; or an external wall of another building on the allotment which is not a Class 10 building.*

4. CONCLUSION

This report contains an assessment of the referenced architectural documentation for the proposed new High School at Bungendore against the deemed-to-satisfy provisions of the Building Code of Australia 2019 Amendment 1 (BCA).

Arising from the assessment, key compliance issues have been identified that require further resolution, either by way of fire engineered Performance Solutions or plan amendments prior to the S6.28 BCA Crown Certificate stage.

Notwithstanding the above, it is considered that the proposed development can readily achieve compliance with the BCA subject to resolution of the matters identified in the **EXECUTIVE SUMMARY** & **APPENDIX 1** of this report.

We understand the works will be subject to a S6.28 BCA Crown Certificate and BCA Completion Certificate.

APPENDIX 1 - BCA ASSESSMENT

LEGEND:	
+ **Complies**:	The referenced plans show compliance with this clause
+ **Compliance Readily Achievable**:	The referenced plans do not show sufficient information to establish compliance with this clause. Design certification, should be submitted with the application for the BCA Completion Certificate.
+ **Further Information Required:**	The referenced plans do not show sufficient information to establish compliance with this clause. Further details, should be submitted with the application for the S6.28 BCA Crown Certificate
+ **Performance Solution:**	The referenced plans do not comply with this clause and an Performance Solution is required/proposed to demonstrate compliance with the Performance Requirements
+ **Does Not Comply:**	The proposal does not comply with this clause and redesign is required.
+ **Noted**:	Provisions contained within this BCA clause are provided for guidance, or are to be read in conjunction with other BCA clauses
+ **Not applicable/ Not critical information**:	This clause is not applicable or not critical to the proposed development. These clauses have been removed from the assessment table below.

CLAUSE	REFERENCE	COMMENT
SECTION B	**STRUCTURE**	
Part B1	***Structural Provisions***	
B1.2 Determination of Individual Actions	Structural engineering details prepared by an appropriately qualified structural engineer to be provided to demonstrate compliance with Part B1 in relation to the new structural elements of the building.	**Compliance Readily Achievable:** Design Statement from a Professional Engineer to be provided confirming that the design achieves compliance with the following is required at the time of S6.28 BCA Crown Certificate application, inclusive of reference to the following Australian Standards (where relevant): AS 1170.0 – 2002 General Principles AS 1170.1 – 2002, including certification for balustrading (dead and live loads) AS 1170.2 – 2002, Wind loads AS 1170.4 – 2007, Earthquake loads AS 3700 – 2018, Masonry code AS 3600 – 2018, Concrete code AS 4100 – 1998, Steel Structures AS 4600 – 2018, Cold formed steel. AS 2047 – 2014, Windows in buildings AS 1288 – 2006, Glass in buildings A compliance certificate from a Professional Engineer is required for all structural works at the completion of building works and prior to the issuance of an BCA Completion Certificate. Noting that the former Council Building – Building C is proposed for a change of use from Class 5 to 9b school. Further detail required in regards to upgrade BCA provisions for structural resistance.
B1.4 Determination of Structural Resistance of Materials	Materials & Forms of Construction	**Compliance Readily Achievable:** Detail and design certification to be provided at the S6.28 BCA Crown Certificate stage.

CLAUSE	REFERENCE	COMMENT
SECTION C	**FIRE RESISTANCE**	
Part C1	***Fire Resistance and Stability***	
C1.1 Type of Construction Required	The minimum type of fire-resisting construction of a building must be that specified in Table C1.1 and Specification C1.1 except as allowed for in this clause. + Floors within Class 9b parts are to comply with Spec. C1.1, Clause 4.1(i), noting that floors must achieve a 60 min resistance to the incipient spread of fire or a 30-minute FRL or a fire protective covering. + Buildings AB, which comprise Type B construction are to have no combustible elements within the external wall. + For Type B Construction, any loadbearing internal wall or loadbearing firewall must be constructed out of concrete or **masonry**. + Buildings AB, which comprises Type B construction, any load-bearing elements in the external wall must have an FRL in accordance with Table 4 of Spec. C1.1.	**Further Information Required/** Block A, on the northern elevation has parts of its external wall within 3m of the allotment boundary. As Block A comprises Type B construction, the walls will need to achieve a fire-rating in accordance with Table 4 of Spec. As Blocks C, D, E and F comprise Type C construction, their external walls do not require an FRL so long as they are located 3m or more from any fire-source feature. **Refer to Spec C1.1 & APPENDIX 4 for the table of FRL's** **Performance Solution:** It is proposed to adopt FRL requirement of Type C Construction In lieu of Type B FRL requirements.
C1.2 Calculation of Rise in Storeys	A storey is not counted if, it is situated partly below the finished ground and the underside of the ceiling is not more than 1 m above the average finished level of the ground at the external wall,	**Compliance Readily Achievable:** All blocks are single storey except for building AB which has a rise in storeys of two (2).
C1.3 Buildings of Multiple Classification	In a building of multiple classifications, the type of construction required for the building is the most fire-resisting type resulting from the application of Table C1.1 on the basis that the classification applying to the top storey applies to all storeys.	**Noted:** Higher FRL of each classification to apply or be fire separated.
C1.8 Lightweight Construction	Lightweight construction must comply with Specification C1.8 if used in a wall system in accordance with sub-clauses (a) & (b).	**Compliance Readily Achievable:** Detail to be included in the design to ensure compliance with this clause.
C1.9 Non-Combustible Building Elements	In a building of Type, A or B construction, the following building elements and their components must be non-combustible. + External walls and common walls, including all components incorporated in them, including the façade covering, framing and insulation. + The flooring and floor framing of lift pits. + Non-loadbearing internal walls where they are required to be fire-resisting. This clause contains provisions for combustible materials that may be used wherever a non-combustible material is required under the BCA. Note: Sarking type materials that do not exceed 1mm in thickness and have a Flammability Index not greater than 5 are permitted to be installed with an external wall.	**Further Information Required:** This clause applies to Building AB only as it is Type B construction. Documentation is required to be provided as relevant to: + Any external wall claddings. + Any framing or integral formwork systems. i.e. timber framing, sacrificial formwork, etc. + Any external linings or trims. I.e. external UPVC window linings, timber window blades, etc. + Any sarking or insulation contained within the wall assembly. This is not an exhaustive list, and any element incorporated within any external wall assembly must be identified and provided for review. Any departures from non-combustibility or deemed non-combustible materials under this clause (C1.9[e]) are to be advised.

BUILDING ELEMENT	TYPE B CONSTRUCTION
External wall	Non-combustible
Common wall	Non-combustible
Floor and floor framing of lift pit	Non-combustible
All loadbearing internal walls (including those of shafts)	Concrete, masonry or fire-protected timber
Loadbearing fire walls	Concrete, masonry or fire-protected timber
Non-Loadbearing Internal Walls Required to be Fire-Resistant	Non-combustible
Non-loadbearing lift, ventilating, pipe, garbage and the like shafts which do not discharge hot products of combustion.	Non-combustible (subject to conditions outlined in C1.9(b))

CLAUSE	REFERENCE	COMMENT
C1.10 Early Fire Hazard Properties	The fire hazard properties of the outlined linings, materials and assemblies in a Class 2 to 9 building must comply with Specification C1.10**.** Refer below to extracts from Tables 2 and 3 of Spec C1.1. as relevant to wall, floor, an ceiling linings. For additional detailed requirements relating to additional building elements, refer to the relevant clause of Spec C1.1. as outlined below: + Floor linings and coverings – Clause 3. + Wall linings and ceiling linings – Clause 4. + Air-handling ductwork – Clause 5. + Lift Cars – Clause 6. + Fire control rooms and fire-isolated exits – Clause 7 + Fixed seating and proscenium curtains in Class 9b theatres, public halls and the like – Clause 7 + Escalators, moving walkways, and non-required non-fire-isolated stairways and ramps – Clause 7. + Sarking-type materials – Clause 7. + Attachments to internal floors, walls, and ceilings – Clause 7. + Other materials – Clause 7	**Further Information Required:** A schedule of all wall, floor, and ceiling linings along with associated test reports are to be provided for review to ensure compliance with the fire hazard property requirements of the BCA. Noting: + Minimum Group Numbers apply to wall and ceiling linings. AS 5637 test reports must be provided to determine compliance. + Minimum Critical Radiant Flux values apply to floor linings. AS ISO 9239.1 test reports must be provided to determine compliance. + As the new buildings are not required to be sprinkler protected, evidence is to be provided (in the form of test reports) that floor linings have a maximum smoke development rate not exceeding 750 percent minutes + Unless sprinkler protected, test reports submitted for wall and ceiling linings must confirm that the product either has; i. A smoke growth rate index not more than 100; or ii. an average specific extinction area less than 250 m^2/kg.

TABLE 2 OF SPECIFICATION C1.10 – CRITICAL RADIANT FLUX OF FLOOR LININGS AND FLOOR COVERINGS

Class of building	Building not fitted with a sprinkler system	Building fitted with a sprinkler system (other than a FPAA101D or FPAA101H system)	Fire-isolated exits and fire control rooms
Class 2, 3, 5, 6, 7, 8 or 9b, excluding— + Class 3 accommodation for the aged; and + Class 9b as specified below	2.2 kW/m2	1.2 kW/m2	2.2 kW/m2
Class 9b - Auditorium or audience seating area used mainly for indoor swimming or ice skating	1.2 kW/m2	1.2 kW/m2	2.2 kW/m2
Class 9b - Auditorium or audience seating area used mainly for other sports or multi-purpose functions.	2.2 kW/m2	1.2 kW/m2	2.2 kW/m2

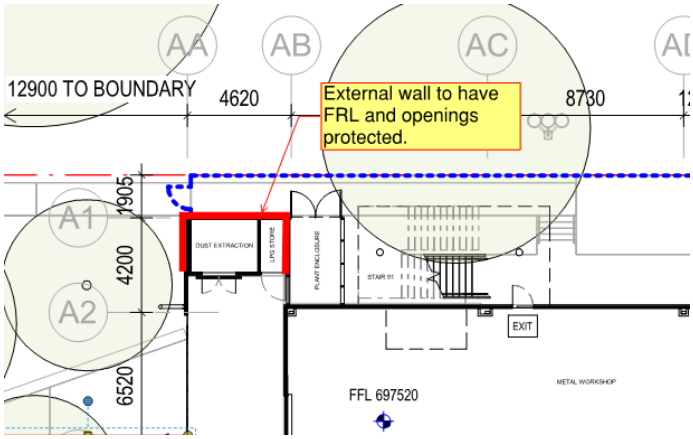
TABLE 3 OF SPECIFICATION C1.10 – WALL AND CEILING LINING MATERIALS (MATERIALS GROUPS PERMITTED)

Class of building	Fire-isolated exits and fire control rooms	Public corridors	Specific areas	Other areas
Class 5, 6, 7, 8 or 9b schools, Unsprinklered	Walls: 1 Ceilings: 1	Walls: 1, 2 Ceilings: 1, 2	Walls: 1, 2, 3 Ceilings: 1, 2	Walls: 1, 2, 3 Ceilings: 1, 2, 3
Class 9b other than schools, Unsprinklered	Walls: 1 Ceilings: 1	Walls: 1 Ceilings: 1	Walls: 1, 2 Ceilings: 1, 2	Walls: 1, 2, 3 Ceilings: 1, 2, 3

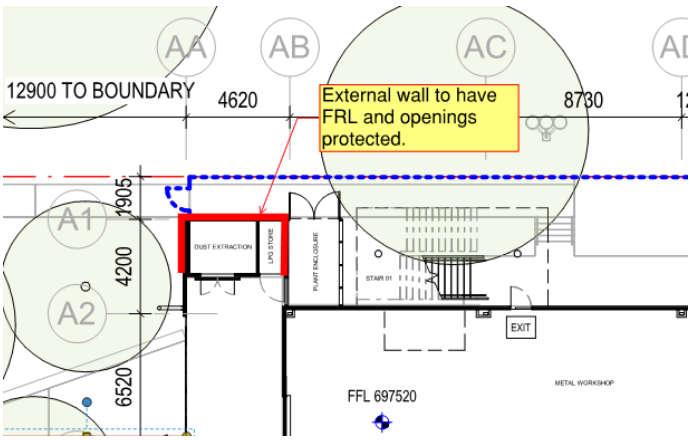
C1.14 Ancillary Elements	An ancillary element must not be fixed, installed or attached to the internal parts or external face of an external wall that is required to be non-combustible unless it is one of the following: + Gutter/downpipe/other plumbing fixture + A flashing. + A grate/grille <2m^2 associated with a building service. + An electrical switch/GPO/cover plate, or the like. + A light fitting. + A required sign. + A combustible non-required sign may be permitted if achieving a Group Number of 1 or 2 and not extending beyond one storey or fire compartment,	**Compliance Readily Achievable:** This clause applies to Building AB only as it is Type B construction. Detail to be included in the design and verified prior to the S6.28 BCA Crown Certificate Stage.

CLAUSE	REFERENCE	COMMENT
	and vertically separated by other signs by at least 2 storeys. + A combustible awning, sunshade, canopy, blind, or shading hood may be permitted at ground storey or a storey immediately above ground storey if complying as relevant to fire hazard properties and not affecting a required exit. + A part of a security, intercom or announcement system. + Wiring. + A paint, lacquer or a similar finish. + A gasket, caulking, sealant, or adhesive associated with the above ancillary elements.	
Part C2	***Fire Compartmentation and Separation***	
C2.2 General Floor Area Limitations	Limitations on the area and volume of fire compartments in Class 5 / 6 / 7 / 8 / 9 buildings as required by sub-clauses (a), (b) & (c) must be adhered to unless excepted by Clause C2.3.	**Further Information Required:** Buildings AB, C, D and E will be within the maximum fire compartment limitation on the advice that the awning structure between Buildings AB, C, D and E is supported independently with no physical connection between the buildings. Exact details confirming no physical connection of the awnings is required as the design progresses.
C2.6 Spandrels	In a non-sprinkler protected building of Type A construction, or a Class 9a building of Type B Construction openings above other openings within 450mm of a vertical plane must be separated by: + A spandrel of not less than 900mm in height (extending minimum 600mm above floor level) of non-combustible construction achieving an FRL of 60/60/60; or + A horizontal projection extending from the external face of the wall no less than 1100mm, extending laterally 450mm beyond each side of the openings, and of non-combustible construction achieving an FRL of 60/60/60. The requirement for separation does not apply to: + An open-deck carpark. + An open spectator stand. + Openings within the same stairway. + Openings in external walls where the floor separating the storeys does not require an FRL with respect to integrity and insulation.	**N/A** Applies to buildings of Type A construction.
C2.7 Separation by Fire Walls	Construction- A fire wall must be in accordance with the following: + The fire wall has the relevant FRL prescribed by Spec C1.1. + Unless permitted by Part C3, must not reduce the FRL prescribed by C1.1. + Building elements (other than roof battens of 75x50 or sarking-type material) must not pass through a fire wall unless the FRL of the wall can be maintained. Separation of buildings- A part of a building may be considered separate from the remainder of the building if separated by a fire wall in accordance with the following: + The fire wall extends through all storeys and is carried through to the underside of the roof covering. + Where roofs of separate buildings are at different heights, the fire wall must extend to the underside of: ▪ The higher roof, or >6m above the lower roof. ▪ The lower roof if it has an FRL not less than that of the fire wall and no openings closer than 3m to any wall above the lower roof.	**Note:** No fire walls are proposed.

CLAUSE	REFERENCE	COMMENT
	▪ The lower roof if its covering is non-combustible and the lower part is sprinkler protected. Separation of fire compartments- A part of a building, separated from the remainder by a fire wall, may be treated as a separate fire compartment if the fire wall extends to the underside of: + A floor having an FRL required for a fire wall; or + The roof covering.	
C2.8 Separation of Classifications in the Same Storey	Each building element in that storey must have the higher FRL prescribed in Specification C1.1 or have those parts of the building separated by a fire wall.	**Compliance Readily Achievable:** Higher FRL of each classification to apply or be fire separated.
C2.9 Separation of Classifications in Different Storeys	Parts of different classification that are situated one above the other in adjoining storeys must be separated as follows: Type A construction – The floor between the adjoining parts must have an FRL of not less than that prescribed in Specification C1.1 for the classification of the lower storey. Type B / C construction – a Class 2 / 3 / 4 building must have a floor with either of the following: + Ceiling system having a resistance to the incipient spread of fire of not less than 60 minutes; or + Have an FRL of 30/30/30; or + Have a fire-protective covering on the underside of the floor, including beams incorporated in it, if the floor is combustible or metal.	**Further Information Required:** The following applies to Block AB which comprises Type B construction – a Class 9b building must have a floor with either of the following: + Ceiling system having a resistance to the incipient spread of fire of not less than 60 minutes; or + Have an FRL of 30/30/30; or + Have a fire-protective covering on the underside of the floor, including beams incorporated in it, if the floor is combustible or metal.
C2.12 Separation of Equipment	Equipment as listed below must be separated from the remainder of the building with construction that achieves an FRL of 120/120/120 (or that required by Spec C1.1, whichever is greater) and doorways being self-closing -/120/30 fire doors: + Lift motors and lift control panels; or + Emergency generators used to sustain emergency equipment operating in the emergency mode; or + Central smoke control plant; or + Boilers; or + A battery or batteries installed in the building that have a voltage exceeding 12 volts and a capacity exceeding 200kWh. Separation of on-site fire pumps must comply with the requirements of AS 2419.1.	**Further Information Required:** Confirmation is to be provided whether or not any of the proposed Communications Rooms or Main Switch Rooms will contain any of the equipment listed which would trigger the need for fire separation.
C2.13 Electricity Supply System	An electrical substation located within a building or a main Switchroom which sustains emergency equipment, must: + Be separated from the building by construction achieving an FRL of 120/120/120; and + Have any doorway protected with a self-closing fire door achieving an FRL of -/120/30. Electrical conductors within a building must be protected in accordance with sub-clause (c).	**Further Information Required:** Confirmation is to be provided whether or not any of the proposed Main Switch Rooms will contain any emergency equipment operating in emergency mode.
Part C3	***Protection of Openings***	
C3.1 Application of Part	Openings listed in C3.1(a) need not comply with the Deemed-to-Satisfy Provisions of Part C3.	**Noted**
C3.2 Protection of Openings in External Walls	Openings in an external wall required to have an FRL must be protected in accordance with C3.4 if the opening is less than: + 3m from a side or rear boundary; or + 6m from the far boundary of a road, river, lake or the like adjoining the allotment if not located at or near ground level; or	**Further Information Required:** The external wall on Northern side of Block A is within 3m of side boundary as such any openings within this wall must be protected in accordance with C3.4.

CLAUSE	REFERENCE	COMMENT
	+ Less than 6m from another building on the allotment that is not Class 10. Except in a Class 9b building used as an open spectator stand, an opening required to be protected under this part must not occupy more than 1/3 of the area of the external wall of the storey in which it is located.	
		
C3.3 Separation of External Walls and Associated Openings in Different Fire Compartments	The distance between parts of external walls and any openings within them in different fire compartments separated by a fire wall must be at least that set out in Table C3.3 unless- + Those parts of each wall have an FRL of at least 60/60/60; and + Any openings protected in accordance with C3.4. Method of measurement between adjoining fire comportments is set out below: - **Angle between walls** / **Min. Distance** 0^0 (walls opposite) / 6m More than 0^0 to 45^0 / 5m More than 45^0 to 90^0 / 4m More than 90^0 to 135^0 / 3m More than 135^0 to 180^0 / 2m 0^0 or more / Nil	**Complies:** External walls of different fire compartments are sufficiently distanced, noting Block A and B are considered different fire compartments.
C3.12 Openings in Floors and Ceilings for Services	Where a service passes through: + A floor required to have an FRL (integrity and insulation), or; + A ceiling required to have a resistance to the incipient spread of fire, That service must be protected: + In a building of Type, A construction, by a shaft complying with Spec C1.1, and; + In a building of Type B / C construction, by a shaft that will not reduce the fire performance of the building elements it penetrated, and; The performance of any *required* fire-protective floor covering must not be reduced by service penetrations.	**Compliance Readily Achievable:** Details to be included into the design.
C3.15 Openings for Service Installations	When a service penetrates a building element that is required to have an FRL with respect to integrity or insulation or a resistance to the incipient spread of fire, that penetration must: + Be identical to a tested prototype assembly, tested in accordance with AS4072.1 and AS1530.4. + In the case of ventilating or air-conditioning ducts/equipment, the installation must comply with AS1668.1.	**Compliance Readily Achievable**: Certification to be provided at the BCA Completion Certificate stage.

CLAUSE	REFERENCE	COMMENT
C3.16 Construction Joints	Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation must be protected in a manner identical with a prototype tested in accordance with AS 1530.4 to achieve the required FRL.	**Compliance Readily Achievable**: Details to be included into the design. Certification to be provided at BCA Completion Certificate stage.
C3.17 Columns Protected with Lightweight Construction to Achieve an FRL	A column protected by lightweight construction to achieve an FRL which passes through a building element that is required to have an FRL or a resistance to the incipient spread of fire, must be installed using a method and materials identical with a prototype assembly of the construction which has achieved the required FRL or resistance to the incipient spread of fire.	**Compliance Readily Achievable**: Certification to be provided at the BCA Completion Certificate stage.
Spec.	***Part C Specifications***	
Spec C1.1 Fire-Resisting Construction	The new building works are required to comply with the requirements detailed under Table 4 / 5 of Specification C1.1 for Type B / C Construction.	**Further Information Required:** Block A, on the northern elevation has parts of its external wall within 3m of the allotment boundary as such will require the external wall to have FRL in accordance with Table 4.



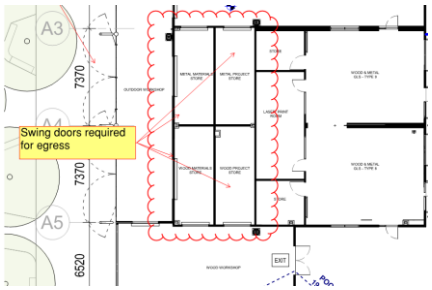
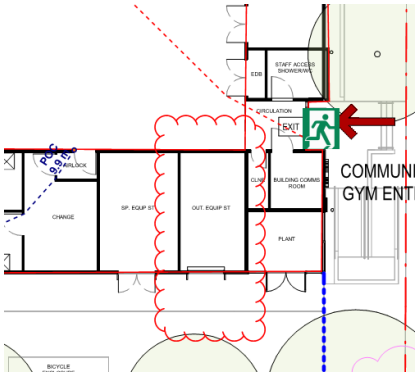
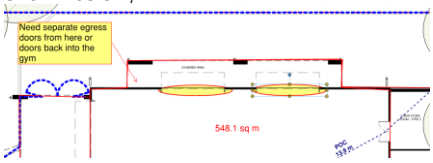
SECTION D	ACCESS AND EGRESS	
Part D1	***Provisions for Escape***	
D1.2 Number of Exits Required	In addition to horizontal exits, following buildings/areas are required to be provided with two exits- + Class 9- ▪ Each storey if the building has a rise in storeys of 6 or an effective height of 25m. ▪ Any storey which includes a patient care area in a Class 9a health-care building. ▪ Any storey that contains sleeping areas in a Class 9c building. ▪ Each storey in a Class 9b used as an early childhood centre. ▪ Each storey in a primary or secondary school with a rise in storeys of 2 or more. ▪ Any storey or mezzanine that accommodates more than 50 persons, calculated under D1.13.	**Compliance Readily Achievable**:
D1.3 When Fire Isolated Exits are Required	Class 5 / 6 / 7 / 8 / 9 Buildings – Every stairway or ramp serving as a required exit must be fire-isolated unless – + In a Class 9a - it connects or passes by not more than 2 consecutive storeys in areas other than patient care areas; or + It is part of an open spectator stand; or + In any case except for a Class 9c – it connects or passes by not more than 2 storeys, and one additional storey of any class may be included if:	**Not Applicable:** As there are no stairways connecting more than two storeys, fire-isolated exits are not required.

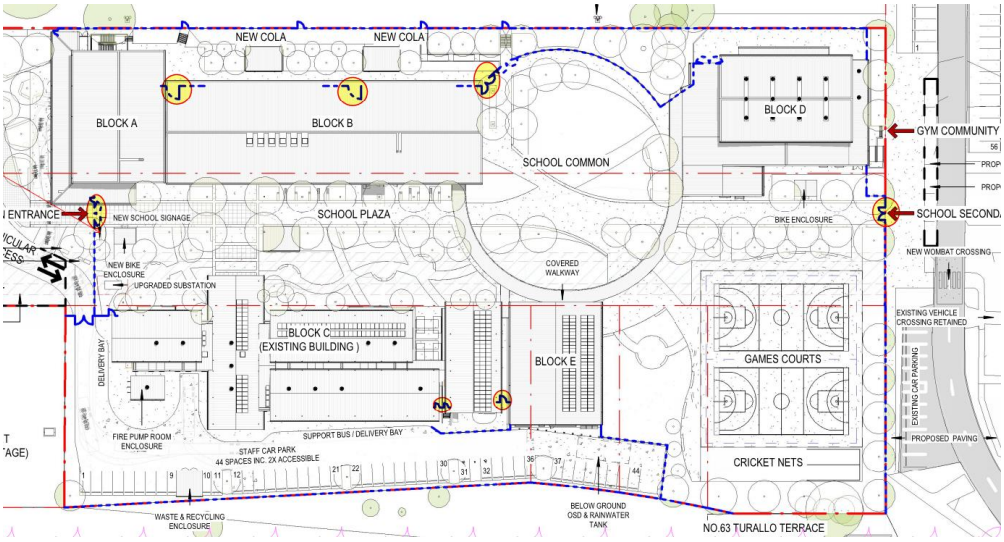
CLAUSE	REFERENCE	COMMENT
	▪ The building has a sprinkler system; or ▪ The required exit does not provided access to or egress from the additional storey, and is fire and smoke separated.	
D1.4 Exit Travel Distances	For Class 5, 9b buildings: + Maximum 20m to an exit or to a point of choice between alternative exits. + Maximum distance to one of those exits is 40m.	**Compliance Readily Achievable:** Compliance appears to be achieved.
D1.5 Distances Between Alternative Exits	Exits that are required as alternative means of egress must be- + Distributed as uniformly as practical within the storey served. + Located so that unobstructed access to 2 exits is available from all points. + Not less than 9m apart + Not more than a) Class 2/3: 45m apart b) Class 9a patient care: 45m c) In all other cases – 60m. + Located so that alternative paths of travel do not converge <6m.	**Performance Solution:** The two alternative exits in the front of existing Council admin building are less than 9m apart. These are required to be considered alterative exits for exit travel distances.
D1.6 Dimensions of Exits	The unobstructed height throughout a required exit must not be less than 2m and not less than 1980mm for a doorway. if the storey, mezzanine or open spectator stand accommodates more than 100 persons but not more than 200 persons, the aggregate unobstructed width, except for doorways, must be not less than— i. 1 m plus 250 mm for each 25 persons (or part) in excess of 100; if the storey, mezzanine or open spectator stand accommodates more than 200 persons, the aggregate unobstructed width, except for doorways, must be increased to— i. 2 m plus 500 mm for every 60 persons (or part) in excess of 200 persons if egress involves a change in floor level by a stairway or ramp with a gradient steeper than 1 in 12; or ii. in any other case, 2 m plus 500 mm for every 75 persons (or part) in excess of 200; and	**Compliance Readily Achievable:** As the multi-purpose hall is expected to accommodate a maximum of 487 occupants (as calculated under D1.13), the hall is required to provide a minimum aggregate egress width of 4m. In this regard, we note that compliance is achieved as the referenced plans show sufficient aggregate egress width.
D1.9 Travel by Non-Fire Isolated Stairways or Ramps	In a Class 5 / 6 / 8 / 9 building, the distance from any point on a floor to a point of egress to a road or open space by way of a required non-fire-isolated stairway or ramp must not exceed 80m. A required non-fire isolated stairway or non-fire-isolated ramp must discharge at a point not more than- + Class 5 / 6 / 7 / 8 / 9b – 20m from a doorway or fire-isolated exit providing egress to road or open space, or 40m from one of 2 such exits if travel to each is in opposite or approximate opposite directions.	**Complies:** The referenced plans demonstrate compliance.
D1.10 Discharge from Exits	The path of travel to the road from a required exit leading to open space must have an unobstructed exit width of that of the required exit, or if larger, 1m. If the discharge point of the exit is at a different level from the road, a stairway or ramp achieving no more than 1:14 must be provided, except for a Class 9a where a ramp must be provided.	**Compliance Readily Achievable**: Details to be included into the design.

CLAUSE	REFERENCE	COMMENT
	The discharge point of alternative exits must be located as far apart as practical and be suitably protected from vehicles potentially blocking the exit.	
D1.13 Number of Persons Accommodated	Outlines the number of persons accommodated in a storey as per Table D1.13 of BCA 2019.	**Note:**
D1.16 Plant Rooms & Lift Motor Rooms Concession	A ladder may be used in lieu of a stairway to provide egress from a plant room with a floor area of not more than 100m^2 or all but one point of egress from a plant room or a lift machine room with a floor area not more than 200m^2. Sub-clause (b) sets out the parameters for the ladders permitted to be used in this circumstance.	**Note:**
PART D2	***Construction of Exits***	
D2.1 Application of Part	With the exception of specified clauses in this part the Deemed-to-Satisfy Provisions of this Part do not apply to the internal parts of sole-occupancy units Class 2 & Class 3 buildings and Class 4 parts of buildings.	**Note:**
D2.3 Non-Fire-Isolated Stairways and Ramps	This clause requires that required non-fire-isolated stairways and ramps must be either constructed in accordance with D2.2 or the alternative options set out in D2.3 (a) to (c). In a building with a rise in storeys of more than 2, required non-fire-isolated stairways and ramps must be either constructed in accordance with D2.2 or – + Reinforced or prestressed concrete; or + Steel at least 6mm thick at all points; or + Timber that has a finished thickness of at least 44mm, has an average density of at least 800 kg/m^3 at a moisture content of 12% and has not been joined by means of glue unless it has been laminated and glued with resorcinol/phenol formaldehyde.	**Not Applicable:** Applies to buildings with a rise in storeys of more than 2.
D2.7 Installations in Exits and Paths of Travel	If installed in a path of travel to an exit, electrical distribution boards, communication cupboards and the like containing motors, etc. are to be enclosed with non-combustible construction, and doors are to be provided with smoke seals to the perimeter.	**Compliance Readily Achievable**: Details to be included into the design.
D2.8 Enclosure of Space Under Stairs and Ramps	The space below a required fire-isolated stairway or ramp in a fire-isolated shaft must not be enclosed to form a cupboard or other enclosed space. If the required stairway or ramp is non-fire-isolated, (including an external stairway) any cupboard underneath must have an FRL of 60/60/60, with a self-closing -/60/30 door.	**Compliance Readily Achievable**: Details to be included into the design.
D2.9 Width of Required Stairways and Ramps	A required stairway or ramp that exceeds 2m in width is considered as having a width of only 2m unless it is divided by a handrail or barrier and each division has a width not more than 2m.	**Compliance Readily Achievable**: Details to be included into the design.
D2.13 Goings and Risers	The stairs must comply with the tread, riser and going dimensions of this clause and the nosing of the stairs must be provided with a non-slip treads and meet the provisions of AS1428.1-2009. The following will apply in relation to the construction of all stairways: + Stairway must have not more than 18 and not less than 2 risers in each flight. + Goings and risers within the stair flights must be constant throughout. + Risers must be solid construction with no gaps and treads must have non slip finishes and stair nosings. Goings and risers are to be in accordance with BCA Table D2.13	**Compliance Readily Achievable**: Details to be included into the design.

CLAUSE	REFERENCE	COMMENT
D2.14 Landings	In a stairway – + Landings must be a minimum of 750mm long, and where it involves a change of direction the length is measured 500mm from the inside edge of the landing + Have a slip resistance of the surface of the nosing strip in accordance with Table D2.14 and tested in accordance with AS 4586.	**Compliance Readily Achievable**: Details to be included into the design.
D2.15 Thresholds	The threshold of a doorway must not incorporate a step or ramp at any point closer to the doorway than the width of the door leaf unless – + In a building required to be accessible – ▪ The doorway opens to a road or open space; and ▪ Is provided with a threshold ramp or step ramp in accordance with AS 1428.1. + In other cases – ▪ the doorway opens to a road or open space, external stair landing or external balcony; and ▪ the door sill is not more than 190 mm above the finished surface of the ground, balcony, or the like, to which the doorway opens.	**Compliance Readily Achievable**: Details to be included into the design.
D2.16 Balustrades	This clause details where balustrades are required to be provided and sets out in specific detail the construction requirements. Typically, the following will apply: + Balustrades are required where the fall to the level below is more than 1m in height. The minimum height of a balustrade is 1m above the floor of the landing, walkway or the like; and 865mm above the floor of a stairway or a ramp. + For a fall of more than 4m to the surface level below, a window sill must be a minimum of 865mm in height above the height of the floor surface. + Where the floor is more than 4m above the surface beneath the balustrade any horizontal or near horizontal members between 150mm and 760mm above the floor must not facilitate climbing. + Balustrades must be constructed so as to not permit a sphere of 125mm diameter to pass through. The exception to this is within fire isolated exits within the building, or within a Class 7 or 8 building, where the rails can be positioned a maximum of 460mm apart, so long as a bottom rail is located so a sphere of 150mm cannot pass through the opening between the nosing of the stair treads and the rail or between the floor of the landing, balcony or the like.	**Compliance Readily Achievable**: Details to be included into the design where applicable.
D2.17 Handrails	Handrails must be located along at least one side of a ramp or flight unless the width is 2m or more requiring handrails on both sides. Class 9b primary school requires one handrail fixed at a minimum height of 865mm and a second handrail fixed between 665mm and 750mm. (other cases) Handrails must be fixed at a minimum height of 865mm and be continuous between stair flight landings and have no on or above them that may break the hand hold. If in a required exit serving an accessible area, must comply with AS 1428.1. These requirements do not apply to handrails referred to in D2.18, a stairway or ramp providing a change in	**Compliance Readily Achievable**: Details to be included into the design.

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

CLAUSE	REFERENCE	COMMENT
	elevation of less than 1m, a land or a winder where a newel post is installed to provide a handhold.	
D2.18 Fixed Platforms, Walkways Stairways and Ladders	A fixed platform, walkway, stairway, ladder, any going and riser, any balustrade or other barrier attached thereto may comply with AS1657 if it only serves a machinery or plant room or non-habitable part of a sole-occupancy unit in a Class 2 building or Class 4 part.	**Compliance Readily Achievable**: Details to be included into the design.
D2.19 Doorways and Doors	A doorway forming part of a required exit – or a doorway in a patient care area of a Class 9a health-care building must not be fitted with a revolving door and must not be fitted with a roller shutter or tilt-up door unless it serves a part with a floor area not more than 200m^2 and the doorway is the only required exit from the building or part; and it is held in the open position while the building or part is lawfully occupied. Must not be fitted with a sliding door unless it leads directly to a road or open space; and the door is able to be opened manually under a force of not more than 110 N. Except for a door in a patient care area of a Class 9a health-care building, if fitted with a door which is power-operated it must be able to be opened manually under a force of not more than 110 N if there is a malfunction or failure of the power source; and if it leads directly to a road or open space it must open automatically if there is a power failure to the door or on the activation of a fire or smoke alarm anywhere in the fire compartment served by the door. A power-operated door in a path of travel to a required exit must be able to be opened manually under a maximum force of 110 N if there is a malfunction	**Further Information Required**: As shown below there are roller shutters proposed to serve rooms that are under 200m^2 and the roller shutter is the only required exit. In order to rely on the roller shutter as the required exit from those parts, it is required to be held in the open position while the building or part is lawfully occupied. Alternatively, an additional swinging door can be provided in the rooms and the roller shutter can be retained and remained closed.  Block A – Metal and wood storerooms  Gym – Out. Equipment store Further clarification is required to the covered area on the Western side of the Gym, if this has doors or these are openings shown below; 
D2.20 Swinging Doors	A swinging door forming part of a required exit must not encroach the required width of a required exit by way of the swing of the door, or the door itself including associated hardware whilst in the open position. Also, must not swing against the direction of egress unless permitted to do so under sub-clause (b). b) must swing in the direction of egress unless—	**Further Information Required:** The external gates leading to open space shall swing in the direction of egress. Refer circled below.

CLAUSE	REFERENCE	COMMENT
	i. it serves a building or part with a floor area not more than 200 m2, it is the only required exit from the building or part and it is fitted with a device for holding it in the open position; or ii. it serves a sanitary compartment or airlock (in which case it may swing in either direction); and	
		
D2.21 Operation of Latch	A door forming part of a required exit must be readily openable via the provision of single downward lever action hardware located between 900mm and 1.1m from FFL in area required to be accessible, otherwise single pushing action hardware between 900mm and 1.2m form FFL is permitted. The requirements of sub-clause (a) do not apply to the items listed under sub-clause (b) providing concessions for high-security areas, SOUs, fail-safe devices, and the like.	**Compliance Readily Achievable**: The external gates shown above shall be provided with single handed downward action door hardware to facilities egress, or be provided with an automatic fail safe device which releases the door upon activation of smoke detection system.
D2.24 Protection of Openable Windows	Where the lowest level of the window opening is less than 1.7m above the floor, a window opening must be protected in accordance with sub-clause (b). A barrier no less than 865mm is required to an openable window when a child resistant release mechanism is required, as well as when the floor below the window is >4m above the surface beneath. A barrier required by this part is to comply with sub-clause (d) & (e).	**Compliance Readily Achievable**: Details to be included into the design.
PART D3	***Access for People with Disabilities***	
D3.1 General Building Access Requirements	The extent of access required depends on the classification of the building. Buildings and parts of buildings must be accessible as set out in Table D3.1 unless exempted by Clause D3.4. Access is required to and within all areas normally used by the occupants, including the ancillary car parking part. A building, or part thereof, must comply with the requirements of BCA Part 3 if accessibility is deemed to be applicable under Table D3.1, unless otherwise exempted under Clause D3.4.	**Compliance Readily Achievable**:
D3.2 Access to Buildings	Accessways must be provided to accessible buildings from the main points of pedestrian entry at the allotment boundary and any accessible car parking space or	**Further Information Required:** The referenced plans are to clearly show how access is proposed to be provided to and from the following areas:

CLAUSE	REFERENCE	COMMENT
	accessible associated buildings connected by a pedestrian link. An accessway must be provided to a building required to be accessible- ▪ From the main points of a pedestrian entry at the allotment boundary; and ▪ From another accessible building connected by a pedestrian link; and ▪ From any required accessible car parking space on the allotment. In a building required to be accessible, an accessway must be provided through the principal pedestrian entrance and through not less than 50% of all pedestrian entrances including the principal pedestrian entry.	+ Main pedestrian entrance off Gibraltar Street to the various School Blocks + Accessible pedestrian pathway from the main campus to Block F. + From the accessible parking spaces to the various School Blocks. + Block C main entrance.
AS1428.4.1 Cl.2.5 Pedestrians and Carriageway at same grade	Where a pedestrian area joins a carriageway at grade (same level) or to delineate the pedestrian area from the carriageway, TFSI's shall be provided in accordance with Figures 2.5(A) and 2.5(B)B	**Further Information Required:** Confirmation is to be provided as to whether the bus bays are at the same level than the adjoining pedestrian area.

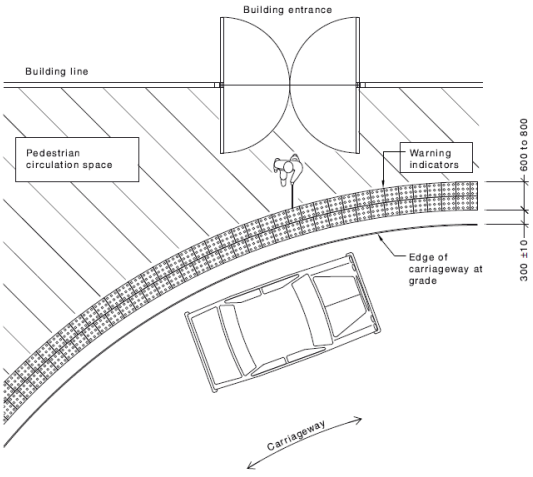


Figure 25(A)

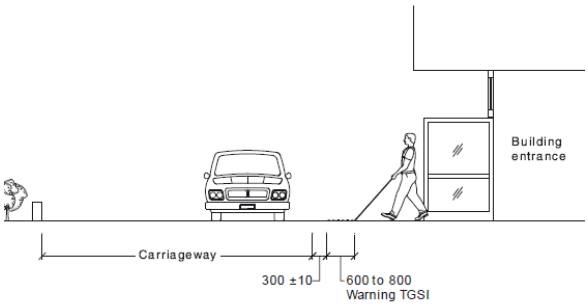
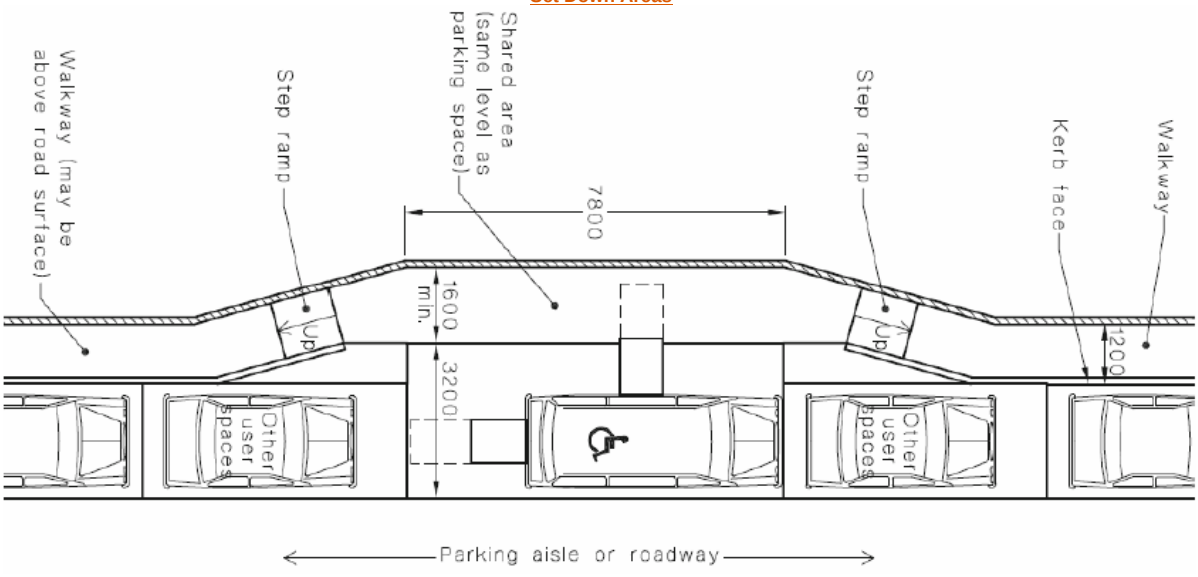


Figure 25(A)

AS1428.4.1 Cl.2.5 Set Down Areas:	For public drop off / setdown areas, if a kerb is provided separating the drop-off area from the pavement, a compliant kerb ramp will need to be provided. The detailing of the parallel set down will need to satisfy the provisions of AS 2890.6 – 2006. Where the pedestrian pathway and the driveway is at the same grade it will be necessary to achieve a 30% luminous contrast between the walkway and the driveway. Details of the materials, colour and texture will need to be provided as part of the detailed Design Development / Construction Issue Architectural Documentation.	**Further Information Required:** Details for any new bus bay area to be provided.

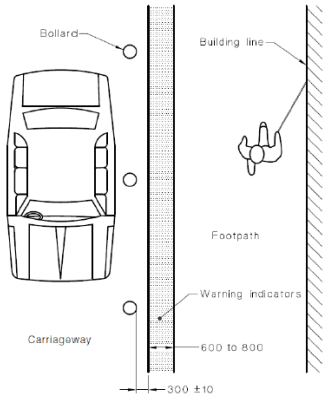
CLAUSE	REFERENCE	COMMENT

Set Down Areas



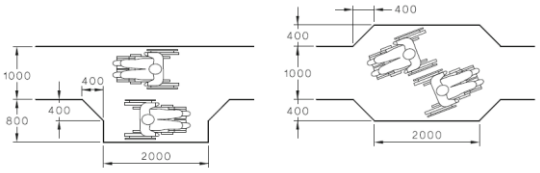
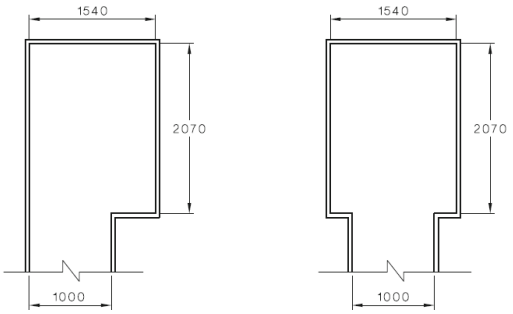
Requirements for parallel parking

If the set down area is level with the pavement, tactile indicators and bollards are required to be provided as required by AS 1428.4.1 – 2009.



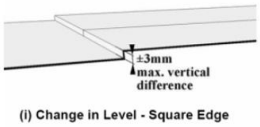
Requirements tactiles / bollards

D3.3 Parts of buildings to be accessible		The works are required to comply with the requirements of AS 1428.1-2009.	**Further Information Required:**
	AS1428.1 Cl. 6.1 General	A continuous accessible path of travel shall not include a step, stairway, turnstile, revolving door, escalator, moving walk or other impediment.	**Further Information Required:** The gradients of ramps are to be indicated and any handrails, balustrades TGSI's etc are to be shown on the plans.
	AS1428.1 Cl. 6.2 Height of paths	The minimum unobstructed height of a continuous accessible path of travel shall be 2000 mm or 1980 mm at doorways	**Compliance Readily Achievable:**
	AS1428.1 Cl. 6.3 Widths of paths	Unless otherwise specified (such as at doors, curved ramps and similar), the minimum unobstructed width of a continuous accessible path of travel shall be 1000 mm and the following shall not intrude into the minimum unobstructed width of a continuous accessible path of travel: + Fixtures and fittings such as lights, awnings, windows that, when open, intrude into the circulation space, telephones, skirtings and similar objects. + Essential fixtures and fittings such as fire hose reels, fire extinguishers and switchboards.	**Compliance Readily Achievable:**

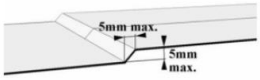
CLAUSE	REFERENCE	COMMENT
	+ Door handles less than 900 mm above the finished floor level.	
AS1428.1 Cl. 6.4 Passing Space	Accessways must have passing spaces complying with AS 1428.1 at maximum 20m intervals on those parts of an accessway where a direct line of sign is not available.  DIMENSIONS IN MILLIMETRES	**Complies:**
AS1428.1 Cl. 6.5 Turning Space	Turning spaces must comply with AS1428.1 and located within 2m of the end of accessways where it is not possible to continue travelling along the accessway, and at maximum 20m intervals along the accessway.  (a) Space required in corridor (b) Space required in corridor	**Compliance Readily Achievable:**
AS1428.1 Cl. 7 Floor Transition/s	Tolerances for Abutment of Surfaces: Transitions between floor finishes will need to comply with Clause 7.2 of AS1428.1-2009. Recessed / Soft Floor Coverings: + Pile height or pile thickness shall not exceed 11mm and the carpet backing thickness shall not exceed 4mm. + Exposed edges of floor coverings be fastened to the floor with a trim along any exposed edges. + At leading edges, carpet or other soft materials shall have a vertical face no higher than 3mm or a rounded bevelled edge no higher than 5mm. Up to 10mm is permitted at a 1:8 gradient. + Recessed matting must be no more than a 3mm vertical, or 5mm rounded, proud of the adjacent floor surface. This also applies when the matting is depressed below surface level. Grates: Grates shall comply with the following: + Circular openings shall be not greater than 13 mm in diameter. + 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. *NOTE: Where slotted openings are less than 8 mm, the length of the slots may continue across the width of paths of travel.*	**Compliance Readily Achievable:**

Tolerances for Abutment of Surfaces:

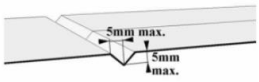
CLAUSE	REFERENCE	COMMENT



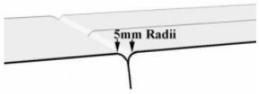
(i) Change in Level - Square Edge



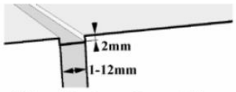
(ii) Change in Level - Bevelled Edge



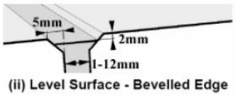
(iii) Flush Surface - Bevelled Edges



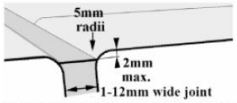
(iv) Flush Surface - Rounded Edges



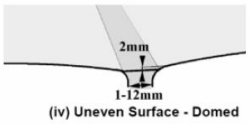
(i) Level Surface - Square Edge



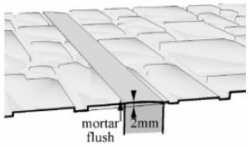
(ii) Level Surface - Bevelled Edge



(iii) Level Surface - Rounded Edges

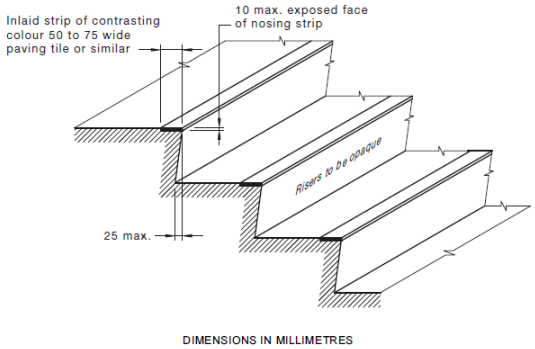


(iv) Uneven Surface - Domed

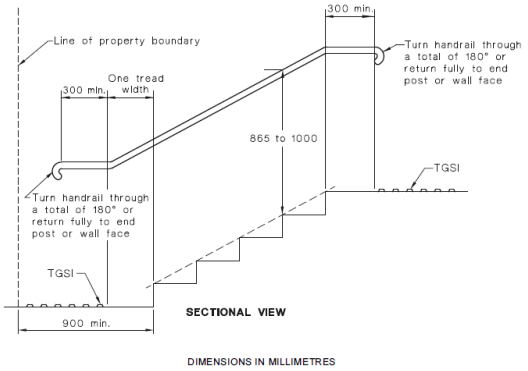


(v) Uneven Surface - Irregular

AS1428.1 Cl. 11.1 Stairway Construction	+ Where the intersection is at the property boundary, the stair shall be set back by a minimum of 900 mm so that the handrail (complying with Clause 12) and TGSIs do not protrude into the transverse path of travel. + Where the intersection is at an internal corridor, the stair shall be set back so that handrails or TGSIs do not protrude in to the path of travel. + Stairs shall have opaque risers. + Stair nosings shall not project beyond the face of the riser and the riser maybe vertical or have a splay backwards up to a maximum 25 mm. + Stair nosing profiles shall— (i) have a sharp intersection; (ii) be rounded up to 5 mm radius; or (iii) be chamfered up to 5 mm × 5 mm. + 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. + 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. + TGSIs shall be installed in accordance with AS 1428.4.1.	**Further Information Required:** Stairway details including sections are to be provided for assessment.

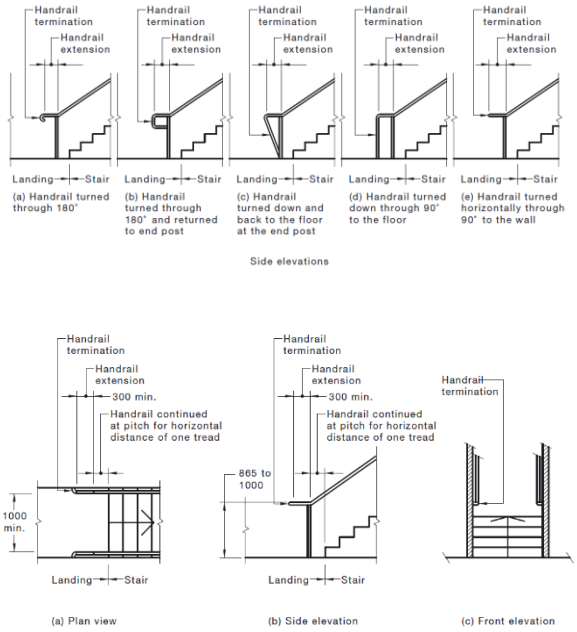
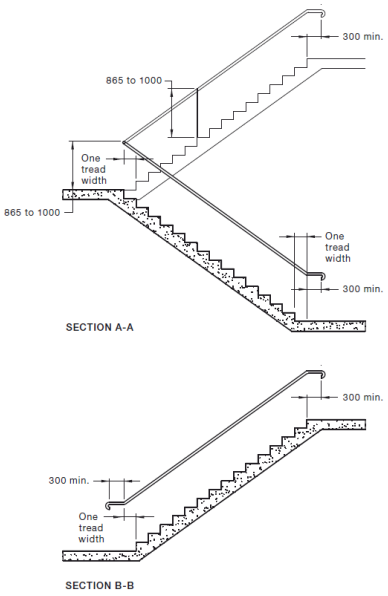


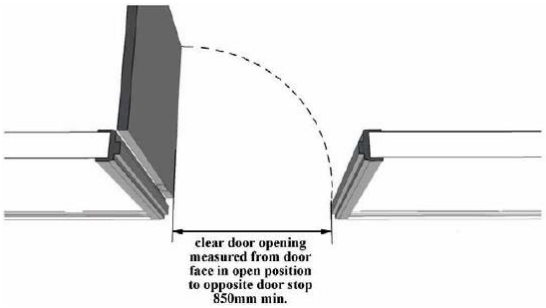
Example of Compliant Nosing Strip Detail

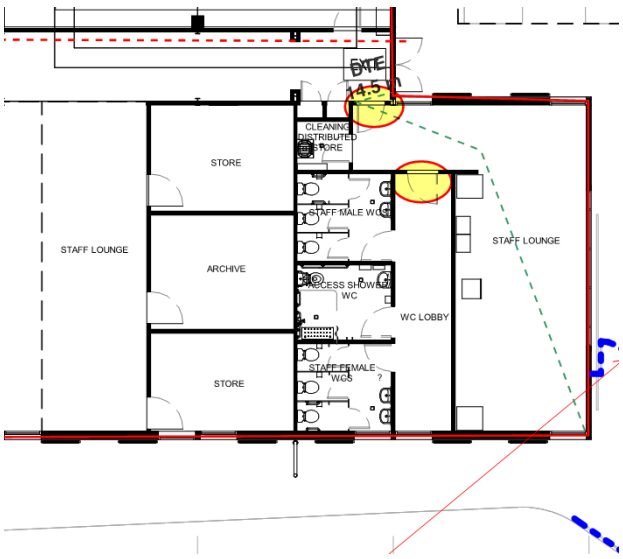


Example of Compliant Stairway Design

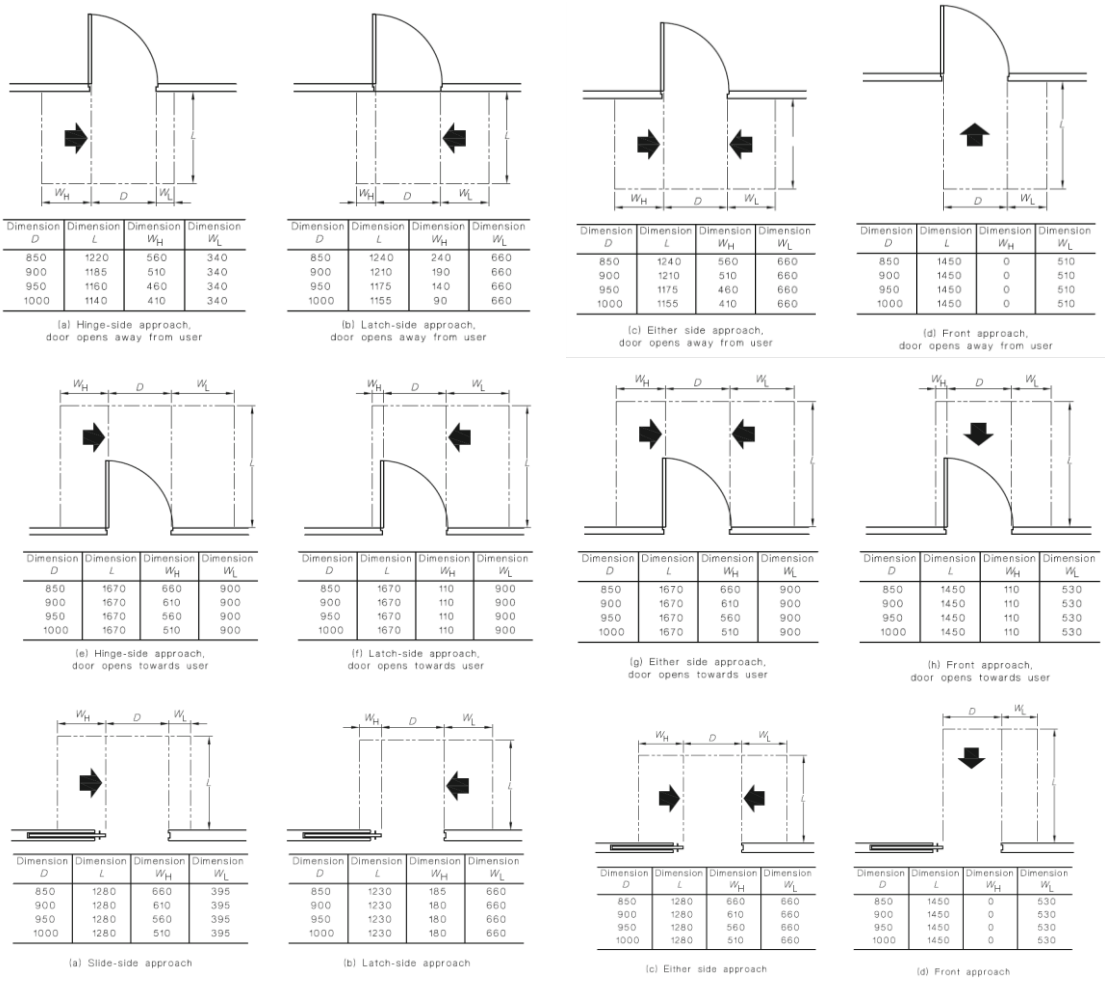
AS1428.1 Cl. 11.2	Handrails shall be continuous throughout the stair flight and, where practicable, around landings and have no	**Further Information Required:** Stairway details including sections are to be provided for assessment in order to review

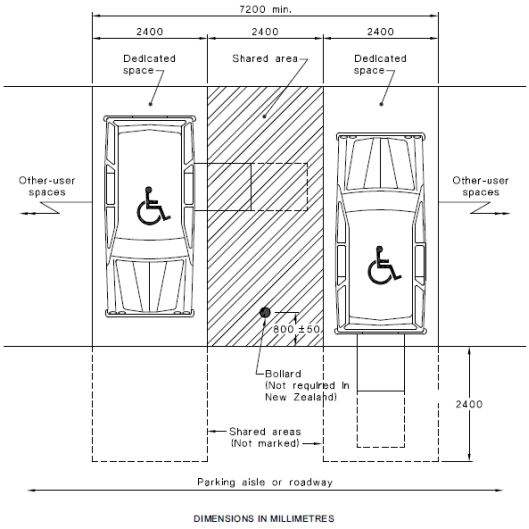
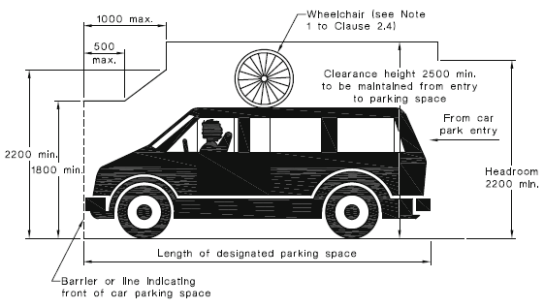
CLAUSE	REFERENCE	COMMENT
Stairway Handrails	obstruction on or above up to a height of 600 mm and as follows: + The design and construction of handrails shall comply with Clause 12 of AS 1428.1 – 2009. + Handrails shall be installed on both sides of the stairs. + Handrails shall have no vertical sections and shall follow the angle of the stairway nosings. + Where a handrail terminates at the bottom of a flight of stairs, the handrail shall extend at least one tread depth parallel to the line of nosings plus minimum of 300 mm horizontally from the last riser. + The handrail shall extend a minimum of 300 mm horizontally past the nosing on the top riser. + Where the handrail is continuous, the 300 mm extension is not required in the inner handrail at intermediate landings. + The dimensions indicating the heights of handrails shall be taken vertically from the nosing of the tread to the top of the handrail or from the landing to the top of the handrail.	the handrail design.
		
AS1428.1 Cl. 12 Handrails	The design and construction of handrails shall comply with the following: + The cross-section of handrails shall be circular or elliptical, between 30-50mm dia. for a width of not less than 270° around the uppermost surface. + Exposed edges shall have a radius of not less than 5mm. + The top of handrails shall be between 865-1000mm above the nosing line of a stairway, or the plane of finished floor otherwise. + The height of the top of the handrail shall be consistent through any stair, ramp, and landing. + 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. + The clearance between a handrail and an adjacent wall surface or other obstruction shall be not less than 50mm.	**Further Information Required:** Stairway and ramp details including sections are to be provided for assessment in order to review the handrail design.

CLAUSE	REFERENCE	COMMENT
AS1428.1 Cl. 13.1 Luminance Contrast	All doorways shall have a minimum luminance contrast of 30% provided between— + door leaf and door jamb; + door leaf and adjacent wall; + architrave and wall; + door leaf and architrave; or + door jamb and adjacent wall. The minimum width of the area of luminance contrast shall be 50 mm.	**Compliance Readily Achievable:**
AS1428.1 Cl. 13.2 / 13.3 Doorways	The minimum width of an accessible doorway must have a *clear opening* width of not less than 850mm in accordance with AS1428.1. Where double doors are provided, at least one leaf must have a clear unobstructed width of 850mm.  **Clear Unobstructed Width of Doorway** Circulation space is required to all doorways throughout the building that are required to be accessible in accordance with Section 13 of AS 1428.1 – 2009 (see diagrams below). Circulation space is not required to be provided to rooms where access for a person with a disability is not required i.e. dirty utility / clean utility rooms, plant rooms, comms rooms etc. See below required doorway circulation space for swinging and sliding doors.	**Further Information Required:** There are multiple doorways that do not achieve the minimum required circulation spaces as shown below;



Block C – Staff lounge and WC Lobby

CLAUSE	REFERENCE	COMMENT
	 (a) Hinge-side approach, door opens away from user (b) Latch-side approach, door opens away from user (c) Either side approach, door opens away from user (d) Front approach, door opens away from user (e) Hinge-side approach, door opens towards user (f) Latch-side approach, door opens towards user (g) Either side approach, door opens towards user (h) Front approach, door opens towards user (a) Slide-side approach (b) Latch-side approach (c) Either side approach (d) Front approach	
	AS1428.1 Cl. 13.4 Successive Doorways in Passages	The distance between doorways in vestibules, air locks and other similarly enclosed spaces shall be not less than 1450 mm. Where the doors encroach into space, the distance shall be not less than 1450 mm plus the door leaf width.	**Compliance Readily Achievable:**
	AS1428.1 Cl.13.5 Door Controls	Door handles and hardware to rooms required to be accessible must comply with the requirements of Clause 13.5 of AS 1428.1 – 2009.	**Compliance Readily Achievable:**
	AS1428.1 Cl.14.1 Switches and GPO's	All switches and controls shall be positioned at a height of 900-1000mm above the FFL and be no closer than 500mm to any corner	**Compliance Readily Achievable:**
	AS1428.1 Cl.14.12 Switches	Accessible SOU's and accessible WC's are required to be provided with 30mm x 30mm toggle switches Where push button switches are located associated with the security system of the entry doors, then the push button will need to be the mushroom type.	**Compliance Readily Achievable:**
	D3.4 Concessions	The following areas, and any path of travel providing access <u>only</u> to these areas, are not required to be accessible: + An area deemed inappropriate to access due to the areas particular use + An area that would pose a health or safety risk for people with a disability.	**Further Information Required:** Please confirm if there are any areas that are deemed inappropriate to access for people with disabilities due to that area's particular use, such as the Comms Rooms, Cleaners Rooms and the corridors serving them which do not provide the required doorway circulation areas.

CLAUSE	REFERENCE	COMMENT
D3.5 Accessible carparking	Accessible carparking spaces – + Must be provided in accordance with Table D3.5 + Must comply with AS 2890.6-2009 <table><tr><th>Class of building carpark is associated with</th><th>Number of accessible spaces required</th></tr><tr><td>Class 9b (i) Up to 1000 car spaces; and (ii) for each additional 100 carparking spaces or part thereof in excess of 1000 carparking spaces</td><td> 1 space for every 50 carparking spaces or part thereof 1 space</td></tr></table>	**Compliance Readily Achievable:**
AS1428.6 Cl.2.2 Parking Spaces	 DIMENSIONS IN MILLIMETRES	**Note:**
AS1428.6 Cl.2.2 Pavement	Each accessible parking space and shared area must have a maximum crossfall of 1:40 (or 1:33 for bitumen) and have a slip resistance surface	**Note:**
AS1428.6 Cl.2.4 Headroom	 DIMENSIONS IN MILLIMETRES	**Note:**
D3.6 Signage	In a building required to be accessible, braille and tactile signage must be provided to all: + Required accessible sanitary facilities + Spaces with hearing augmentation + Ambulant sanitary facilities + Non-accessible pedestrian entrances + Each door required to be provided with an exit sign Braille and tactile signage is to comply with sub-clause (a) and Specification 3.6.	**Compliance Readily Achievable:**

CLAUSE	REFERENCE	COMMENT

Signage Specification: -

The signage is to be: -

(a) Located between 1200-1600mm above FFL

(b) Signs with single lines of characters are to have the line of the tactile characters between 1250mm-1350mm above FFL

(c) Signage tactile characters must be raised or embossed to a height between 1mm-1.5mm

(d) Upper case letter to be between 20mm-55mm

(e) Signage is to be contrasting & is to comply with BCA Specification E3.6.

Signage Locations

The Braille & tactile egress signage is to be located adjacent or on (see above) each door that:-

(a) Provides direct egress into a fire isolated stairway

(b) Provides direct discharge from the storey into a passageway or lobby (airlock) associated with the fire isolated stairway

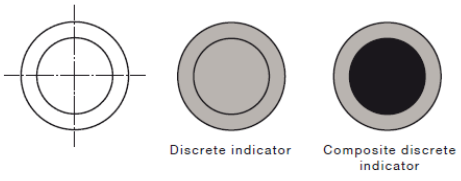
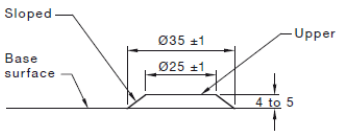
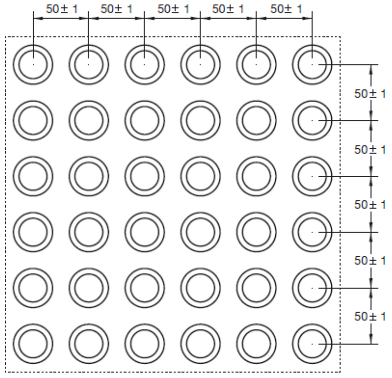
(c) Provide direct discharge from a fire isolated stairway to open space (discharge door)

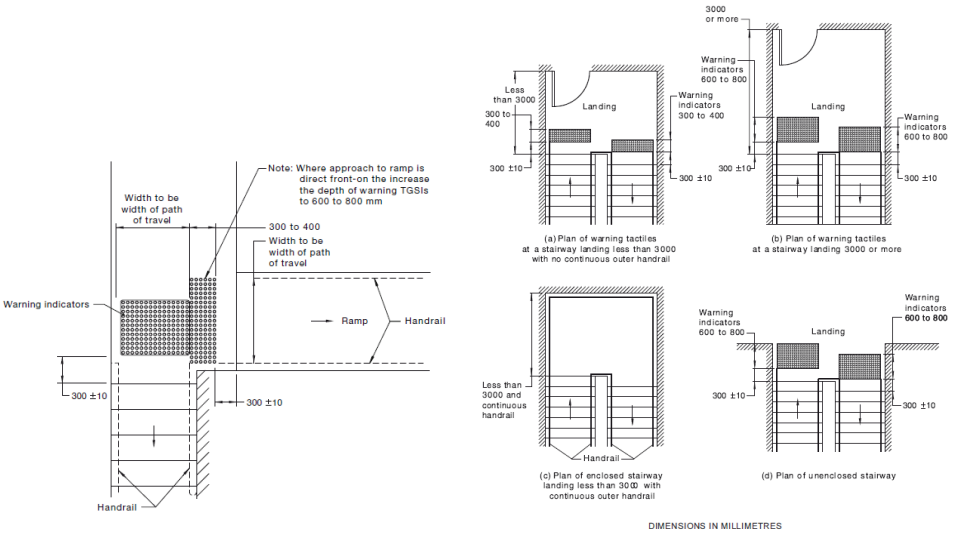
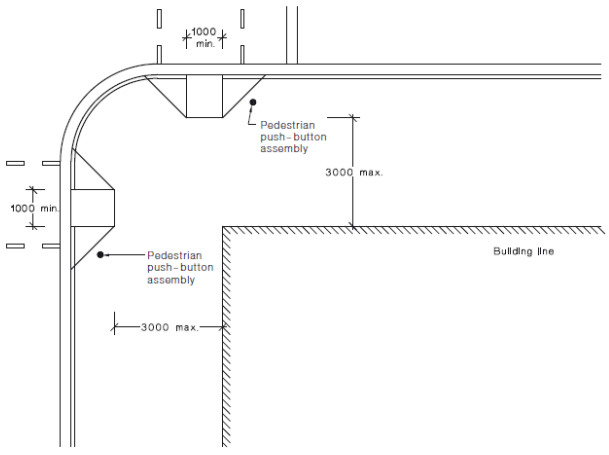
(d) Forms part of a horizontal exit (--/120/30 fire doors in the fire compartment walls)

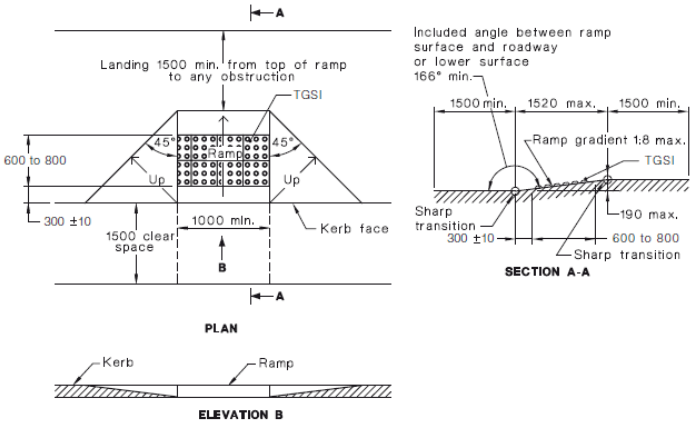
The below signage is an *example* of what is required –

	AS1428.1 Cl.8.1 Forms of Signage	The below signs are examples of required sanitary facility signage. The signs shall be positioned so that the raised braille is between 1200-1600mm above FFL.	**Note:**

D3.7 Hearing Augmentation	A hearing augmentation system must be provided where an inbuilt amplification system (excluding emergency warning systems) is present in the following areas: + In a room in a Class 9b + In an auditorium, conference room, meeting room, or judicatory room, + In a ticket office, teller's booth, reception area of the like where the public is screened by the service provider. A hearing augmentation system is required to comply in the following way: + An induction loop – it must serve >80% of the floor area of the spaced served by the inbuilt amplification system; or + A system requiring the use of receivers or the like. It must be available to not less than 95% of the floor of the space served and provide the applicable number of receivers; a) 500 people – 1 receiver for every 25 persons and a minimum of 2 receivers; and	**Further Information Required:** Details required of the proposed hearing augmentation system for any areas where inbuilt amplification system/PA system is installed. This may include all classrooms.

CLAUSE	REFERENCE	COMMENT
	b) 500-1000 people – 20 receivers plus 1 receiver for every 33 people in excess of 500; and c) 1000-2000 people – 35 receivers plus 1 receiver for every 50 people in excess of 1000; and d) >2000 people – 55 receivers plus 1 receiver for every 100 people in excess of 2000. Any screen or scoreboard capable of displaying public announcements must be capable of supplementing any public address system. The below symbol shall be provided on a sign in ultramarine blue in accordance with clause 5.1 of AS 1428.5-2010 	
D3.8 Tactile Indicators	Tactile ground surface indicators must be provided to: + A stairway, other than a fire-isolated stairway; and + An escalator or passenger conveyor; and + A ramp other than a fire-isolated ramp; and + In the absence of a suitable barrier- a) An overhead obstruction <2m above floor level; and b) An accessway meeting a vehicular way adjacent to any pedestrian entrance to a building including a pedestrian entrance serving an area referred to in D3.4, if there is no kerb or kerb ramp at that point. Tactile indicators are required to be designed in accordance with AS 1428.4.1-2009.	**Further Information Required:** Tactile indicators to be shown at stairways and ramps.
AS1428.4.1 Cl.2.2.3 Placement	 (a) Plans of individual truncated cones  (b) Elevation of individual truncated cone  (c) Plan arrangement of truncated cones for TGSIs DIMENSIONS IN MILLIMETRES	

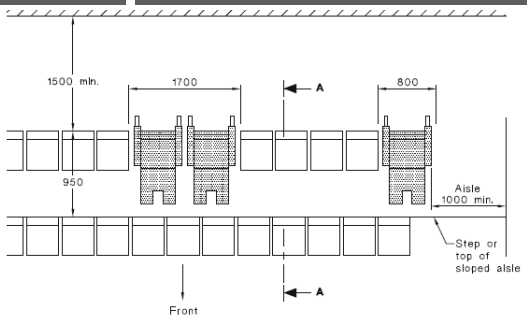
CLAUSE	REFERENCE	COMMENT
AS1428.4.1 Cl.2.4 Stairways		
AS1428.4.1 C3 Kerb Ramps	TGSI's are <u>not</u> required on kerb ramps if – + the distance between the building line/boundary and the top of the kerb ramp is less than 3 m; + the change in gradient between that of the pedestrian surface at the top of the kerb ramp and the gradient of the kerb ramp surface lies between 1 in 8 to 1 in 8.5; and + the kerb ramp is aligned with the building line and  Note: When the kerb ramp is the only crossing entry point, and the top of the ramp is within 3000 of the building line, and the kerb ramp is aligned with the building line and in the direction of travel across the carriageway, and the gradient of the kerb ramp is between 1 in 8 and 1 in 8.5, TGSIs are not required on the face of kerb ramp. DIMENSIONS IN MILLIMETRES Tactiles <u>are</u> required when a kerb ramp where the gradient is shallower than 1 in 8.5.	

CLAUSE	REFERENCE	COMMENT
	 DIMENSIONS IN MILLIMETRES FIGURE C1 DESIGN CRITERIA FOR KERB RAMPS	
D3.9 Wheelchair Seating Spaces in Class 9b Assembly Buildings	Where fixed seating is provided in a Class 9b, wheelchair seating spaces must be provided in accordance with the below Table	**Note:** The referenced plans do not currently show any fixed seating to Class 9b parts however if fixed seating is incorporated into future designs, this clause will be applicable.

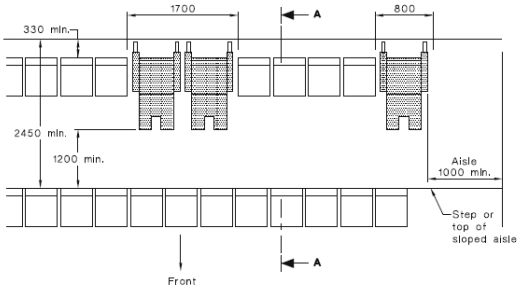
Number of fixed seats in a room or space	Number of wheelchair seating spaces	Grouping and Location
Up to 150	3 spaces.	1 single space; and 1 group of 2 spaces
151 to 800	3 spaces; plus 1 additional space for each additional 50 seats or part thereof in excess of 150 seats.	Not less than 1 single space; and not less than 1 group of 2 spaces; and not more than 5 spaces in any other group.
801 to 10,000	16 spaces; plus 1 additional space for each additional 100 seats or part thereof in excess of 800 seats.	Not less than 2 single spaces; and not less than 2 groups of 2 spaces and not more than 5 spaces in any other group; and the location of spaces is to be representative of the range of seating provided.
More than 10,000	108 spaces; plus 1 additional space for each additional 200 seats or part thereof in excess of 10,000 seats.	Not less than 5 single spaces; and not less than 5 groups of 2 spaces and not more than 10 spaces in any other group; and the location of spaces is to be representative of the range of seating provided.

	AS1428.1 Cl.18.1 Seating spaces	Where fixed seating is provided, the wheelchair seating spaces must be spaced: + Adjacent to, and on the same level as, other seating in the row and shall be accessed by a continuous accessible path of travel; and + Located to allow lines of sight comparable to those for general viewing areas and shall not be obstructed by opaque handrails or balustrades.	**Note:**
	AS1428.1 Cl.18.2 Surfaces	The ground or floor at wheelchair seating spaces shall be level when indoors or a gradient not steeper than 1 in 40 in outdoor areas.	**Compliance Readily Achievable:**
	AS1428.1 Cl.18.3 Spatial Requirements	The minimum space for each wheelchair shall be as shown in Figure 54(A). The whole of the space allocated for any wheelchair shall not impinge on the dimensions required for aisles by more than 250 mm, or for crossovers by more than 300 mm. See Figures 54(B) and 54(C).	**Compliance Readily Achievable:**

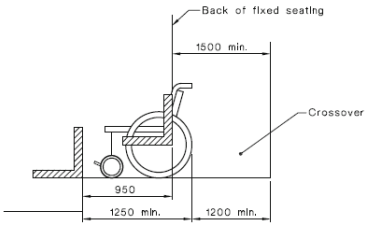
CLAUSE	REFERENCE	COMMENT



PLAN—APPROACH FROM THE REAR



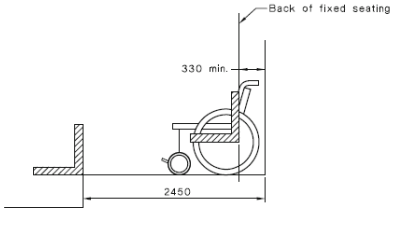
PLAN—APPROACH FROM THE FRONT



SECTION A-A

DIMENSIONS IN MILLIMETRES

FIGURE 54(A) WHEELCHAIR SEATING SPACES IN AUDITORIA WITH AISLES AND CROSSOVERS—APPROACH FROM THE REAR



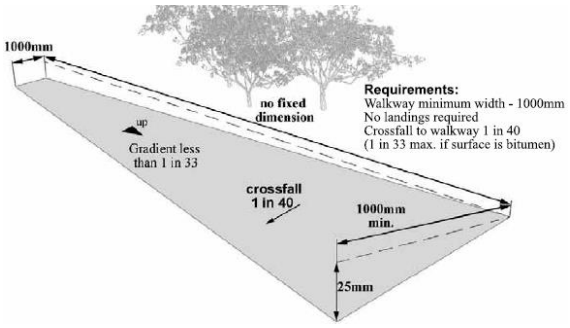
SECTION A-A

DIMENSIONS IN MILLIMETRES

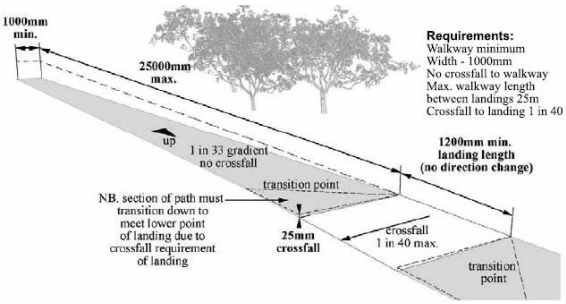
FIGURE 54(B) WHEELCHAIR SEATING SPACES IN AUDITORIA WITH AISLES AND CROSSOVERS—APPROACH FROM THE FRONT

D3.11 Ramps		Ramps may be used as part of an accessway where there is a change of level and must comply with the requirements set out in AS1428.1	**Further Information Required:** If any ramps are proposed as part of an accessway they are to be clearly shown on the referenced plans and the gradients provided.
	AS1428.1 Cl 10.1 Walkways, Ramps, and Landings - Generally	Walkways, ramps and landings that are provided on a continuous accessible path of travel shall be as follows: + Sharp transitions shall be provided between the planes of landings and ramps. + Landings shall be provided at all changes in direction in accordance with Clause 10.8. + Landing or circulation space shall be provided at every doorway, gate, or similar opening. + For walkways and landings having gradients in the direction of travel shallower than 1 in 33, a camber or crossfall shall be provided for shedding of water and shall be no steeper than 1 in 40, except that bitumen surfaces shall have a camber or crossfall no steeper than 1 in 33. *NOTE: For requirements for ground surfaces, see Clause 7.*	**Compliance Readily Achievable:**
	AS1428.1 Cl. 10.2 Walkways	The requirements for walkways are as follows: + Walkways can have a gradient up to 1:20. Anything steeper is a ramp and requires kerbs or kerb rails plus handrails to both sides. + A walkway with a gradient less than 1 in 33 does not require landings but does require a crossfall of maximum 1 in 40 (maximum cross fall of 1 in 33 if the surface is bitumen). Walkways steeper than 1 in 33 do not require a crossfall to the main walkway but do require a crossfall of 1 in 40 to landings	**Compliance Readily Achievable:**

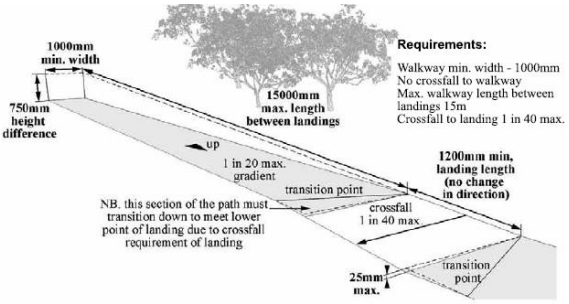
CLAUSE	REFERENCE	COMMENT



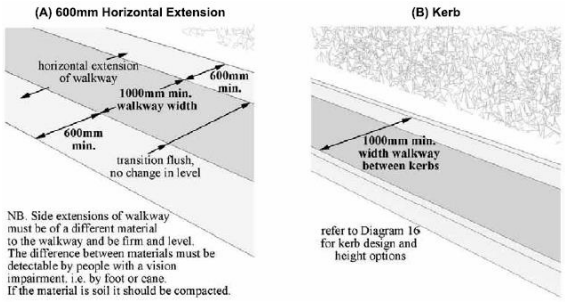
Requirements for a Walkway with a Gradient Less Than 1 in 33



Requirements for a Walkway with a 1 in 33 Gradient

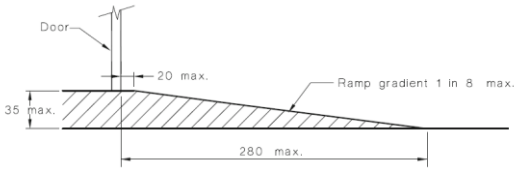


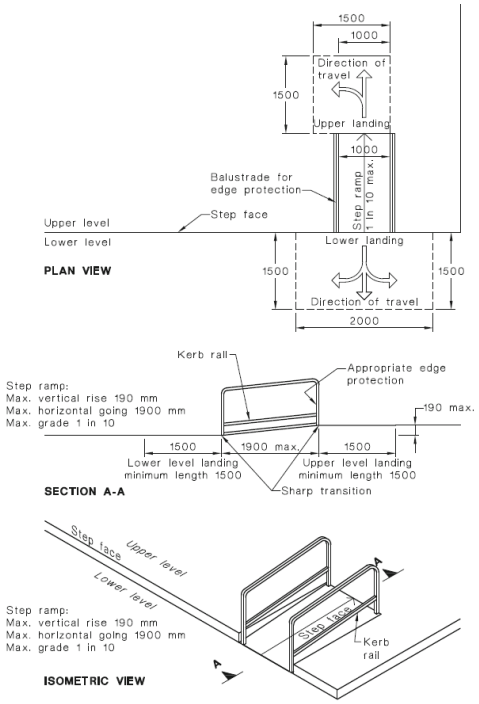
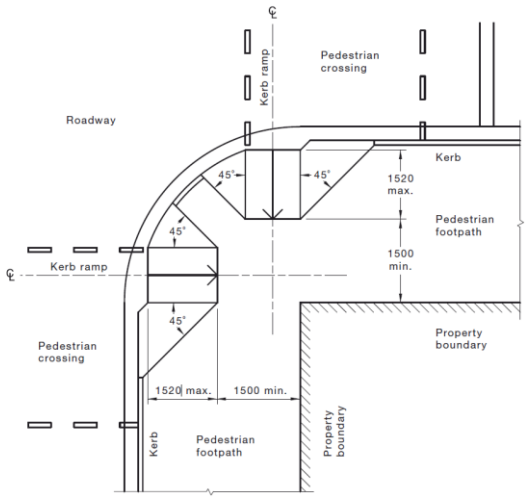
Requirements for a Walkway with a 1 in 20 Gradient



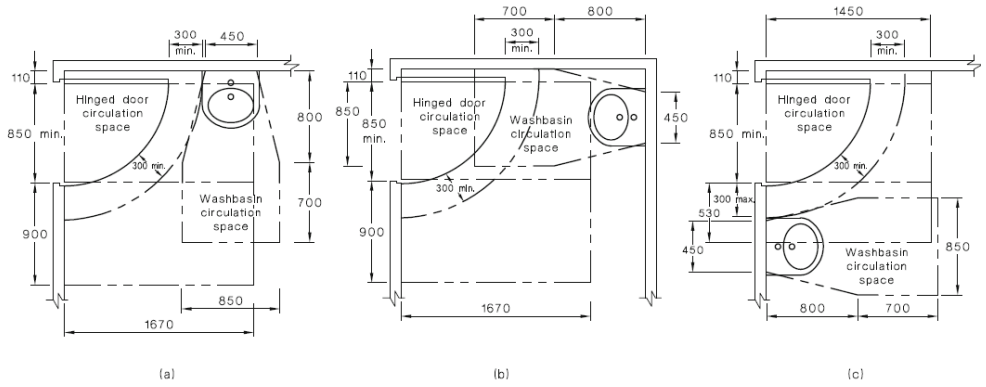
Requirements for Edges of Walkways

	AS1428.1 Cl. 10.3 Ramps	Ramps to comply with the following: + Maximum gradient of a ramp exceeding 1900mm shall be 1 in 14. + The gradient of a ramp shall be constant throughout its length. + Ramps shall be provided with landings: (a) For ramp gradients of 1 in 14, at intervals not greater than 9m. (b) For ramp gradients steeper than 1 in 20, at intervals not greater than 15m. (c) For ramp gradients between 1 in 14 and steeper than 1 in 20, at interpolated intervals.	**Compliance Readily Achievable:**

CLAUSE	REFERENCE	COMMENT
	+ Handrails must be provided on either side complying with Clause 12. + TGSIs shall be installed in accordance with AS 1428.4.1. + Ramps shall be set-back at internal corridors so that handrail extensions do not protrude in to paths of travel. Ramps and intermediate landings shall have kerbs or kerb rails on either side.	
AS1428.1 Cl. 10.4 Curved Walkways, Ramps, and Landings	Curved ramps, walkways, and landings shall comply with the following: + Curved walkways shall have a width not less than 1500mm. + Any cross-fall shall be towards the centre of curvature. The gradient of curved ramps and walkways shall comply with the graph in Figure 20 within AS 1428.1 – 2009.	**Note:**
AS1428.1 Cl. 10.5 Threshold Ramps	Threshold ramps at doorways on a continuous path of travel shall have— + a maximum rise of 35 mm; + a maximum length of 280 mm; + a maximum gradient of 1:8; and + be located within 20 mm of the door leaf which it serves. 	**Note:**
AS1428.1 Cl. 10.6 Step Ramps	Step ramps shall have— + a maximum rise of 190 mm; + a length not greater than 1900 mm; and + a gradient not steeper than 1 in 10. The edges of step ramp shall have a 45° splay where there is pedestrian cross traffic. Otherwise, it shall be protected by a suitable barrier, such as— + a wall or suitable barrier with a minimum height of 450 mm; or + where an open balustrade is provided a kerb or kerb rail shall be provided.	**Note:**

CLAUSE	REFERENCE	COMMENT
		
AS1428.1 Cl. 10.7 Kerb Ramps	Kerb ramps shall have + a maximum rise of 190 mm; and + a length not greater than 1520 mm; and + a gradient not steeper than 1 in 8, located within or attached to a kerb; and be aligned in the direction of travel as shown below.  Refer to Clause 10.7 of AS 1428.1 - 2009 for the full requirements for Kerb Ramps.	**Note:**
AS1428.1 Cl. 10.8 Landings	<u>Walkways and ramps</u> The length of landings at walkways (up to a gradient of 1 in 33) and ramps shall comply with one of the following: + Where there is no change in direction, the length shall be not less than 1200 mm, as shown in **Figure 25(A).** + Where there is a change of direction not exceeding 90°, the landing shall be not less than 1500 mm. The internal corner shall be truncated for a minimum of 500 mm in both directions, as shown in **Figure 25(B).**	**Note:**

CLAUSE	REFERENCE	COMMENT
	+ For a 180° turn, the landing shall be as shown in **Figure 25(C).** <u>Step ramps</u> + The length of landings at step ramps shall be not less than 1200 mm in the direction of travel, as shown in **Figures 22(A)** and **22(B).** + Where a change in direction is required, the length of step ramp landings shall be a minimum of 1500 mm, as shown in **Figure 22(A).** + Where doorways are at landings, the dimensions of the landings shall be in accordance with the requirements of Clause 13.3 for circulation spaces at doorways shown in **Figure 25(D).** <u>Kerb ramps</u> The length of landings at kerb ramps shall be not less than 1200 mm in the direction of travel. Where a 'T' junction occurs, the kerb ramp landing shall be a minimum of 1500 × 2000 mm, as shown in Figure 24(B). Where a single change in direction is required, the ramp landings shall be a minimum of 1500 mm × 1500 mm. **See Below for Figures**	
AS 1428.1 Cl. 15.6 Circulation spaces in accessible sanitary facilities.	The washbasin may encroach into the circulation space of the door in accordance with Figures 51(A).	**Compliance readily achievable** **Further Information Required** The referenced plans currently do not show the accessible w.c fit out. Details to be provided so that we can undertake a detailed review.



DIMENSIONS IN MILLIMETRES

FIGURE 51(A) ALLOWABLE ENCROACHMENT OF A WASHBASIN INTO HINGED DOOR CIRCULATION SPACE

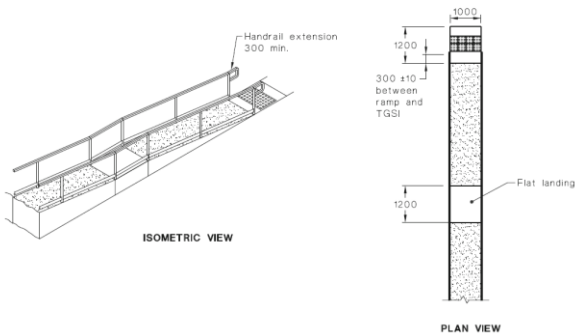


Figure 25A

CLAUSE	REFERENCE	COMMENT

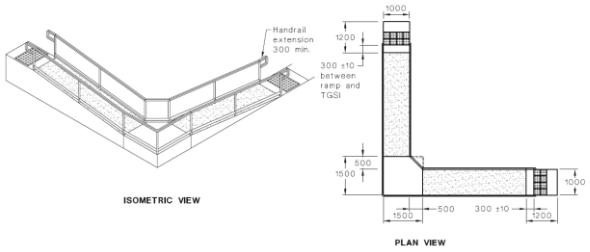


Figure 25B

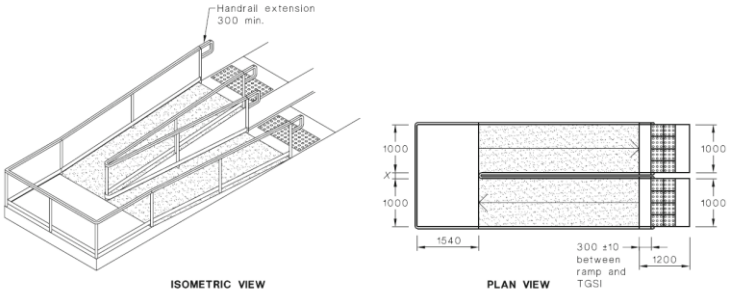
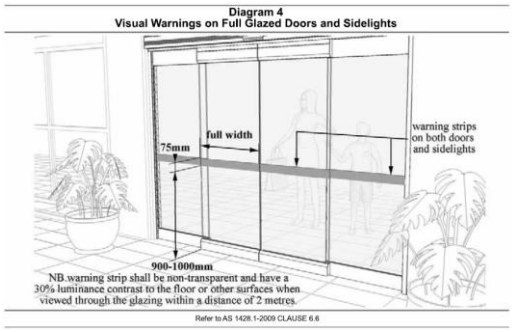
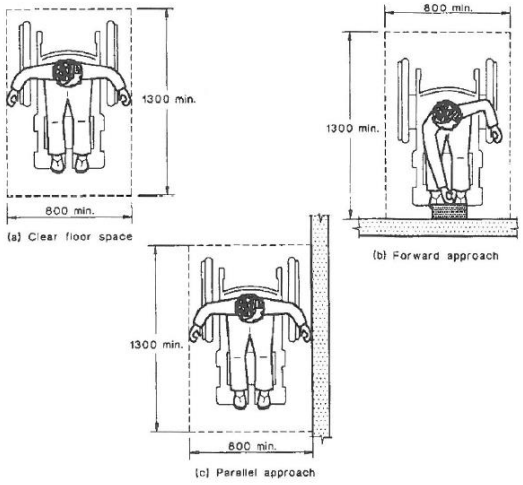
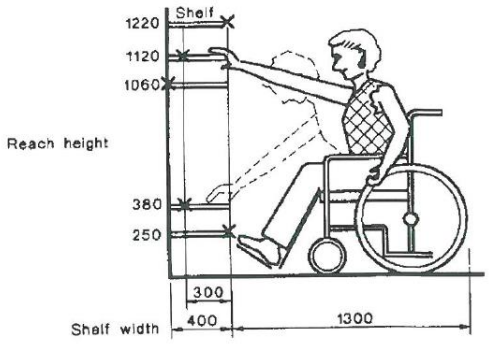


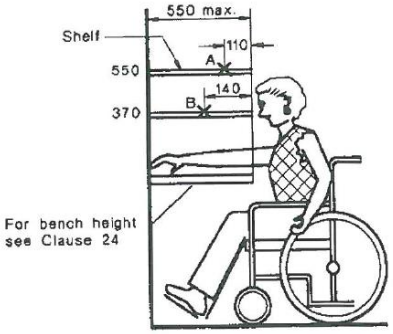
Figure 25C

D3.12 Glazing on an Accessway		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.	**Compliance Readily Achievable:**
	AS1428.1 Cl. 6.6 Visual Indicators on Glazing	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.  	
AS 1428.2-1992	***Enhanced and additional requirements – Buildings and facilities***		
	AS1428.2 Cl. 6 Circulation Spaces	The minimum clear floor or ground space required to accommodate a single stationary wheelchair and occupant shall be 800mm by 1300 (see figure 1). The minimum clear floor or ground space for wheelchair may be positioned for forward or parallel approach to an object. Clear floor or ground space for wheelchairs may be part of the knee space required under objects.	**Compliance Readily Achievable:**

		6.4 Width of path of travel – The minimum clear width of a path of travel shall be 1200mm except at doors.  DIMENSIONS IN MILLIMETRES FIGURE 1 MINIMUM CLEAR FLOOR SPACE FOR WHEELCHAIRS	
	AS1428.2 Cl. 8 Walkways, Ramps and Landings	General walkways, ramps and landings shall comply with AS 1428.1, with the following exceptions and additional requirements: a) Width walkways, ramps and landings shall have an unobstructed width of not less than 1200mm. b) Provisions of landings at ramps – Ramps shall be provided with landings at the top and bottom of the ramp and at intervals not exceeding i. For ramp gradients of 1 in 14: 6m ii. For ramp gradients of 1 in 19: 14m iii. For ramp gradients between 1 in 19 and 1 in 14, at intervals which shall be obtained by linear interpolation c) Doorways at landings - The dimensions of the landings shall be in accordance with Clause 11.5.4	**Further Information Required:** Ramp gradients to be shown on the plans.
	AS1428.2 Cl. 12 Lifts	Lifts shall comply with AS 1735.12, except that the floor area shall be increased 300mm in each direction, from the minimum size specified in AS 1735.12.	**Compliance Readily Achievable:**
	AS1428.2 Cl. 21 Hearing Augmentation – Listening Systems	Where a sound amplification system is provided, a listening system to aid hearing impaired people shall be installed or made available and shall cover at least 10 percent of the total area of the enclosed space. A sign indicating that an assistive hearing device is installed or is available shall be provided in accordance with Clauses 16 and 17 at the main door or doors to the enclosed space. Where the listening system does not cover the total area of the enclosed space, the boundaries of the area served shall be designated by such signs.	**Note:**
	AS1428.2 Reach Ranges	**Forward reach wheelchair users –** If the clear floor space allows only forward approach to an object by a person in a wheelchair, objects shall be in the reach range shown in Figure 20(a). If the high forward approach is over an obstruction, objects shall be within the reach range shown in Figure 20(b)	**Compliance Readily Achievable:**



(a) Forward reach limit



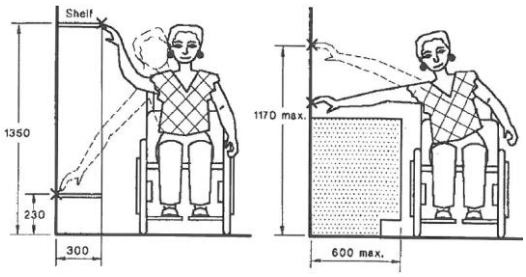
(b) Maximum forward reach over an obstruction

LEGEND:
X = points reached

DIMENSIONS IN MILLIMETRES

FIGURE 20 FORWARD REACH — WHEELCHAIR USERS

22.2 Side reach wheelchair users – If the clear floor space allows parallel approach to an object by a person in a wheelchair, objects shall be in the reach range shown in Figure 21(a). if the side reach is over an obstruction, objects shall be within the reach range shown in Figure 21(b)



(a) High and low side reach limits

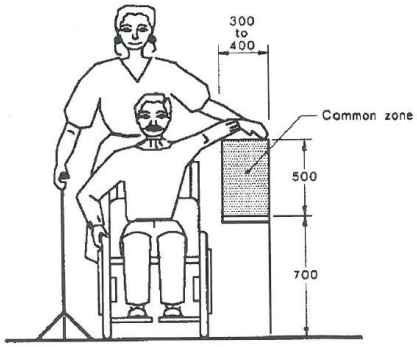
(b) Maximum side reach over obstruction

LEGEND:
X = points reached

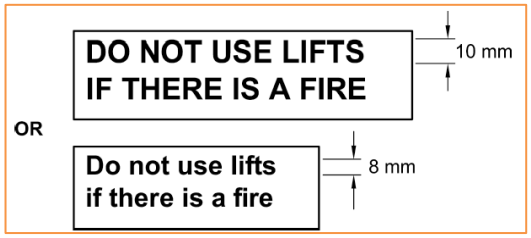
DIMENSIONS IN MILLIMETRES

FIGURE 21 SIDE REACH – WHEELCHAIR USERS

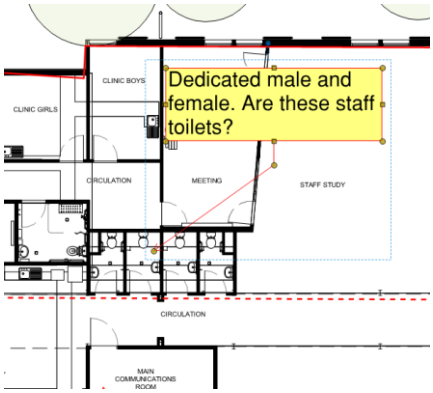
22.4 Zone of Common Reach - The zone for reach to objects which will be suitable for both ambulant people with disabilities and wheelchair users is shown in Figure 23.

	 DIMENSIONS IN MILLIMETRES FIGURE 23 ZONE OF COMMON REACH FOR AMBULANT PEOPLE WITH DISABILITIES AND WHEELCHAIR USERS	
SECTION E	**SERVICES AND EQUIPMENT**	
Part E1	***Fire Fighting Equipment***	
E1.3 Fire Hydrants	A Hydrant system is required to be installed in accordance with AS 2419.1 – 2005 given the total floor area of the building exceeding 500msq. Any required Fire Hydrant Booster assembly that is required must be affixed to the external wall and protected by a radiant heat shield that has an FRL of 90/90/90 located 2 metres either side and 3 metres above the outlets. Alternatively, the booster needs to be located at least 10m away from the building and any high voltage power supply. *Note: The requirement to separate a fire hydrant booster assembly from a building does not apply where that building is protected with a sprinkler system in accordance with Spec E1.5.* Any Internal Hydrants are to be located within the fire isolated exits or within 4m of the top riser of the non-fire isolated exits (external stairs in lieu of fire stairs). In addition, if floor coverage cannot be achieved supplementary fire hydrants may be provided to suit the operational requirements of the NSW Fire Brigades. External attack hydrants are required to be located not less than 10 metres from the building or protected by construction having an FRL of not less than 90/90/90 and extending 2 metres each side of the hydrant outlets and extending 3 metres above ground level. In addition, Hydrants must be located not less than 10 metres from high voltage main electrical distribution equipment or liquefied petroleum gas. Where required, a hydrant pump room is required to have a door opening to a road or open space, or a door opening direct into a fire isolated airlock connected to a fire stair.	**Further Information Required/** **Performance Solution:** The location of the Fire Hydrant Booster assembly is not fully compliant as it is not located with main sight of all building entry points. Performance solution required. The proposed location for the external Hydrant Pump Room is within 6m of the external walls of Building C which is not proposed to be sprinkler protected. As such, the enclosing walls of the Pump Room are required to achieve a minimum FRL of 90/90/90 or alternatively, the Pump Room is to be relocated to a position that it more than 6m from the external wall of Building C. *Note: Should BCA 2022 be applicable to the project, Fire Hydrant system shall comply with AS 2419.1-2021.* The hydrant booster assembly is required to be located not less than 10m from any high voltage main electrical distribution equipment and LP gas and storage. Furthermore, there is an external hydrant proposed in the middle of the car park driving aisle. The external hydrant will need to be re-positioned to a suitable location as determined by the hydraulic consultant. The proposed external hydrants do not provide full coverage to Level 1 of Block AB and there appear to be no internal hydrant proposed on Level 1. As such, there is a coverage shortfall across level 1.
E1.4 Fire Hose Reels	Does not apply to Class 2, 3, 4, 5, 8 (electricity network substation), 9c or classrooms and associated corridors in a school. A fire hose reel system must be provided to serve a building where one or more internal fire hydrants are installed or in a building with a floor area greater than 500m². Fire Hose Reels are to be located within 4m of an exit, or located adjacent to an internal hydrant (other than one within a fire isolated exit). Where system coverage is not achieved by the above, additional FHR may be located in paths of travel to an exit. Fire hose reels must be located	**Further Information Required:** There are no fire hose reels proposed in Block D which is required to be served by a fire hose reel system as it comprises Class 9b and does not contain classrooms. The plans are to be updated to demonstrate full coverage in Block D with fire hose reels in compliant locations.

	internally, externally or in any combination to achieve the system coverage specified in AS 2441. Fire hose reels must not pass through any fire or smoke doors except if it is a doorway referred to in BCA Clause C2.5 (a)(v), C2.12, C2.13 or C3.13. Fire hose reels must only serve the storey on which they are located except for an SOU or not more than 2 storeys for a Class 5 / 6 / 7 / 8 or 9 may be served by a single fire hose reel located at the level of egress.	
E1.6 Portable Fire Extinguishers	Portable fire extinguishers must be provided as listed in Table E1.6 and must be selected, located and distributed in accordance with Sections 1, 2, 3 and 4 of AS 2444 In a class 2 building, portable fire extinguishers must be: + An ABE type fire extinguisher; and + A minimum size of 2.5kg; and + Distributed outside a sole-occupancy unit- a) to serve only the storey at which they are located; and so that the travel distance from the entrance doorway of any sole-occupancy unit to the nearest fire extinguisher is not more than 10m.	**Compliance Readily Achievable**: Design statement to be provided at S6.28 BCA Crown Certificate stage.
E1.9 Fire Precautions During Construction	In buildings under construction at least one fire extinguisher to suit Class A, B and C fires and electrical fires must be provided at all times on each storey adjacent to a required exit and if the building has reached an effective height of 12m the required hydrant and hose reel systems must be installed, as set out in (b)(ii) and be operational and any required booster connections must be installed	**Contactor to note.**
E1.10 Provisions for Special Hazards	Suitable additional provisions must be made for fire-fighting if unique problems could arise due to; + The nature or quantity of materials stored, displayed or used in a building on the allotment; or + The location of the building in relation to a water supply for firefighting purposed.	**Note.**
Part E2	***Smoke Hazard Management***	
E2.2 General Requirements for Smoke Hazard Management (including Tables E2.2a & E2.2b)	Buildings must comply with the provisions of Table E2.2a, as applicable to Class 2 to 9 buildings and Table E2.2b as applicable to Class 6 and 9b buildings.	**Further Information Required:** The following fire safety measures are required: + Automatic shutdown of air handling system (there than non-ducted individual room units with a compacity more than 1000L/s and miscellaneous exhaust air system installed in accordance with sections 5 and 6 of AS 1668.1) which does not form part of the smoke hazard management system; + An Automatic smoke detection and alarm system complying with AS 1670.1-2018 unless otherwise noted in the fire engineering report. Design statement to be provided at S6.28 BCA Crown Certificate stage.
E2.3 Provision for Special Hazards	Additional smoke hazard management measures may be necessary due to the nature of a buildings special characteristic, its use, the nature of materials being stored in them and special mix of classifications.	**Noted**
Part E3	***Lift Installations***	
E3.3 Warning Against Use of Lifts in Fire	Warning signs required be provided must be displayed where they can be readily seen and must comply with the details and dimensions of Figure E3.3 below.	**Compliance Readily Achievable**: Detail to be included in the design.

		
E3.5 Landings	E3.5(a) The provisions of clause 12.2 – "Access" of AS 1735.2 do not apply. E3.5(b) The provisions of Clause A3.2 – "Access to landings" of Appendix A of AS 1735.1 do not apply. E3.5(c) Access and egress to and from lift well landings must comply with the Deemed-to-Satisfy Provisions of Part D.	**Compliance Readily Achievable**: Design statement to be provided at S6.28 BCA Crown Certificate stage.
E3.6 Passenger Lifts	In an accessible building, every passenger lift must be one of the types identified in Table E3.6a, have accessible features in accordance with Table E3.6b and not rely on a constant pressure device for its operation if the lift car is fully enclosed.	**Compliance Readily Achievable**: Design statement to be provided at S6.28 BCA Crown Certificate stage.
Part E4	***Emergency Lighting, Exit Signage and Warning Systems***	
E4.2 Emergency Lighting	This clause details when emergency lighting must be installed in Class 2 to 9 buildings. The requirements for buildings and parts of buildings are detailed in sub-clauses (a) to (i) and each sub-clause must be considered as more than one may apply to any single building.	**Compliance Readily Achievable**: Design statement to be provided at S6.28 BCA Crown Certificate stage
E4.3 Measurement of Distances	Distance, other than vertical rise, must be measured along the shortest path of travel whether by straight lines, curves or a combination of both.	**Note.**
E4.4 Design and Operation of Emergency Lighting	Every required emergency lighting system must comply with AS2293.1 - 2018	**Compliance Readily Achievable**: Design statement to be provided at S6.28 BCA Crown Certificate stage
E4.5 Exit Signs	An exit sign must be clearly visible to persons approaching the exit and must be installed on, above or adjacent to each door providing egress from a building. Sub-clauses (a) to (d) set out the situations where exit signs are required to be installed.	**Compliance Readily Achievable**: Design statement to be provided at S6.28 BCA Crown Certificate stage
E4.6 Direction Signs	If an exit is not readily apparent to persons occupying or visiting the building then exit signs must be installed in appropriate positions in corridors, hallways, lobbies, and the like, indicating the direction to a required exit.	**Compliance Readily Achievable**: Design statement to be provided at S6.28 BCA Crown Certificate stage
E4.8 Design and Operation of Exit Signs	Every required exit sign must comply with AS/NZS 2293.1 - 2018 and be clearly visible at all times when the building is occupied by any person having the legal right of entry into the building.	**Compliance Readily Achievable**: Design statement to be provided at S6.28 BCA Crown Certificate stage
E4.9 Emergency Warning Intercom System (EWIS)	Emergency Warning Intercom System (EWIS) complying with AS 1670.4 - 2018 must be installed— + In a Class 9b building used as a school and having a rise in storeys of more than 3 or used as a theatre, public hall, **or the like**, having a floor area more than 1000m^2 or a rise in storeys of more than 2.	**Not Applicable:** All Blocks are less than 3 storeys.
SECTION F	**HEALTH AND AMENITY**	
Part F1	***Damp & Weather Proofing***	
F1.1 Stormwater Drainage	Stormwater drainage must comply with AS/NZ 3500.3 - 2018	**Compliance Readily Achievable**: Design statement to be provided at S6.28 BCA Crown Certificate stage.

F1.5 Roof Coverings	This clause details the materials and appropriate standards, with which roofs must be covered with. The roofing requirements are set out in sub-clauses (a), (b), (c), (d), (e) & (f) which set out the types of materials that may be used and the adopted Australian Standards that apply to their quality and installation.	**Compliance Readily Achievable**: Certification to be provided at the S6.28 BCA Crown Certificate stage.
F1.6 Sarking	Sarking-type materials used for weatherproofing of roofs must comply with AS/NZS 4200 parts 1 and 2	**Compliance Readily Achievable**: Details to be included into the design.
F1.7 Waterproofing of Wet Areas in Buildings	This clause requires that wet areas in Class 2 to 9 buildings must be waterproofed. It prescribes the standards to which the work must be carried on the construction of rooms containing urinals and their installation.	**Compliance Readily Achievable**: Certification to be provided at the BCA Completion Certificate stage.
F1.9 Damp-Proofing	Moisture from the ground must be prevented from reaching: + The lowest floor timbers and the walls above the lowest floor joists; and + The walls above the damp-proof course; and + The underside of a suspended floor constructed of a material other than timber, and the supporting beams or girders. Where a damp-proof course is provided, it must consist of: + A material that complies with AS 2904; or + Impervious sheet material in accordance with AS 3660.1.	**Compliance Readily Achievable**: Details to be included into the design.
F1.10 Damp-Proofing of Floors on the Ground	If the floor of a room is laid on the ground or on fill, moisture from the ground must be prevented from reaching the upper surface of the floor and adjacent walls by the insertion of a vapour barrier in accordance with AS 2870. Damp-proofing need not be provided if weatherproofing is not required or the floor is the base of a stair, lift or similar shaft which is adequately drained by gravitation or mechanical means.	**Compliance Readily Achievable**: Details to be included into the design.
F1.13 Glazed Assemblies	Glazed assemblies in an external wall must comply with AS2047 - 2014 requirements for resistance to water penetration for windows, sliding doors with a frame, adjustable louvres, shop fronts and windows with one piece framing	**Compliance Readily Achievable**: Details to be included into the design.
Part F2	***Sanitary & Other Facilities***	
F2.2 Calculation of Number of Occupants and Fixtures	This clause sets out the requirements for the calculation of the number of occupants and the number of sanitary facilities required to be installed in Class 2 to 9 buildings as per D1.13, F2.1 and F2.3 In calculating the number of sanitary facilities to be provided under F2.1 and F2.3, a unisex facility required for people with a disability (other than a facility provided under F2.9) may be counted once for each sex.	**Noted.**
F2.3 Facilities in Class 3 to 9 buildings	Except where permitted by (b), (c), (f), F2.4(a), F2.4(b) and F2.9(b), separate sanitary facilities for males and females must be provided for Class 3, 5, 6, 7, 8 or 9 buildings in accordance with Table F2.3. If not more than 10 people are employed, a unisex facility may be provided instead of separate facilities for each sex. When accessible sanitary facilities are provided, they account once for each sex.	**Further Information Required:** The proposed unisex staff toilet in the library area cannot serve as a unisex facility unless there are less than ten people employed by the library.

		The bank toilets in Block C are to be labelled as being for either staff or students and male or female.  Confirmation is required if the library is for school student use only, or is open to the public.

School Students = 680 *(as advised by Architect on 24/3/21)*							
	Closet Pans		**Urinals***		**Washbasins**		**Complies**
	Required	**Proposed**	**Required**	**Proposed**	**Required**	**Proposed**	**Yes/No**
Male	6	7	5	7	7	14	Yes
Female	10	12	-	-	7	12	Yes

**we have considered 7 of the Student W.C's as urinals for the purposes of BCA assessment.*

Staff = 63 *(as advised by Architect on 24/3/21)*							
	Closet Pans		**Urinals***		**Washbasins**		**Complies**
	Required	**Proposed**	**Required**	**Proposed**	**Required**	**Proposed**	**Yes/No**
Male	2	2	2	3	2	3	Yes
Female	3	3	-	-	2	3	Yes

**we have considered 3 of the Staff W.C's as urinals for the purposes of BCA assessment.*

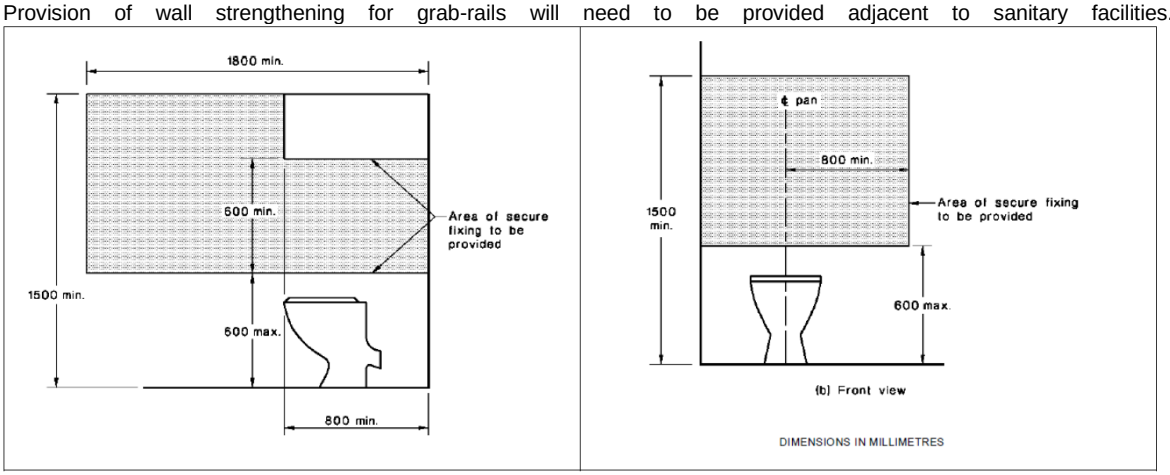
Note 1: The accessible toilet facilities can be counted once for each sex in accordance with BCA clause F2.2I.

F2.4 Accessible Sanitary Facilities	Accessible unisex sanitary compartments must be provided, in accordance with Table F2.4(a) and unisex showers must be provided in accordance with Table F2.4(b), in buildings or parts that are required to be accessible. The details for the provision of disable facilities and the standard, AS 1428.1, are set out in sub-clauses (a) to (i). At each bank of toilets where there is one or more toilets in addition to an accessible unisex sanitary compartment at that bank of toilets, a sanitary compartment suitable for a person with an ambulant disability in accordance with AS 1428.1 must be provided for use by males and females	**Further Information Required:** The plans are to be updated to show fully compliant accessibility fit out in ambulant and accessible w.c including grabrails and other fittings and fixtures required under AS 1428.1-2009.

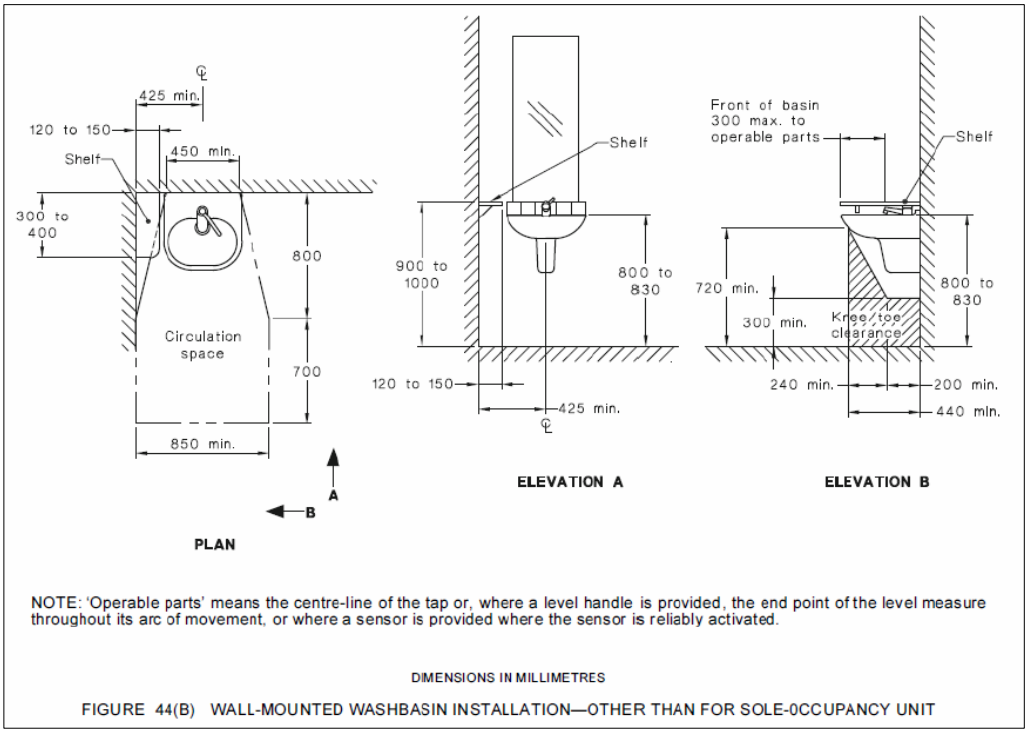
Unisex Accessible WCs

+ Tap sets will need to be specified with lever of capstan handles in the accessible sanitary facilities.

+ Provision of wall strengthening for grab-rails will need to be provided adjacent to sanitary facilities.



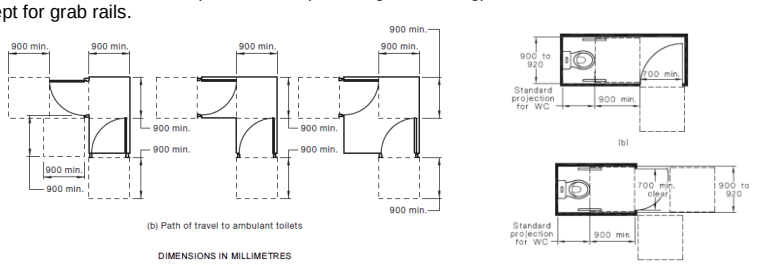
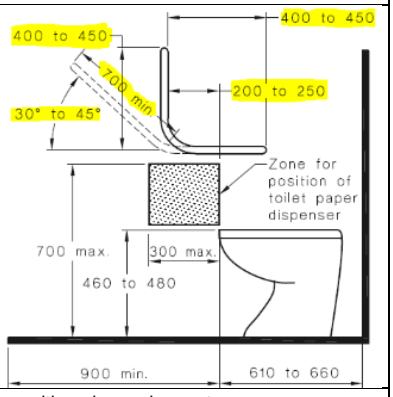
+ The location and installation of washbasins must comply with the requirements of AS 1428.1-2009.



Checklist for Accessible WCs	
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 auto-doors 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 300mm 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 are to 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.
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.

Ambulant WCs

Checklist for Ambulant WCs	
Entry Door	The entry doorway is to achieve a clear width of no less than 750mm.
Door Hardware	+ Shall be provided with an in-use indicator and a bolt or catch. + Where a snip catch is used, the snib-handle shall have a minimum length of 45mm from the centre of the spindle. + In an emergency, the latch mechanism shall be openable from the outside.
Internal Dimensions	Width between internal walls is to achieve between 900 – 920mm. A 900x900 clear area must be provided in front of the toilet pan, fixtures (including door swing) cannot encroach on this distance, except for grab rails. 
Grab Rails	Grab rails are to be located on either side of the toilet pan and must be located between 800 – 810mm above finished floor level. + Grab rail length and up-turn to be in accordance with Figure 53(A) of AS 1428.1 – 2009. + Grab rails shall have an outside diameter of 30 – 40mm. + Exposed edges and corners of grab rails shall have a radius of not less than 5mm. + The fastenings and the materials and construction of grab rails shall be able to withstand a force of 1100 N applied at any position. + Clearance between the grab rail and the adjacent wall shall be between 50 – 60mm. 
Toilet Roll Holder	The position of the toilet roll holder is to be in accordance with code requirements
Coat Hook	A coat hook shall be provided within the sanitary compartment at a height between 1350mm to 1500mm from the floor.
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 latch-side wall. Signage content is to comply with the requirements of Clause 8 of AS 1428.1 – 2009.

F2.5 Construction of Sanitary Compartments	Other than in an early childhood centre, sanitary compartments must have doors and partitions that separate adjacent compartments and extend – + from floor level to the ceiling in the case of a unisex facility; or + a height of not less than 1.5m above the floor if primary school children are the principal users; or + 1.8m above the floor in all other cases.	**Compliance Readily Achievable**: Details to be included into the design.

	The door to a fully enclosed sanitary compartment must open outwards; or slide: or be readily removable from the outside of the sanitary compartment, unless there is a clear space of at least 1.2m, measured in accordance with Figure F2.5 between the closet pan within the sanitary compartment and the doorway.	
F2.6 Interpretation: Urinals and Wash Basins	A urinal may be an individual stall or wall-hung urinal, each 600mm length of a continuous urinal trough or a closet pan used in place of a urinal. A washbasin may be an individual basin or a part of a hand washing trough served by a single water tap A urinal may be, a closet pan used in place of a urinal.	**Note.**
Part F3	***Room Sizes***	
F3.1 Height of Rooms and Other Spaces.	The ceiling heights are prescribed and should be checked for all classes and parts during assessment or the design process. The minimum ceiling heights in a Class 5 / 6 / 7 / 8 building are as follows: + Generally - 2.4m. + Corridor, passageways, or the like - 2.1m. The minimum ceiling heights in a Class 9b building are as follows: + School classroom, or other assembly building or part accommodating not more than 100 persons - 2.4m. + Theatre, public hall, or other assembly building or part accommodating more than 100 persons - 2.7m.	**Further Information Required:** Ceiling Plans are to be submitted for review
Part F4	***Light & Ventilation***	
F4.1 Natural Lighting	Natural lighting must be provided in: + Class 9b – General purpose classrooms	**Compliance Readily Achievable**: Details to be included into the design. *Note: As advised by the client, the shared learning spaces in corridors are multi-propose/collaboration area areas that will not hold full time classes, as such are not considered general purpose classrooms for purposes of natural light and ventilation.*
F4.2/F4.3 Method and Extent of Achieving Natural Lighting	Windows or the like are to have an aggregate light transmitting area of not less than 10% of the floor area of the room.	**Compliance Readily Achievable**: Details to be included into the design.
F4.4 Artificial Lighting	Artificial lighting must be provided in required stairways, passageways, and ramps and where natural light is insufficient. The artificial lighting system must comply with AS/NZS 1680.0. Windows or the like are to have an aggregate light transmitting area of not less than 10% of the floor area of the room. Artificial lighting must be provided where occupants seeking egress in an emergency, in— + Class 3, 5, 6, 7, 8 and 9 buildings — to all rooms that are frequently occupied, all spaces required to be accessible, all corridors, lobbies, internal stairways, other circulation spaces and paths of egress. The system may provide a lesser level of illumination to the following spaces during times when the level of lighting would be inappropriate for the use: + A theatre, cinema or the like, when performances are in progress, with the exception of aisle lighting required by Part H1. + A museum, gallery or the like, where sensitive displays require low lighting levels. + A discotheque, nightclub or the like, where to create an ambience and character for the space, low lighting levels are used.	**Compliance Readily Achievable**: Details to be included into the design.

F4.5 Ventilation of Rooms	A habitable room, office, shop, factory, workroom, sanitary compartment, bathroom, shower room, laundry and any other room occupied by a person for any purpose must have natural ventilation complying with F4.6 **or** a mechanical or air-conditioning system complying with AS1668.2 and AS/NZS 3666.1. Note: NSW F4.5(b) a mechanical ventilation or air-conditioning system complying with AS 1668.2 – the reference to AS/NZS 2666.1 is deleted from the BCA in NSW as the need to comply with this standard is regulated under the relevant section of the Public Health Act 1991.	**Compliance Readily Achievable**: Design statement to be provided at S6.28 BCA Crown Certificate stage.
F4.6 Natural Ventilation	Natural ventilation must consist of openings, windows, doors or other devices which can be opened— with a ventilating area not less than 5% of the floor area of the room required to be ventilated. Additionally, open to a suitably sized space open to the sky or an adjoining room in accordance with F4.7.	**Compliance Readily Achievable**: Design statement to be provided at S6.28 BCA Crown Certificate stage.
F4.7 Ventilation Borrowed From Adjoining Rooms	Natural ventilation to a room may come through a window, opening ventilating door or other device from an adjoining room (including an enclosed verandah) if both rooms are within a sole-occupancy unit or the enclosed verandah is common property and be carried out in accordance with the requirements of sub-clauses (a), (b) & (c).	**Note.**
F4.8 Restriction on Position of Water Closets and Urinals	A room containing a water closet pan or urinal must not open directly into a kitchen or pantry, public dining room or restaurant, a dormitory in a Class 3 building, a room used for public assembly (which is not an early childhood centre, primary school or open spectator stand) or a workplace normally occupied by more than 1 person.	**Compliance Readily Achievable**: Details to be included into the design.
F4.9 Airlocks	If a room containing a closet pan or urinal is prohibited under F4.8 form opening directly into another room then the provisions of sub-clauses (a) & (b) apply relating to the requirements of airlocks and mechanical ventilation standards.	**Compliance Readily Achievable**: Details to be included into the design.
F4.12 Kitchen Local Exhaust Ventilation	A commercial kitchen must be provided with a kitchen exhaust hood complying with AS 1668.1 and 1668.2.	**Compliance Readily Achievable**: Design statement to be provided at S6.28 BCA Crown Certificate stage.
SECTION G	**ANCILLARY PROVISIONS**	
NSW G1.101 Provision for Cleaning of Windows	A building must provide for a safe manner of cleaning any windows located 3 or more storeys above ground level. A building satisfies this requirement where the windows can be cleaned wholly from within the building; or provision is made for the cleaning of the windows by a method complying with the Work Health and Safety Act 2011 and regulations made under that Act.	**Compliance Readily Achievable**: Details to be included into the design.
Part G6	***Occupiable Outdoor Areas***	
G6.1 Application of Part	The Deemed-to-Satisfy Provisions of this Part apply to buildings containing an occupiable outdoor area in addition to the other Deemed-to-Satisfy Provisions of the BCA. The Deemed-to-Satisfy Provisions of this Part take precedence where there is a difference to the Deemed-to-Satisfy Provisions of Sections C, D, E, F and G. Except for G6.2, the Deemed-to-Satisfy Provisions of this Part do not apply to— + an occupiable outdoor area of a sole-occupancy unit in a Class 2 or 3 building, Class 9c building or Class 4part of a building; or + an occupiable outdoor area with an area less than 10m^2.	**Compliance Readily Achievable**: Details to be included into the design.
G6.2 Fire Hazard Properties	Subject to (b), a lining, material or assembly in an occupiable outdoor area must comply with C1.10 as for an internal element.	**Compliance Readily Achievable**: Details to be included into the design.

	(b) The following fire hazard properties of a lining, material or assembly in an occupiable outdoor area are not required to comply with C1.10: + Average specific extinction area. + Smoke-Developed Index. + Smoke development rate + Smoke growth rate index	
G6.3 Fire Separation	For the purposes of the Deemed-to-Satisfy Provisions of C2.7, C2.8 and C2.9, a reference to a storey includes an occupiable outdoor area, however a fire wall cannot be used to separate an occupiable outdoor area into different fire compartments.	**Compliance Readily Achievable:** Detail to be included in the design.
G6.4 Provision of Escape	For the purposes of the Deemed-to-Satisfy Provisions of Part D1, a reference to a storey or room includes an occupiable outdoor area.	**Compliance Readily Achievable:** Detail to be included in the design.
G6.5 Construction of Exits	For the purposes of the Deemed-to-Satisfy Provisions of Part D2, a reference to a storey or room includes an occupiable outdoor area.	**Compliance Readily Achievable:** Detail to be included in the design.
G6.6 Fire Fighting Equipment	Except for Clause 7(b)(i) of Specification E1.5, for the purposes of the Deemed-to-Satisfy Provisions of Part E1, a reference to a storey includes an occupiable outdoor area.	**Compliance Readily Achievable:** Detail to be included in the design.
G6.7 Lift Installations	For the purposes of the Deemed-to-Satisfy Provisions of Part E3, a reference to a storey includes an occupiable outdoor area.	**Compliance Readily Achievable:** Detail to be included in the design.
G6.8 Visibility in an Emergency, Exit Signs, and Warning Signs	For the purposes of the Deemed-to-Satisfy Provisions of Part E4, a reference to a storey includes an occupiable outdoor area.	**Compliance Readily Achievable:** Detail to be included in the design. Ensure exit and emergency lighting comply within occupiable outdoor areas as if they were internal areas.
G6.9 Light and Ventilation	For the purposes of the Deemed-to-Satisfy Provisions of F4.4, F4.8 and F4.9, a reference to a room includes an occupiable outdoor area.	**Compliance Readily Achievable:** Detail to be included in the design.
SECTION H	**SPECIAL USE BUILDINGS**	
Part H1	***Class 9b Buildings – Theatres, Stages and Public Halls***	
H1.1 Application of Part	The Deemed-to-Satisfy Provisions of this Part apply to every Class 9b building or part of a building which is a school assembly, church or community hall with a stage and any backstage area with a total floor area of more than 300m^2 or a stage/backstage in any other building with a total floor area of more than 200m^2 or any other stage with an associated rigging loft. Parts H1.4 applies to all Class 9b buildings & H1.7 applies to all enclosed Class 9b buildings.	**Not Applicable:** We understand that the school is not proposed to have a stage. If a stage is proposed, details to be included for further assessment.
SECTION J	**ENERGY EFFICIENCY**	
JV3	Verification using referenced building	**Compliance Readily Achievable**: We understand that a JV3 report may be provided to achieve compliance in accordance with Section J.
J1 Building Fabric	The provision of insulation of the building envelope will be required in the proposed building, in accordance with Clauses J1.0 to J1.6, and the Tables therein, including Thermal Construction General, Roof and Ceiling Construction, Rooflights, Walls, Glazing and Floors. Design details and/or certification of design will be required to be provided in this regard.	**Compliance Readily Achievable**: Design statement and Section J Report to be provided at S6.28 BCA Crown Certificate stage.
J3 Building Sealing	The proposed building envelope will be required to be sealed to prevent air infiltration in accordance with the requirements of Clauses J3.0 to J3.6. Details or	**Compliance Readily Achievable**:

	certification that the proposed building design complies with the requirements of Part J3 is required to be provided	Design statement and Section J Report to be provided at S6.28 BCA Crown Certificate stage.
J4 Air Movement	Details and/or design certification which confirm that air movement within the proposed building achieves compliance with the relevant requirements of Clauses J4.0 to J4 4 and the Table therein will be required to be provided from the mechanical engineer.	**Compliance Readily Achievable**: Design statement and Section J Report to be provided at S6.28 BCA Crown Certificate stage.
J5 Air-Conditioning & Ventilation Systems	Details and/or design certification which confirm that any proposed air-conditioning system or unit within the proposed building achieves compliance with the relevant requirements of Part J5 will be required to be provided from the mechanical engineer.	**Compliance Readily Achievable**: Design statement and Section J Report to be provided at S6.28 BCA Crown Certificate stage.
J6 Artificial Lighting & Power	Details and/or design certification which confirm that all artificial lighting, power control, and boiling/chilled water units within the proposed building achieves compliance with the relevant requirements of Part J6 will be required to be provided from the electrical engineer	**Compliance Readily Achievable**: Design statement and Section J Report to be provided at S6.28 BCA Crown Certificate stage.
J7 Hot Water Supply & Swimming Pool & Spa Pool Plant	Details and/or design certification which confirm that any proposed hot water supply system within the proposed building achieves compliance with the relevant requirements of Part J7 (Section 8 of AS 3500.4) will be required to be provided from the hydraulic engineer	**Compliance Readily Achievable**: Design statement and Section J Report to be provided at S6.28 BCA Crown Certificate stage.
J8 Access for Maintenance & Facilities for Monitoring	See NSW Subsection J8 for access to maintenance. Access must be provided to all plant, equipment and components that require maintenance in accordance with Part I2.	**Compliance Readily Achievable**: Design statement and Section J Report to be provided at S6.28 BCA Crown Certificate stage.

APPENDIX 2- FIRE SAFETY SCHEDULE

The following table is a list of the required fire safety measures within the building. These measures may be subject to further change pending the outcomes of the final Fire Safety Engineering Review to confirm the works are permissible and do not contradict the base building Performance Solutions.

Statutory Fire Safety Measure	Design / Installation Standard
Automatic Fail-Safe Devices	BCA Clause D2.21
Automatic Fire Detection & Alarm System	BCA Spec. E2.2a & BCA Spec E2.2a AS 1670.1 – 2018
Emergency Lighting	BCA Clause E4.2 & E4.4 AS 2293.1 – 2018
Emergency Evacuation Plan	AS 3745 - 2010
Exit Signs	BCA Clauses E4.5, NSW E4.6 & E4.8 AS 2293.1 – 2018
Fire Blankets	AS 3504 – 1995 & AS2444 – 2001
Fire Doors	BCA Clause C2.12, C2.13, C3.4, C3.5 AS 1905.1 – 2015 and Manufacturer's Specification
Fire Hose Reels	BCA Clause E1.4 AS 2441 – 2005
Fire Hydrant Systems	BCA Clause E1.3 AS 2419.1 – 2005
Fire Seals	BCA Clause C3.15, AS 1530.4 – 2014 & AS 4072.1 – 2014 and Manufacturer's Specification
Lightweight Construction	BCA Clause C1.8 AS 1530.4 – 2014 and Manufacturer's Specification
Mechanical Air Handling Systems (Automatic Shutdown)	BCA Clause E2.2, NSW E2.2a AS/NZS 1668.1 – 2015 & AS 1668.2 – 2012
Paths of Travel	EP&A Regulation Clause 186
Portable Fire Extinguishers	BCA Clause E1.6 AS 2444 – 2001
Warning & Operational Signs	BCA Clause E3.3 AS 1905.1 – 2015 & Section 183 of the EP&A Regulation 2000
Fire Engineered Performance Solutions TBC	BCA Performance Requirements … Fire Safety Engineering Report prepared by …… Report No. …. Revision …. dated …..

APPENDIX 3- FRL OF BUILDING ELEMENTS – TYPE B CONSTRUCTION

Building element	Class of building—FRL: (in minutes) *Structural adequacy/Integrity/Insulation*			
	2, 3 or 4 part	**5, 7a or 9**	**6**	**7b or 8**
EXTERNAL WALL (including any column and other building element incorporated within it) or other external building element, where the distance from any *fire-source feature* to which it is exposed is—				
For *loadbearing* parts—				
less than 1.5 m	90/90/ 90	120/120/120	180/180/180	240/240/240
1.5 to less than 3 m	90/60/ 30	120/ 90/ 60	180/120/ 90	240/180/120
3 to less than 9 m	90/30/ 30	120/30/ 30	180/90/ 60	240/ 90/ 60
9 to less than 18 m	90/30/–	120/30/–	180/ 60/–	240/ 60/–
18 m or more	–/–/–	–/–/–	–/–/–	–/–/–
For non-*loadbearing* parts—				
less than 1.5 m	–/ 90/ 90	–/120/120	–/180/180	–/240/240
1.5 to less than 3 m	–/ 60/ 30	–/ 90/ 60	–/120/ 90	–/180/120
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–
EXTERNAL COLUMN not incorporated in an *external wall*, where the distance from any *fire-source feature* to which it is exposed is—				
For *loadbearing* columns—				
less than 18 m	90/–/–	120/–/–	180/–/–	240/–/–
18 m or more	–/–/–	–/–/–	–/–/–	–/–/–
For non-*loadbearing* columns—	–/–/–	–/–/–	–/–/–	–/–/–
COMMON WALLS and FIRE WALLS—	90/90/90	120/120/120	180/180/180	240/240/240
INTERNAL WALLS—				
Fire-resisting lift and stair *shafts*—				
Loadbearing	90/ 90/ 90	120/120/120	180/120/120	240/120/120
Fire-resisting stair *shafts*—				
Non-*loadbearing*	–/ 90/ 90	–/120/120	–/120/120	–/120/120
Bounding *public corridors*, public lobbies and the like—				
Loadbearing	60/ 60/ 60	120/–/–	180/–/–	240/–/–
Non-*loadbearing*	–/ 60/ 60	–/–/–	–/–/–	–/–/–
Between or bounding *sole-occupancy units*—				
Loadbearing	60/ 60/ 60	120/–/–	180/–/–	240/–/–
Non-*loadbearing*	–/ 60/ 60	–/–/–	–/–/–	–/–/–
OTHER LOADBEARING INTERNAL WALLS and COLUMNS—	60/–/–	120/–/–	180/–/–	240/–/–
ROOFS	–/–/–	–/–/–	–/–/–	–/–/–

Notes:

1. Any wall required to have an FRL with respect to integrity and insulation must extend to the underside of the floor next above if that floor has an FRL of at least 30/30/30; or the underside of a ceiling with a resistance to the incipient spread of fire to the space above itself of not less than 60 minutes; or the underside of a non-combustible roof covering; or 400mm above the roof covering if it is combustible.
2. The method of attaching or installing a finish, lining, ancillary element, or service installation to a building must not reduce the fire-resistance of that element to below that required.
3. All elements of an external wall assembly (except those allowed under Clause C1.9) must be non-combustible. This includes, framing, integral formwork, insulation, sarking, façade coverings, and the like. Any departures from this will require consideration under CV3 or potentially, a fire engineered performance solution.

4. A loadbearing internal wall and a loadbearing fire wall must be constructed from concrete, masonry, or a combination of the two.
5. In the storey immediately below the roof, internal columns and internal walls other than fire walls and shaft walls need not comply with Table 4.
6. Any lightweight construction in a fire wall or an internal wall required to have an FRL is to comply with Specification C1.8.
7. Non-loadbearing parts of an external wall that are more than 18m from a fire source feature need not be fire rated.

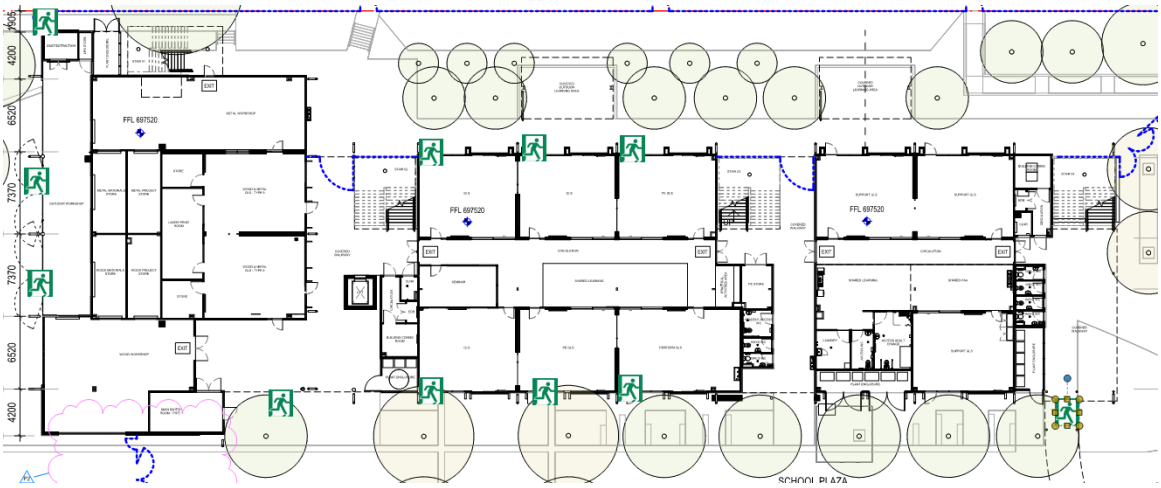
TYPE C – CONSTRUCTION

Building element	Class of building—FRL: (in minutes) *Structural adequacy / Integrity / Insulation*			
	2, 3 or 4 part	**5, 7a or 9**	**6**	**7b or 8**
EXTERNAL WALL (including any column and other building element incorporated within it) or other external building element, where the distance from any *fire-source feature* to which it is exposed is—				
Less than 1.5 m	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90
1.5 to less than 3 m	–/–/–	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–
EXTERNAL COLUMN not incorporated in an *external wall*, where the distance from any *fire-source feature* to which it is exposed is—				
Less than 1.5 m	90/–/–	90/–/–	90/–/–	90/–/–
1.5 to less than 3 m	–/–/–	60/–/–	60/–/–	60/–/–
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–
COMMON WALLS and FIRE WALLS—	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90
INTERNAL WALLS—				
Bounding *public corridors*, public lobbies and the like—	60/60/ 60	–/–/–	–/–/–	–/–/–
Between or bounding *sole-occupancy units*—	60/60/ 60	–/–/–	–/–/–	–/–/–
Bounding a stair if *required* to be rated—	60/60/ 60	60/60/60	60/ 60/ 60	60/ 60/ 60
ROOFS	–/–/–	–/–/–	–/–/–	–/–/–

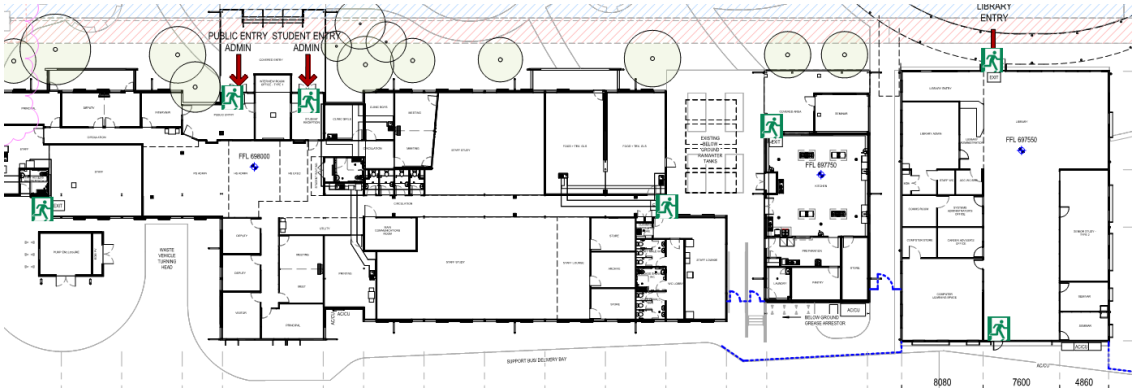
Notes:

1. New external walls that are located 1.5m or more from an allotment boundary / fire source feature require no FRL's.
2. An external wall required to have an FRL is only required from the outside.
3. Any lightweight construction in a fire wall or an internal wall required to have an FRL is to comply with Specification C1.8.
4. Any insulation installed in the cavity of the wall is required to be non-combustible.
5. The method of attaching or installing a finish, lining, ancillary element, or service installation to a building must not reduce the fire-resistance of that element to below that required.
6. Any internal loadbearing wall or column is required to achieve an FRL of not less than 90/90/90.
7. The floor separating the two storeys is required to achieve an FRL of not less than 90/90/90 to achieve separate fire compartments.
8. No structural elements are permitted to pass through fire-rated walls.
9. Fire rated shafts are required to be enclosed at the top and bottom by construction having an FRL of not less than what the shaft requires.

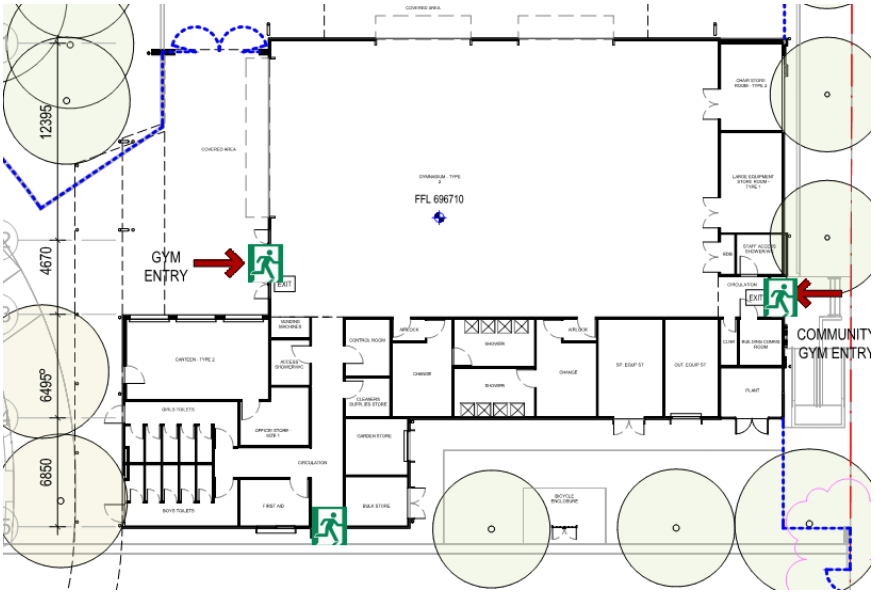
APPEXDIX 4 – PLAN OF EXIT LOCATIONS



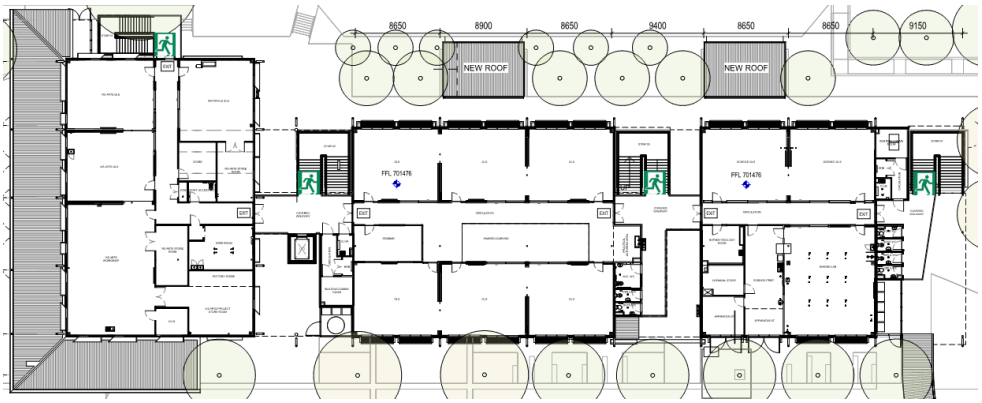
Building AB Ground Floor



Building C and E Ground Floor



Building D Ground Floor



Building AB Level One