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NCC (BCA) & Access Assessment
SSDA Stage

TWEED VALLEY HOSPITAL

Prepared for:



Health
Infrastructure

Revision 3

Date: 19 September 2019

Project No.: 180362





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REVISION STATUS				
Revision	Date	Status	Prepared By	Reviewed By
1	19.08.2019	SSDA submission	JH	DB
2	10.09.2019	SSDA submission	JH	DB
3	19.09.2019	Final SSDA submission	JH	DB

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A. INTRODUCTION

A.1 BACKGROUND / PROPOSAL

On the 11 June 2019 the Minister for Planning and Public Spaces granted approval for the Concept Proposal and Stage 1 Early and Enabling Works for the new Tweed Valley Hospital (SSD 9575) located at 771 Cudgen Road, Cudgen (Lot 11 DP1246853). All documents relating to this consent can be found on the major project website of DPIE at <https://www.planningportal.nsw.gov.au/major-projects/project/10756>.

The Environmental Impact Statement (EIS) has been prepared to assist in the State Significant Development (SSD) Stage 2 Application for the Tweed Valley Hospital which will be assessed under Part 4 Division 4.7 of the Environmental Planning and Assessment Act 1979 (EP&A Act). This, along with supporting documentation, provides a clear outline of the Stage 2 Application.

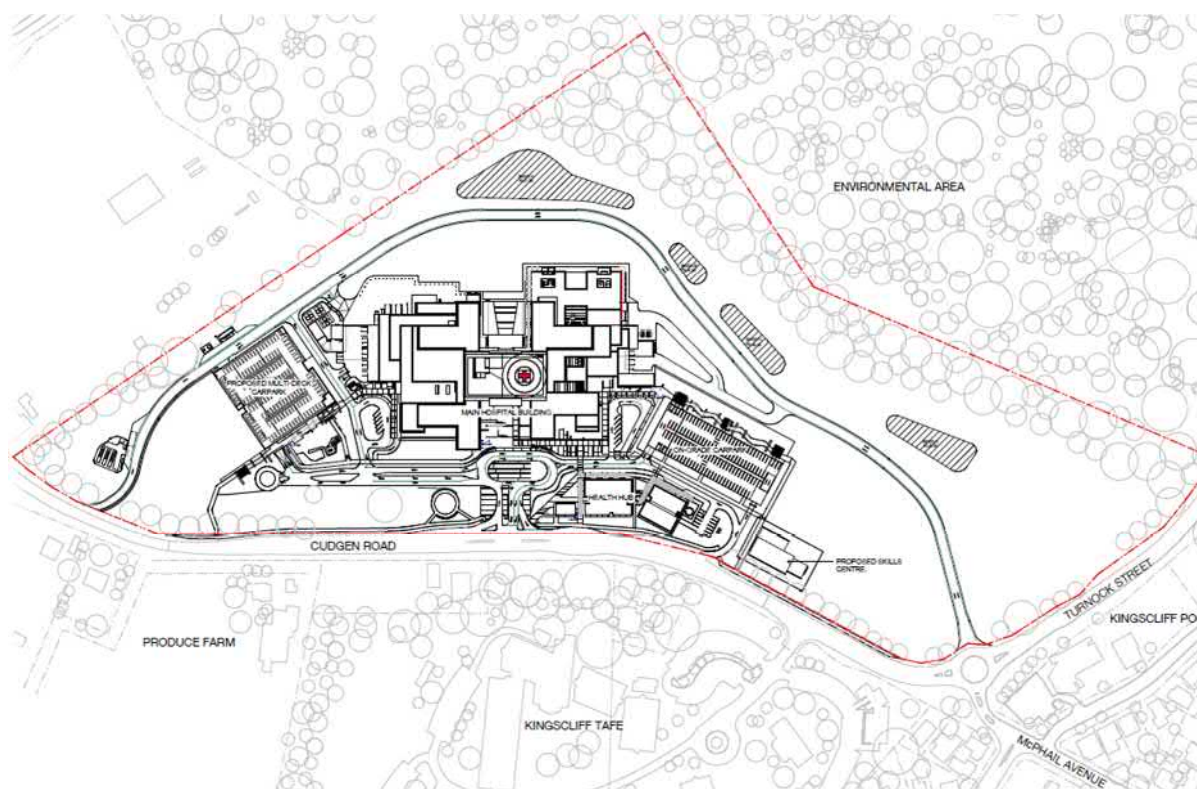


Figure 1: Site Plan



The Tweed Valley Hospital Project broadly consists of:

- + Construction of a new Level 5 major regional referral hospital to provide the health services required to meet the needs of the growing population of the Tweed-Byron region (in conjunction with the other hospitals and community health facilities across the region);
- + Delivery of the supporting infrastructure required for the Tweed Valley Hospital, including green space and other amenities, roads and car parking, external road upgrades and connections, utilities connections, and other supporting infrastructure.

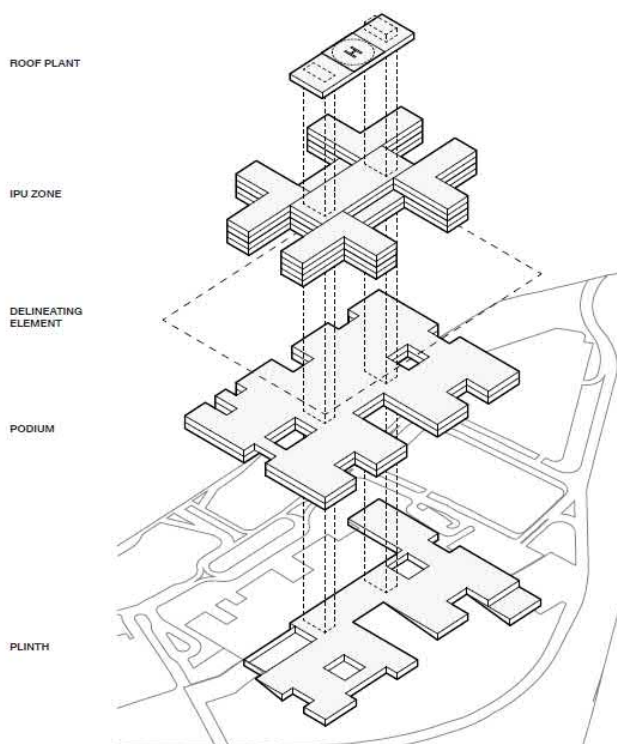
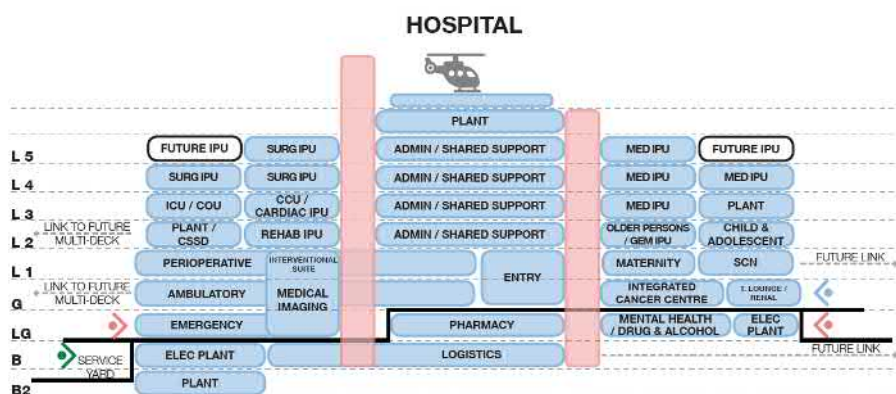
The Stage 2 SSD component seeks consent for the Main Works and Operation of the Tweed Valley Hospital, including:

- **Construction of Main Hospital Building**

- + Main entry and retail area
- + Administration
- + Community health
- + In-Patient units
- + Outpatient clinics and day only units
- + Child and Adolescent Services
- + Intensive Care Unit
- + Mental Health Unit
- + Maternity Unit and Birthing Suites
- + Renal Dialysis
- + Pathology
- + Pharmacy
- + Radiation Oncology as part of integrated Cancer Care
- + Emergency Department
- + Perioperative Services
- + Interventional Cardiology
- + Medical Imaging
- + Mortuary
- + Education, Training, Research
- + Back of House services
- + Rooftop Helipad

- **Construction of Support Buildings, referred to as the 'Health Hub', containing:**

- + Oral Health
- + Community Health
- + Aboriginal Health
- + Administration
- + Education, Training and Research
- Internal Roads and carparking, including multi-deck parking for staff, patients and visitors;
- Construction of a temporary building for the 'Tweed Valley Skills Centre'
- External road infrastructure upgrades and main site access
- Environmental and wetland rehabilitation, including rehabilitation of existing farm dam as outlined in the Biodiversity Development Assessment Report (BDAR) prepared for the Concept Proposal and Stage 1 works
- Site landscaping
- Signage
- Utility and service works





A.2 AIM

The aim of this report is to:

- + Confirm that the referenced SSDA has been reviewed by an appropriately qualified Accredited Certifier.
- + Outline the BCA Compliance Strategy for the building and certification pathway for the project.
- + Identify BCA and Accessibility compliance matters that require further resolution.
- + Identify potential matters that are to be required to be addressed by Performance Solutions prior to issue of the S6.28 Crown Certificate.
- + Enable the certifying authority to satisfy its statutory obligations under Section 6.28 of the Environmental Planning and Assessment Act, 1979.
- + Identify the relevant essential fire safety measures that are applicable to the proposed development.

A.3 PROJECT TEAM

The following BM+G team members have contributed to this report:

- + David Blackett (Director)
- + Michael Potts (Senior Building Surveyor)
- + Jake Hofner (Senior Building Surveyor)

A.4 DOCUMENTATION

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

- + Building Code of Australia 2019
- + Guide to the Building Code of Australia 2019
- + Access to Premise Standards 2010
- + SSDA Plans prepared by STH/Bates Smart (see Appendix B of the Environmental Impact Statement (EIS) for plans)

<u>Drawing No.</u>	<u>Revision</u>	<u>Date</u>
AR-STH-AR-DWG-SSD-000	5	06.09.2019
AR-STH-AR-DWG-SSD-001	5	06.09.2019
AR-STH-AR-DWG-SSD-002	5	06.09.2019
AR-STH-AR-DWG-SSD-003	5	06.09.2019
AR-STH-AR-DWG-SSD-004	5	06.09.2019
AR-STH-AR-DWG-SSD-005	5	06.09.2019
AR-STH-AR-DWG-SSD-006	5	06.09.2019
AR-STH-AR-DWG-SSD-007	3	06.09.2019
AR-STH-AR-DWG-SSD-008	3	06.09.2019
AR-STH-AR-DWG-SSD-009	4	06.09.2019
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STB-AR- SKE-HUB-2000001	1	06.09.2019
STB-AR- SKE-HUB-2001001	1	06.09.2019
STB-AR- SKE-HUB-4000001	1	06.09.2019
STB-AR- SKE-HUB-4000002	1	06.09.2019
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STB-AR- SKE-MCP-2003001	1	06.09.2019



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STH-AR-SKE-MHB-20003001	2	06.09.2019
STH-AR-SKE-MHB-20004001	2	06.09.2019
STH-AR-SKE-MHB-20005001	2	06.09.2019
STH-AR-SKE-MHB-20006001	2	06.09.2019
STH-AR-SKE-MHB-20007001	2	06.09.2019
STB-AR-DWG-PSC-1000030	2	05.09.2019
STB-AR-DWG-PSC-2200001	2	05.09.2019
STB-AR-DWG-PSC-2201001	2	05.09.2019
STB-AR-DWG-PSC-3000001	2	05.09.2019
STB-AR-DWG-PSC-5000001	3	05.09.2019
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STB-AR-DWG-MHB-2600001	-	-
STB-AR-DWG-MHB-2601001	-	-
STB-AR-DWG-MHB-2602001	-	-
STB-AR-DWG-MHB-2603001	-	-
STB-AR-DWG-MHB-2604001	-	-
STB-AR-DWG-MHB-2605001	-	-
STB-AR-DWG-MHB-2606001	-	-
STB-AR-DWG-MHB-2607001	-	-

A.5 REGULATORY FRAMEWORK

The proposed building work will be subject to compliance with the relevant requirements of BCA 2019 as required by Section S6.28 of the Environmental Planning & Assessment Act 1979.

Note that the proposed provisions of BCA 2019 in relation to Section J (ESD) will have a transitional period of 12 months, within which time the design can use either current (BCA 2016) or the new (BCA 2019) requirements to comply with Section J.

A.6 LIMITATIONS & EXCLUSIONS

The limitations and exclusions of this report are as follows:

- + The following assessment is based upon a review of the architectural documentation.



- + The Report does not address matters in relation to the following:
 - Local Government Act and Regulations.
 - Occupational Health and Safety (OH&S) Act and Regulations.
 - WorkCover Authority requirements.
 - Water, drainage, gas, telecommunications and electricity supply authority requirements.
- + BM+G Pty Ltd do not guarantee acceptance of this report by Local Council, NSW Fire Brigades or other approval authorities.
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A.7 TERMINOLOGY

Alternative Solution

Means a Performance Solution in accordance with BCA.

Building Code of Australia (BCA)

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 New South Wales (NSW) under the provisions of the EPA Act and Regulation. Building regulatory legislation stipulates that compliance with the BCA Performance Requirements must be attained and hence this reveals BCA's performance based format.

Construction Certificate

Building Approval issued by the Certifying Authority pursuant to Part 4A of the EPA 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.

Climatic Zone

Is an area defined in BCA Figure A1.1 and in Table A1.1 for specific locations, having energy efficiency provisions based on a range of similar climatic characteristics.

Deemed to Satisfy Provisions (DtS)

Provisions 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 the rise in storeys and the floor of the topmost storey (excluding the topmost storey if it contains only heating, ventilating, lift or equipment, water tanks or similar service units).

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 which adjoins 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.

Health-care building - a building whose occupants or patients undergoing medical treatment generally need physical assistance to evacuate the building during an emergency and includes—

- (a) a public or private hospital; or



- (b) a nursing home or similar facility for sick or disabled persons needing full-time care; or
- (c) a clinic, day surgery or procedure unit where the effects of the predominant treatment administered involve patients becoming non-ambulatory and requiring supervised medical care on the premises for some time after the treatment.

National Construction Code Series (NCC)

The NCC was introduced 01 May 2011 by the Council of Australian Governments. The BCA Volume One (Class 2 to 9 Buildings) is now referenced as the National Construction Code Series Volume One — BCA.

Occupation Certificate

Building Occupation Approval issued by the Principal Certifying Authority pursuant to Part 4A of the EPA Act 1979.

Open Space

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 Solution (Alternative Solution)

Means a method of complying with the Performance Requirements other than by a Deemed-to-Satisfy Solution.

Patient care area

A part of a health-care building normally used for the treatment, care, accommodation, recreation, dining and holding of patients including a ward area and treatment area.

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 DtS 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 DtS Provisions; or
- (c) a combination of (a) and (b).

Sole Occupancy Unit (SOU)

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 includes a dwelling.

Treatment area

An area within a patient care area such as an operating theatre and rooms used for recovery, minor procedures, resuscitation, intensive care and coronary care from which a patient may not be readily moved.

Ward area

That part of a patient care area for resident patients and may contain areas for accommodation, sleeping, associated living and nursing facilities.



B. BUILDING CHARACTERISTICS

B.1 SCOPE

Stage 2 scope of works

Stage 2 proposes 545 hospital beds (comprising 48 day, 451 in patient unit (IPU) and 46 emergency beds); inclusive of 56 IPU beds to be constructed subject to demand and funding.

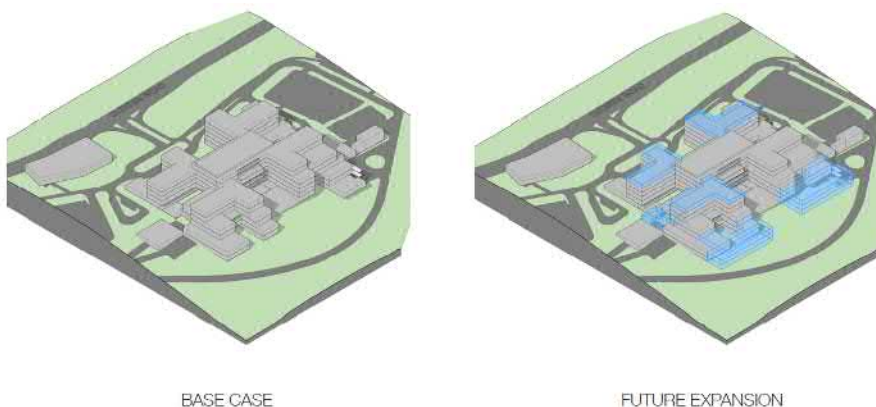
Stage 2 would include the detailed design, construction (also referred to as main works) and operation of the TVH.

This stage is expected to include:

- + Detailed design of the TVH
- + Construction of the TVH
- + Utility and services connection / augmentation works (as required)
- + Internal roadways and car parking for staff, patients and visitors
- + Site works such as landscaping, pathways, public and open spaces etc
- + Hospital operation.

Future Expansion

The masterplan and concept design assumes 2031 service horizon and future expansion to enable operation of the facility as a Level 6 Hospital.



The masterplan also accommodates wider campus planning for a potential health and education precinct that would be delivered with development partners.

B.2 BUILDING CLASSIFICATION

Tweed Valley Hospital – Clinical building

The following table presents a summary of relevant building classification items of the proposed Tweed Valley Hospital:

<p>+ BCA Classification:</p>	<p>Class 9a (Health Care Building) Class 5 (Professional Consulting) Class 5 (Reception/Admin)* Class 6 (Retail)* Class 7b (Storage) Class 8 (Workshop/BOH kitchen laundry)</p>
<p>+ Rise Storeys: in</p>	<p>Rise in storeys of ten (10) Note: In total the RIS of ten (10) includes seven storeys above ground floor level.</p>



	<p>STACKING DIAGRAM TWEED VALLEY HOSPITAL</p>
+ Effective Height:	<p>The building has an effective height of >25m.</p>
+ Importance Level	4
+ Type of Construction:	Type A Construction
+ Climate Zone:	<p>Energy Efficiency Zone 2</p>
+ Maximum Floor Area:	See below



+ Maximum Volume:	See below
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*** Note:** The classifications noted above will need to be confirmed. At this stage it is understood to comprise a mixture of classes where the minor use does not comprise more than 10% the major use will apply. This will be refined during early DD phase.

FLOOR AREA / VOLUME

Maximum size of fire compartment is:

Classification		Type A
6, 7, 8 & 9a (Type A)	Max floor area	2,000m ² for patient care areas 5,000m ² non-patient care
	Max volume	30,000m ³
5 (Type A)	Max floor area	8,000m ²
	Max volume	48,000m ³

* Notes

- Based on a review of the compartmentation plan it is noted that compliance with the maximum limitations set out above is readily achieved. Compartmentation plan will be subject to further review as the design progresses. The location of compartment walls will also be subject to change where egress distances necessitate the relocation of the fire walls and horizontal exits.
- Refer also comments under C2.5 with respect of additional requirements which apply to 9a parts.

Multideck Carpark





The following table presents a summary of relevant building classification items of the proposed Tweed Valley Hospital

+ BCA Classification:	Class 7a (Carpark) Class 6 (Retail – Future TBC)
+ Rise in Storeys:	Rise in storeys of nine (9)
+ Effective Height:	Less than 25m (Upper Lv. 7 RL 42.25 – Upper B2 RL 17.49 = 24.76m)–
+ Importance Level	3
+ Type of Construction:	Type A Construction
+ Climate Zone:	Energy Efficiency Zone 2
+ Maximum Floor Area:	See below
+ Maximum Volume:	See below

*Note** The above effective height will be confirmed during subsequent design stages and BCA reviews to ensure the building remains below 25m in effective height. As noted above, based on the current RL's the building is not greater than 25m in effective height

FLOOR AREA / VOLUME

Maximum size of fire compartment is:

Classification		Type A
6	Max floor area	5,000m ²
	Max volume	30,000m ³

* Notes

The limitations under C2.2. of the BCA do not apply to an open deck carpark or a sprinkler protected carpark. It would be anticipated that further fire separation would be required around a class 6 part to comply with the above. Further review by BM+G will be required accordingly.



Health Hub





The following table presents a summary of relevant building classification items of the proposed Health Hub building

+ BCA Classification:	Class 5 (Professional Consulting) Class 9b (Assembly)
+ Rise in Storeys:	Rise in storeys of two (2) *Note the future LDR expansion will result in both health hub buildings having a RIS of 2
+ Effective Height:	The building has an effective height of <12m.
+ Importance Level	3
+ Type of Construction:	Type B Construction
+ Climate Zone:	Energy Efficiency Zone 2
+ Maximum Floor Area:	See below
+ Maximum Volume:	See below

*** Notes** The above classifications and buildings characteristics is on the basis that the health hub building does not incorporate any space in which patients would be undergoing medical treatment and would require physical assistance to evacuate the building i.e. non ambulatory and requiring supervised medical care after treatments. This will need to be verified early during the DD phase.

FLOOR AREA / VOLUME

Maximum size of fire compartment is:

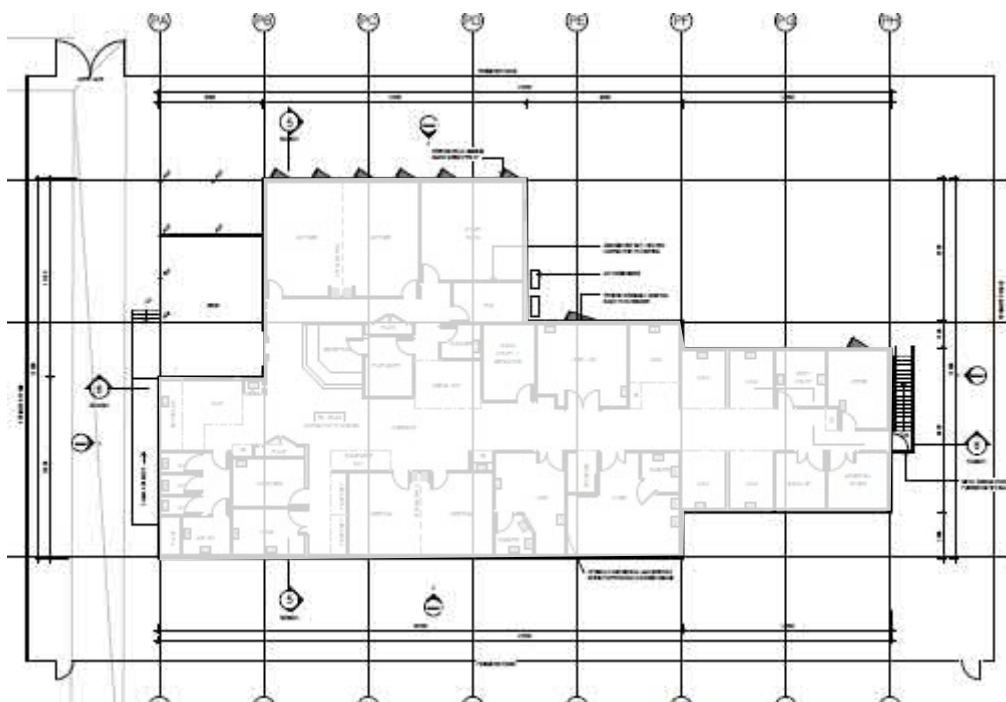
Classification		Type B	Type C
5 & 9b	Max floor area	5,500m ²	3,000m ²
	Max volume	33,000m ³	18,000m ³

*** Notes**

3. Based on a review of the floor plans it is noted that compliance with the maximum limitations set out above is readily achieved.



Skills Centre



The following table presents a summary of relevant building classification items of the proposed Health Hub building

+ BCA Classification:	Class 9b (Education) ⁽¹⁾
+ Rise Storeys: in	Rise in storeys of one (1)
+ Effective Height:	The building has an effective height of less than 12m.
+ Type Construction: of	Type C Construction
+ Climate Zone:	Energy Efficiency Zone 2



+ Maximum Floor Area:	See below
+ Maximum Volume:	See below

FLOOR AREA / VOLUME

Maximum size of fire compartment is:

Classification		Type A
9b (Type c)	Max floor area	3,000m ²
	Max volume	18,000m ³



C. BCA ASSESSMENT

C.1 BCA DEEMED-TO-SATISFY COMPLIANCE ISSUES:

The following comments have been made in relation to the relevant BCA compliance issues associated with the proposed Tweed Valley Hospital.

SECTION B – STRUCTURE

1. Part B1 – Structural Provisions

New building works are to comply with the structural provisions of BCA 2016, Amdt 1 & BCA 2019 including Clauses B1.1, B1.2 & B1.3 and 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 – 2011, Wind loads
- + AS 1170.4 – 2007, Earthquake loads
- + AS 1288 – 2006, Glass in buildings.
- + AS/NZS 1664.1 and 2 – 1997, Aluminium construction
- + AS 1720.1 – 2010, Design of timber structure
- + AS 2159 – 2009, Piling
- + AS 2047 – 2014, Windows in buildings.
- + AS 3600 – 2018, Concrete code
- + AS 3700 – 2018, Masonry code
- + AS 4100 – 1998, Steel Structures and/or
- + AS 4600 – 2018, Cold formed steel
- + AS 5146.1 – 2015, Reinforced autoclaved aerated concrete

Importance Level

The BCA outlines minimum Importance Levels which reflect the values and expectations the community place on specific types of buildings in the event of an earthquake.

It is generally accepted that the structure is expected not to collapse but substantially damaged when this condition is reached. The interpretation of the performance expectations for buildings of different Importance Level in the event of an earthquake are generally as follows:

- + Buildings of Importance Level 1: not expect to survive
- + Buildings of Importance Level 2: expect not to collapse but substantially damaged
- + Buildings of Importance Level 3: expect to survive with some damage
- + **Buildings of Importance Level 4: expect to survive intact and continue to function**

AS1170.0-2002 *Structural design Actions – General Principles* categorises the Importance Levels for different building types as outlined below. Note that the BCA only identifies Importance Levels 1-4, and hence Importance Level 5 is not a mandatory requirement under the National Code.



Importance level	Comment	Examples
1	Structures presenting a low degree of hazard to life and other property	Structures with a total floor area of <30 m ² Farm buildings, isolated structures, towers in rural situations Fences, masts, walls, in-ground swimming pools
2	Normal structures and structures not in other importance levels	Buildings not included in Importance Levels 1, 3 or 4 Single family dwellings Car parking buildings
3	Structures that as a whole may contain people in crowds or contents of high value to the community or pose risks to people in crowds	Buildings and facilities as follows: (a) Where more than 300 people can congregate in one area (b) Day care facilities with a capacity greater than 150 (c) Primary school or secondary school facilities with a capacity greater than 250 (d) Colleges or adult education facilities with a capacity greater than 500 (e) Health care facilities with a capacity of 50 or more resident patients but not having surgery or emergency treatment facilities (f) Airport terminals, principal railway stations with a capacity greater than 250 (g) Correctional institutions (h) Multi-occupancy residential, commercial (including shops), industrial, office and retailing buildings designed to accommodate more than 5000 people and with a gross area greater than 10 000 m ² (i) Public assembly buildings, theatres and cinemas of greater than 1000 m ² Emergency medical and other emergency facilities not designated as post-disaster Power-generating facilities, water treatment and waste water treatment facilities and other public utilities not designated as post-disaster Buildings and facilities not designated as post-disaster containing hazardous materials capable of causing hazardous conditions that do not extend beyond the property boundaries
4	Structures with special post-disaster functions	Buildings and facilities designated as essential facilities Buildings and facilities with special post-disaster function Medical emergency or surgical facilities Emergency service facilities such as fire, police stations and emergency vehicle garages Utilities or emergency supplies or installations required as backup for buildings and facilities of Importance Level 4 Designated emergency shelters, designated emergency centres and ancillary facilities Buildings and facilities containing hazardous materials capable of causing hazardous conditions that extend beyond the property boundaries
5	Special structures (outside the scope of this Standard—acceptable probability of failure to be determined by special study)	Structures that have special functions or whose failure poses catastrophic risk to a large area (e.g. 100 km ²) or a large number of people (e.g., 100 000) Major dams, extreme hazard facilities



It is understood that the Tweed Valley Hospital Structural and Services in-ceiling Services (e.g. fixing of mechanical ducts, electrical cable trays out with 300mm of the soffit, support of mechanical grilles, luminaires, speakers etc. require additional bracing to support the services) will be designed to comply with AS1170 and *HI Design Guidance note 24* of **Importance Level 4 (IL4)**.

Services components in accordance with AS 1170.4, including (not exhaustive list) of services and components listed below will require additional bracing to comply with AS 1170 and *HI Design Guidance note 24* on IL4 and IL2 events.

- + Bracing of Duct work
- + Bracing of containment (cable trays, baskets etc.)
- + Bracing of Pipe work below 300mm of the soffit
- + All in-ceiling services below 300mm allowance to expand and contract in IL events
- + All mechanical grilles to be supported by the soffit
- + All luminaires to be supported by the soffit
- + Mechanical plant to be mounted on plinths with springs
- + Electrical Main switchboard to be fixed to walls with springs
- + Electrical Distribution boards to be fixed to walls with springs

All the Building services installed within the building are to remain serviceable when an IL4 event occurs; however not all services will be operational after an IL4 event. Where an IL2 event occurs the building and installed services will remain serviceable and in full working order e.g. lighting working switching on and off, power working, operating room fully operational with pendants still hanging and all services working e.g. Gases, power and data working.

The structural and services design disciplines will provide design certification at Crown Certification stage to verify this design strategy is in accordance with BCA, AS 1170.4 and *HI Design Guidance note 24*.

With the exception of the tweed hospital building it is understood that the Multideck car park and Health hub building will comprise an **Importance Level 3 (IL3)**



SECTION C – FIRE RESISTANCE

Clause C1.1 – Type of Construction Required (Type A)

Table 3 TYPE A CONSTRUCTION: FRL OF BUILDING ELEMENTS

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



Notes:

1. *Fire ratings to proposed building will need to comply with the requirements above unless otherwise altered in the proposed Fire Engineering Strategy.*
2. *All required FRLs to external walls of the clinical services building applies in both directions (internal and external).*
Note also additional FRL requirements to the external walls that are exposed to the existing hospital and also the external walls that shield any external stairways refer D1.8 below.
3. *Where a combustible material is used as a finish or lining to a wall or roof, or sunscreen, or awning, to a building element required to have an FRL the material must be exempted or complies with the fire hazard properties prescribed under C1.10 and does not otherwise constitute an undue risk of fire spread via the façade of the building.*
We note that there will be zero use of any composite cladding including but not limited to ACP panels used on the external walls of the TVH.
4. *Lift shafts and stair shafts are required to be enclosed at the top of the shaft with fire rated construction having an FRL of 120/120/120.*
5. *Any loadbearing internal walls or loadbearing fire walls are to be masonry or concrete.*
6. *A non-loadbearing wall that is required to be fire resisting must be non-combustible construction.*
7. *Details are to be provided for the method of protecting (fire stopping) gaps at the junction between the floor and any curtain wall (i.e. to maintain fire compartmentation between levels).*
8. *External walls must be non-combustible construction including insulation within the external wall.*
9. *FRL requirements for classifications with higher fire rating (i.e. Class 6) will be subject to FER strategy to rationalise the FRLs consistent with the main building (120/120/120 FRL).*

Non-Combustible Building Elements: 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]) will require approval.

Alternative Solution –

- + The Fire Engineer will need to rationalise providing smoke separation to the slab edge in lieu of fire separation on the basis of the sprinkler system being provided throughout.
- + Reduction in FRL's to class 6 part from 180 to 120min.



Clause C1.1 – Type of Construction Required (Type B)

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 <i>fire-source feature</i> to which it is exposed is—				
For <i>loadbearing</i> 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- <i>loadbearing</i> 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 <i>external wall</i> , where the distance from any <i>fire-source feature</i> to which it is exposed is—				
For <i>loadbearing</i> columns—				
less than 18 m	90/—/—	120/—/—	180/—/—	240/—/—
18 m or more	—/—/—	—/—/—	—/—/—	—/—/—
For non- <i>loadbearing</i> columns—				
For non- <i>loadbearing</i> columns—	—/—/—	—/—/—	—/—/—	—/—/—
COMMON WALLS and FIRE WALLS—	90/ 90 / 90	120/120/120	180/180/180	240/240/240
INTERNAL WALLS—				
<i>Fire-resisting</i> lift and stair <i>shafts</i> —				
<i>Loadbearing</i>	90/ 90/ 90	120/120/120	180/120/120	240/120/120
<i>Fire-resisting</i> stair <i>shafts</i> —				
Non- <i>loadbearing</i>	—/ 90/ 90	—/120/120	—/120/120	—/120/120
Bounding <i>public corridors</i> , public lobbies and the like—				
<i>Loadbearing</i>	60/ 60/ 60	120/—/—	180/—/—	240/—/—
Non- <i>loadbearing</i>	—/ 60/ 60	—/—/—	—/—/—	—/—/—
Between or bounding <i>sole-occupancy units</i> —				
<i>Loadbearing</i>	60/ 60/ 60	120/—/—	180/—/—	240/—/—
Non- <i>loadbearing</i>	—/ 60/ 60	—/—/—	—/—/—	—/—/—
OTHER LOADBEARING INTERNAL WALLS and COLUMNS—	60/—/—	120/—/—	180/—/—	240/—/—
ROOFS	—/—/—	—/—/—	—/—/—	—/—/—

Notes:

1. Fire ratings to proposed building will need to comply with the requirements above unless otherwise altered in the proposed Fire Engineering Strategy.
2. All required FRLs to external walls of the building applies in both directions (internal and external).
3. We note that there will be zero use of any composite cladding including but not limited to ACP panels used on the external walls of the TVH and ancillary buildings
4. Any loadbearing internal walls or loadbearing fire walls are to be masonry or concrete.
5. A non-loadbearing wall that is required to be fire resisting must be non-combustible construction.
6. External walls must be non-combustible construction including insulation within the external wall.
7. Where the proposed building comprises a class 9b use fire separation to the floor must comply with cl. 4.1 (i) of Spec C1.1.

Non-Combustible Building Elements: Documentation is required to be provided as relevant to:

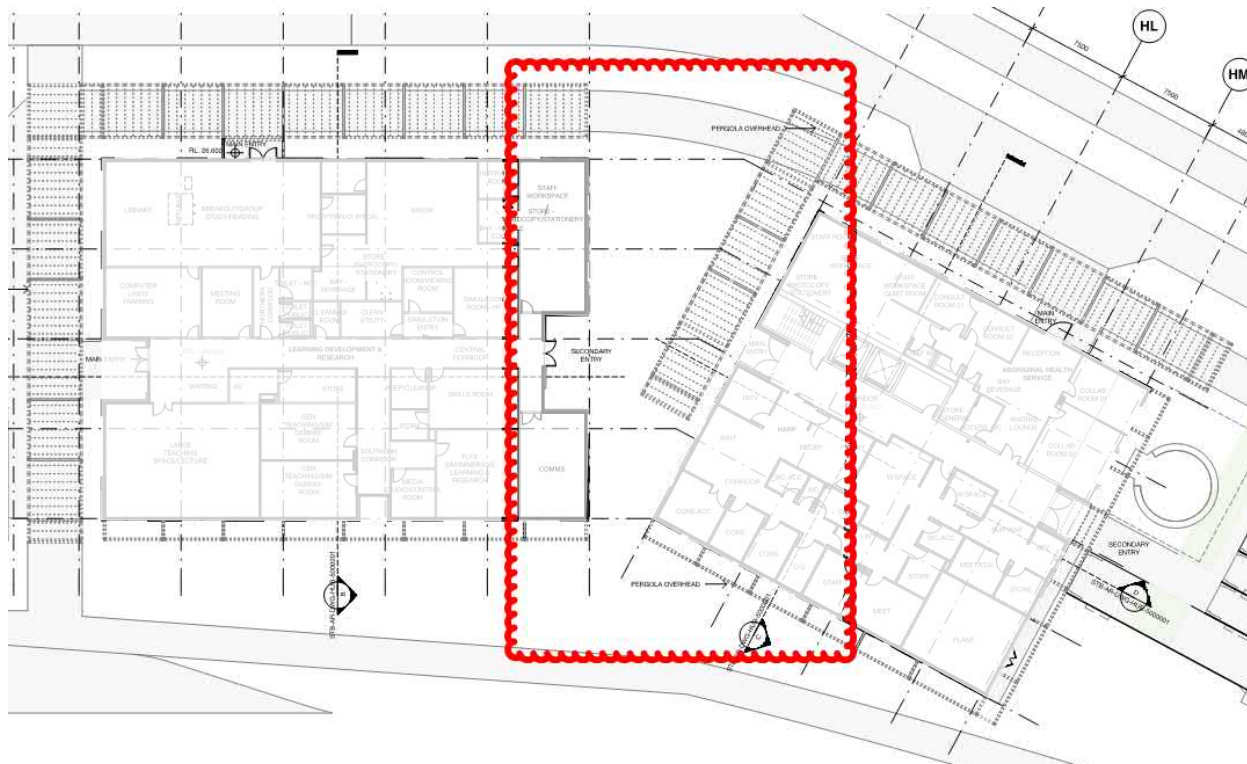
- + Any external wall claddings.
- + Any framing or integral formwork systems. I.e. timber framing, sacrificial formwork, etc.



- + 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]) will require approval.

Confirmation is required with respect of the proposed use and whether it will constitute a 9b classification. The current plans show encroachments on the required 18m setback where the external walls are proposed to be loadbearing to the two storey part. As such, structural engineer will need to verify compliance with Spec C1.1 accordingly. Area of concern is as shown below.



Clause C1.1 – Type of Construction Required (Type C)

Building element	Class of building—FRL: (in minutes)			
	<i>Structural adequacy/Integrity/Insulation</i>			
	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 <i>fire-source feature</i> 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 <i>external wall</i> , where the distance from any <i>fire-source feature</i> 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 <i>public corridors</i> , public lobbies and the like—	60/ 60/ 60	—/—/—	—/—/—	—/—/—
Between or bounding <i>sole-occupancy units</i> —	60/ 60/ 60	—/—/—	—/—/—	—/—/—
Bounding a stair if <i>required</i> to be rated—	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60
ROOFS	—/—/—	—/—/—	—/—/—	—/—/—



2. Clause C1.9 – Non-combustible building elements

In a building of TYPE A or B the following elements and their components are required to be non-combustible.

- + External walls/ Common walls, including all components incorporated in them including the façade covering, framing and insulation
- + Flooring and floor framing of lift pits
- + Non-loadbearing internal walls where they are required to be fire resisting
- + A shaft being a lift, ventilating, pipe, garbage or similar shaft not for the discharge of hot products of combustion, that is non-loadbearing, must be of non-combustible construction in a building of TYPE A construction
- + A loadbearing internal wall and a loadbearing fire wall, including those part of a loadbearing shaft, must comply with Specification C1.1

Note: Concessions available to the above, are noted under (d) and (e) of this clause

The requirements of this clause have been nominated in the figure below. It is noted that no combustible elements will be supported for the project.

Building Element	Type A 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 like shafts which do not discharge hot products of combustion	Non-combustible

Details demonstrating compliance will need to be provided as the design develops accordingly.

A number of aluminium cladding systems are noted in the project. It is unclear what type of cladding systems are proposed at this stage. In this regard, details demonstrating compliance will need to be provided for each respective product as the design develops accordingly.

3. Clause C1.10 – Fire Hazard Properties

The fire hazard properties of all new building materials and assemblies as well as all new floor materials, floor coverings, wall and ceiling lining materials used in the development must comply with the requirements of Specification C1.10 of the BCA.

In accordance with Specification C1.10, we note the following requirements:

Tweed valley hospital clinical building (Sprinklered throughout)

Critical Radiant Flux of Floor Materials and Floor Coverings

- + Patient Care Areas – 2.2 kW/m²
- + Non Patient Care Areas – 1.2 kW/m²
- + Fire Isolated Exits – 4.5 kW/m²

Wall and Ceiling Lining Materials – Group Number

- + Fire Isolated Exit – Group 1
- + Public Corridor – Group 1 or 2
- + Patient Care Areas – Group 1, 2 or 3
- + Other Areas – Group 1, 2 or 3

Material test data sheets will need to be submitted for further assessment to ensure compliance with the above.

Health Hub (Non- Sprinklered)



Class 5 part

- + Floor linings and floor coverings: Critical Radiant Flux (CRF) of not less than 2.2kW/m² and maximum smoke development rate of 750 percent-minutes. For floor coverings which continue more than 150mm up a wall a group number complying with Clause 6(b) is required
- + Wall linings & Ceiling linings: Smoke growth rate index of not more than 100 or average specific extinction area less than 250m²/kg. Material Groups 1, & 2 in Public Corridors, and Material Groups 1, 2 & 3 (walls in Specific Areas and Other Areas. A group number of a wall or ceiling lining and the smoke growth rate index or average specific extinction area must be determined in accordance with AS 5637.1.
- + Air handling ductwork: Rigid & flexible ductwork must comply with the fire hazard properties set out in AS 4254 Parts 1 & 2
- + Lift Cars: Materials used as floor linings and floor coverings must have a CRF of not less than 2.2 and wall and ceiling linings must be a Group 1 or Group 2 material in accordance with AS 5637.1
- + Sarking material: Flammability Index of not more than 5.

Class 9b part

- + Floor linings and floor coverings: Critical Radiant Flux (CRF) of not less than 2.2kW/m² and maximum smoke development rate of 750 percent-minutes. For floor coverings which continue more than 150mm up a wall a group number complying with Clause 6(b) is required
- + Wall linings & Ceiling linings: Material Groups 1 in Public Corridors, and Material Groups 1 & 2 in Specific Areas, Material Groups 1,2 & 3 in Other Areas.
- + Air handling ductwork: Rigid & flexible ductwork must comply with the fire hazard properties set out in AS 4254 Parts 1 & 2
- + Lift Cars: Materials used as floor linings and floor coverings must have a CRF of not less than 2.2 and wall and ceiling linings must be a Group 1 or Group 2 material in accordance with AS 5637.1
- + Sarking material: Flammability Index of not more than 5.

Material test data sheets will need to be submitted for further assessment to ensure compliance with the above.

4. Clause C1.14 – Ancillary building elements

An ancillary element must not be fixed, installed or attached to the internal parts or the external face of an external wall that is required to be non-combustible unless it is one of the items listed under (a)-(m) of this clause. Details of all ancillary elements including test reports and the like will need to be provided at the Crown Certificate stage.

Typical examples of ancillary elements requiring the submission of additional information at Crown Certificate stage is as follows.

- (a) An ancillary element that is non-combustible.
- (b) A gutter, downpipe or other plumbing fixture or fitting.
- (c) A flashing.
- (d) A grate or grille not more than 2 m² in area associated with a building service.
- (e) An electrical switch, socket-outlet, cover plate or the like.
- (f) A light fitting.
- (g) A required sign.
- (h) A sign other than one provided under (a) or (g) that—
- (i) achieves a group number of 1 or 2; and
 - (i)does not extend beyond one storey; and
 - (ii)does not extend beyond one fire compartment; and
 - (iii)is separated vertically from other signs permitted under (h) by at least 2 storeys.
- (j) An awning, sunshade, canopy, blind or shading hood other than one provided under (a) that—
 - (i)meets the relevant requirements of Table 4 of Specification C1.10 as for an internal element; and
 - (ii)serves a storey—
 - at ground level; or
 - immediately above a storey at ground level; and
 - (iii)does not serve an exit, where it would render the exits unusable in a fire.
- (k) A part of a security, intercom or announcement system.
- (l) Wiring.
- (m) A paint, lacquer or a similar finish.
- (n) A gasket, caulking, sealant or adhesive directly associated with (a) to (k).

Architect to note and provide details demonstrating compliance accordingly.



A number of aluminium cladding systems are noted in the project. It is unclear what type of ancillary elements are proposed at this stage. In this regard, details demonstrating compliance will need to be provided for each respective product as the design develops accordingly.

In addition to the cladding systems proposed details with respect of any ancillary element including signage and the like will need to demonstrate compliance with the requirements of this clause.

5. Clause C2.2 – General Floor Area and Volume Limitations

Fire Compartmentation sizes for the non-patient care and patient care areas at each of the levels will be compliant with BCA DTS provisions,

Having regards to the hospital building refer also the comments under C2.5 below with respect of additional requirements applicable to the 9a classification.

Important Note: The central fire compartment which is connected across multiple storeys by the central stairway. Will require additional fire separation as it exceeds the limitations under this clause.

The maximum floor area and volume limitations required under this clause does not apply to open deck car parks.

The health hub building will not comprise a fire compartment greater than the maximum limitations set out under this clause.

6. Clause C2.5 – Class 9a Buildings

Having regards to the class 9a hospital building the following is noted.

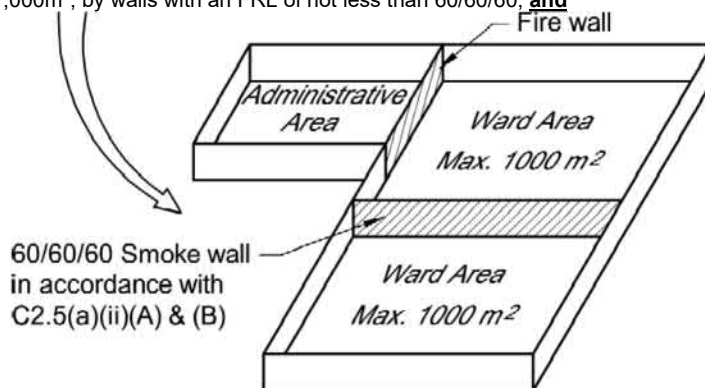
Patient care areas need to be separated into 2000m² fire compartments with fire walls having an FRL of 120/120/120 (FRL to be achieved in both directions).

Further compartmentation within Patient Care Areas is to be as follows:-

Note: All fire walls or fire rated walls within or bounding patient care areas are also required to perform as a smoke wall.

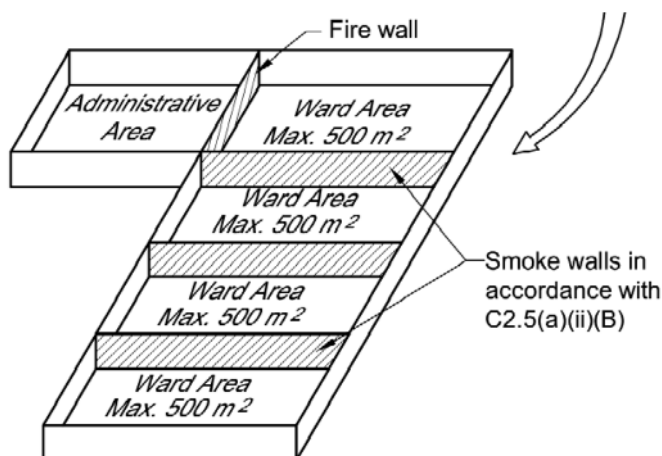
a) In Ward Areas –

- i) Where the floor area exceeds 1,000m², then it must be divided into compartments of not more than 1,000m², by walls with an FRL of not less than 60/60/60, and



- ii) Where the floor area exceeds 500m², then it must be separated into compartments of not more than 500m², by smoke proof walls complying with the requirements of Specification C2.5, and
- iii) Where the floor area is not more than 500m², must be separated from the remainder of patient care areas by smoke proof walls complying with Specification C2.5

Note: Item (iii) relates to situations where ward areas may be located adjacent to treatment areas etc.



b) In Treatment areas

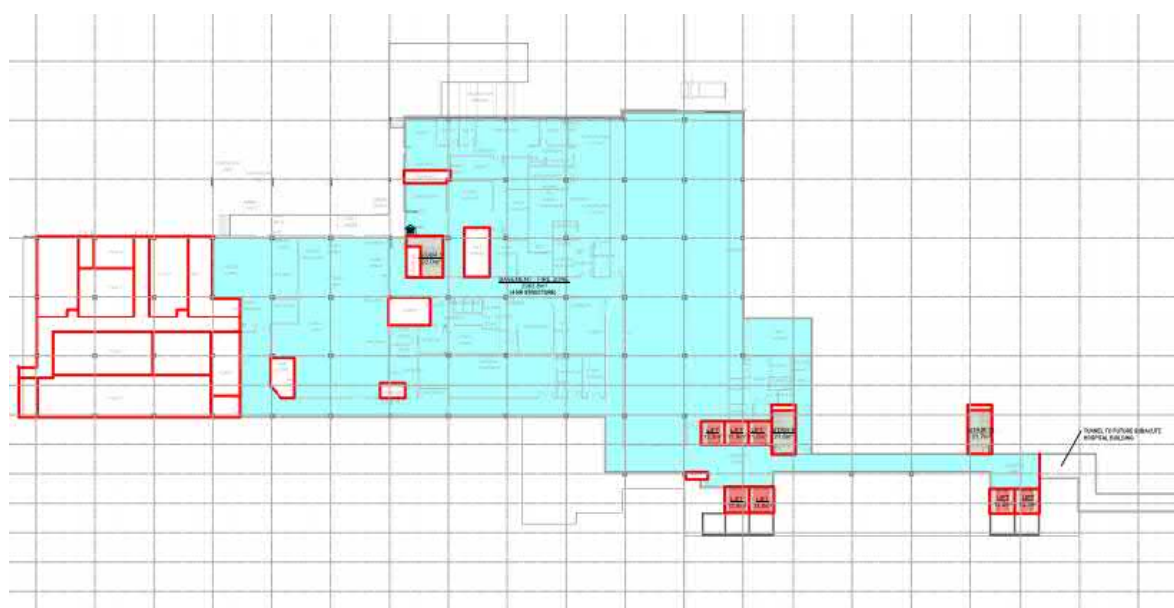
- i) Treatment areas must be divided into compartments of not more than 1,000m², by smoke proof walls complying with Specification C2.5.
- ii) Where the floor area is not more than 1000m², must be separated from the remainder of patient care areas by smoke proof walls complying with Specification C2.5

Note: Item (ii) relates to situations where ward areas may be located adjacent to ward areas etc

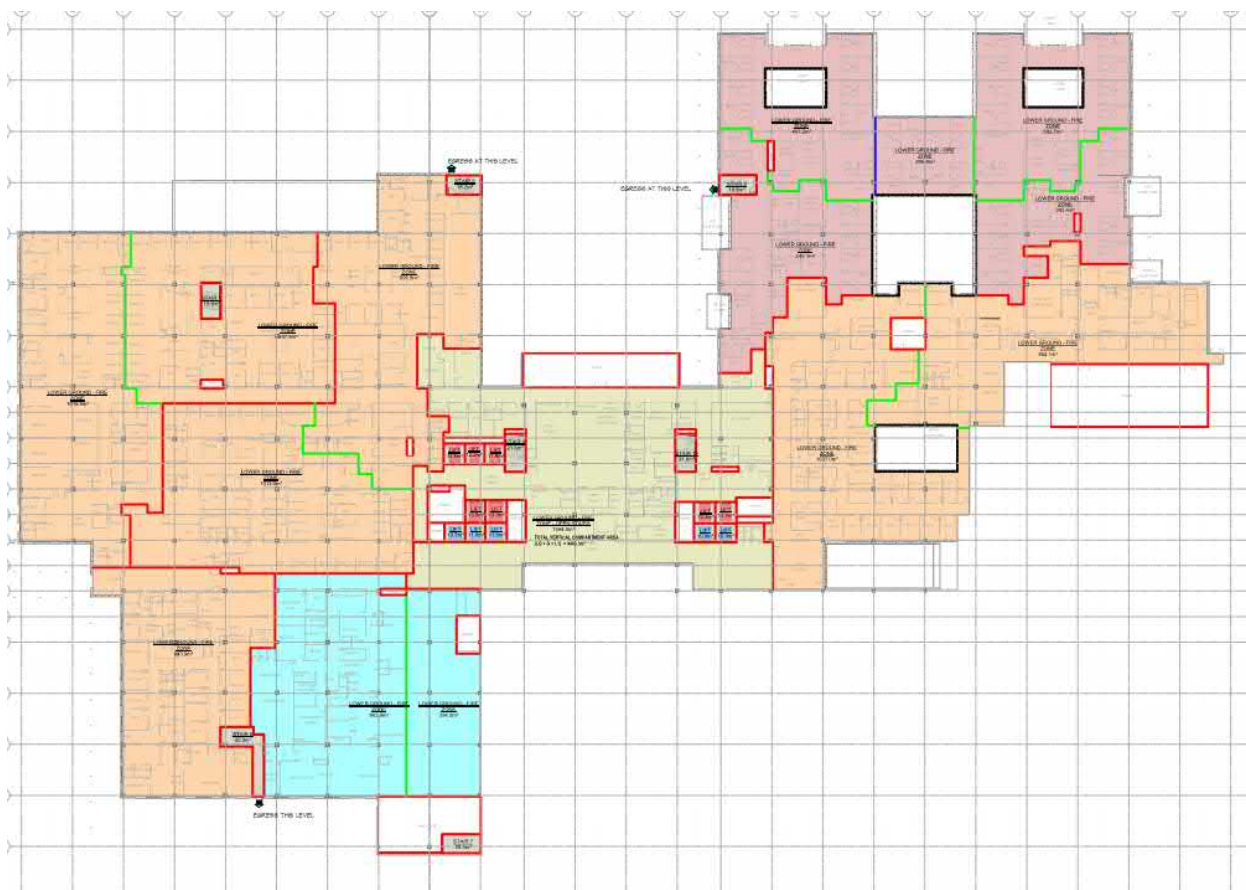
The below compartment layouts nominate possible and indicative location of the fire/smoke walls to regulate compartment sizes and to facilitate egress (via horizontal exits).

These indicative fire/smoke wall locations will require further refinement based on the current compartment sizes and egress travel distances.

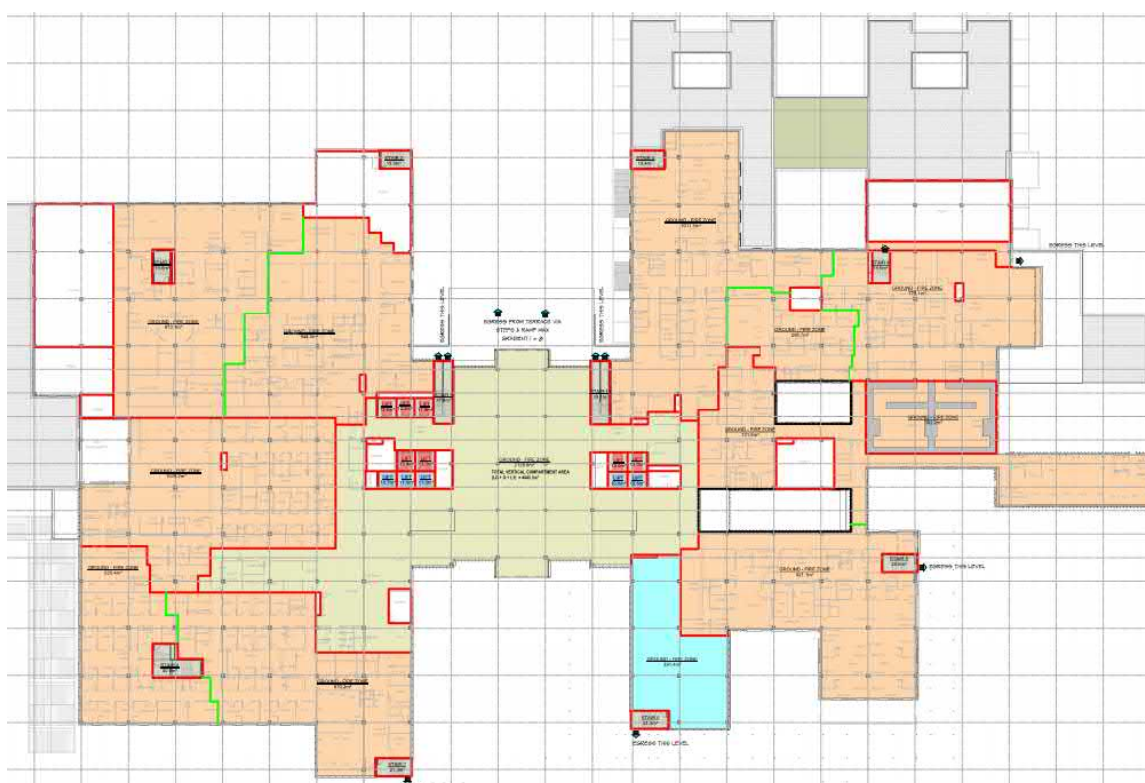
These indicative fire/smoke wall locations will require further refinement based on the current compartment sizes and egress travel distances during the early DD phase.



Basement



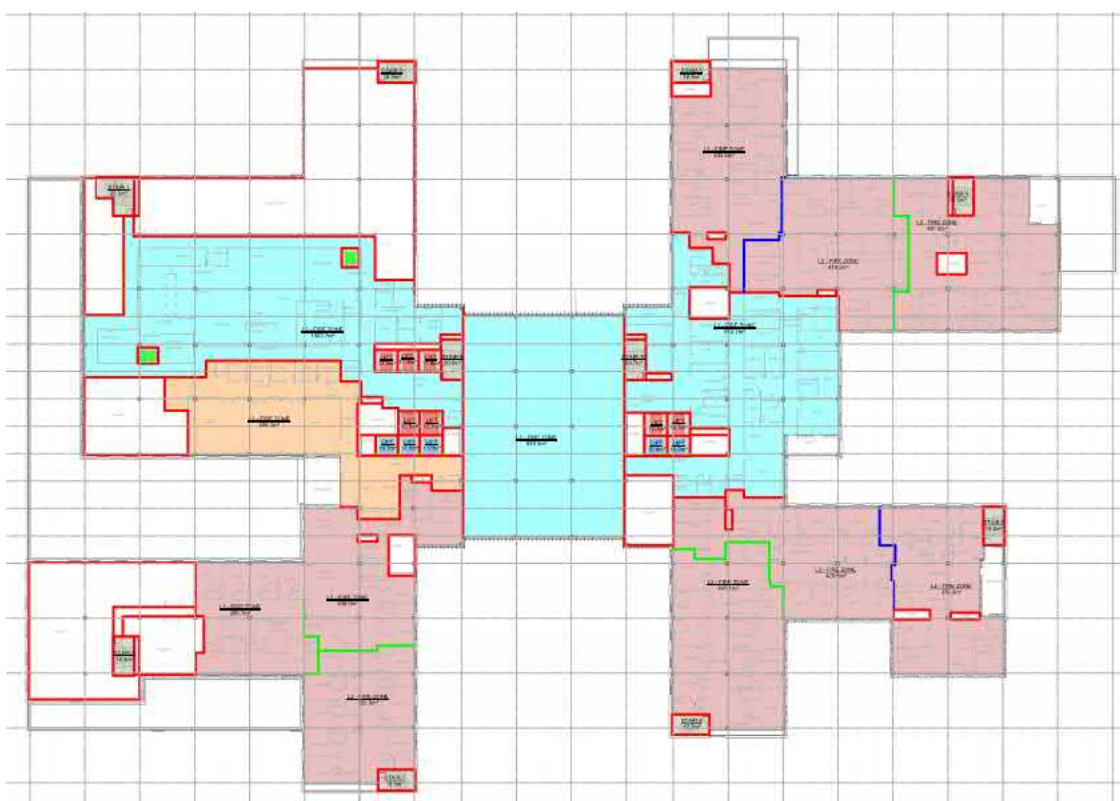
Lower Ground Level



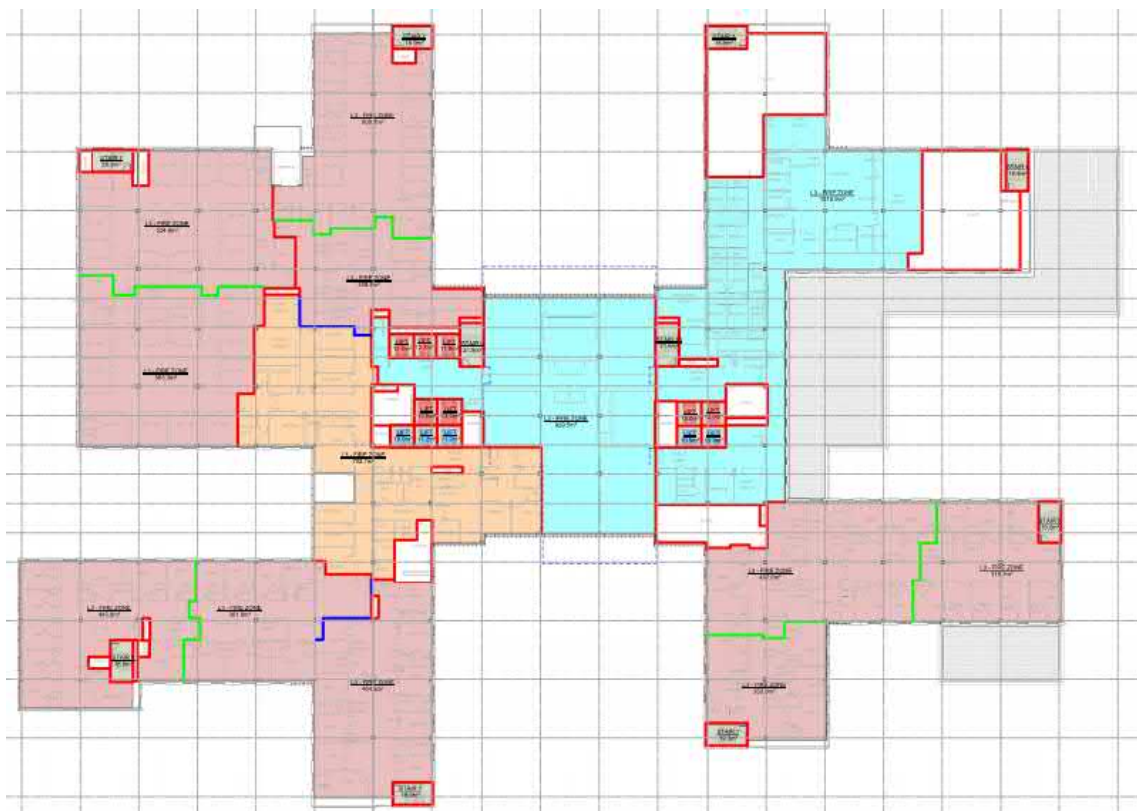
Ground Floor



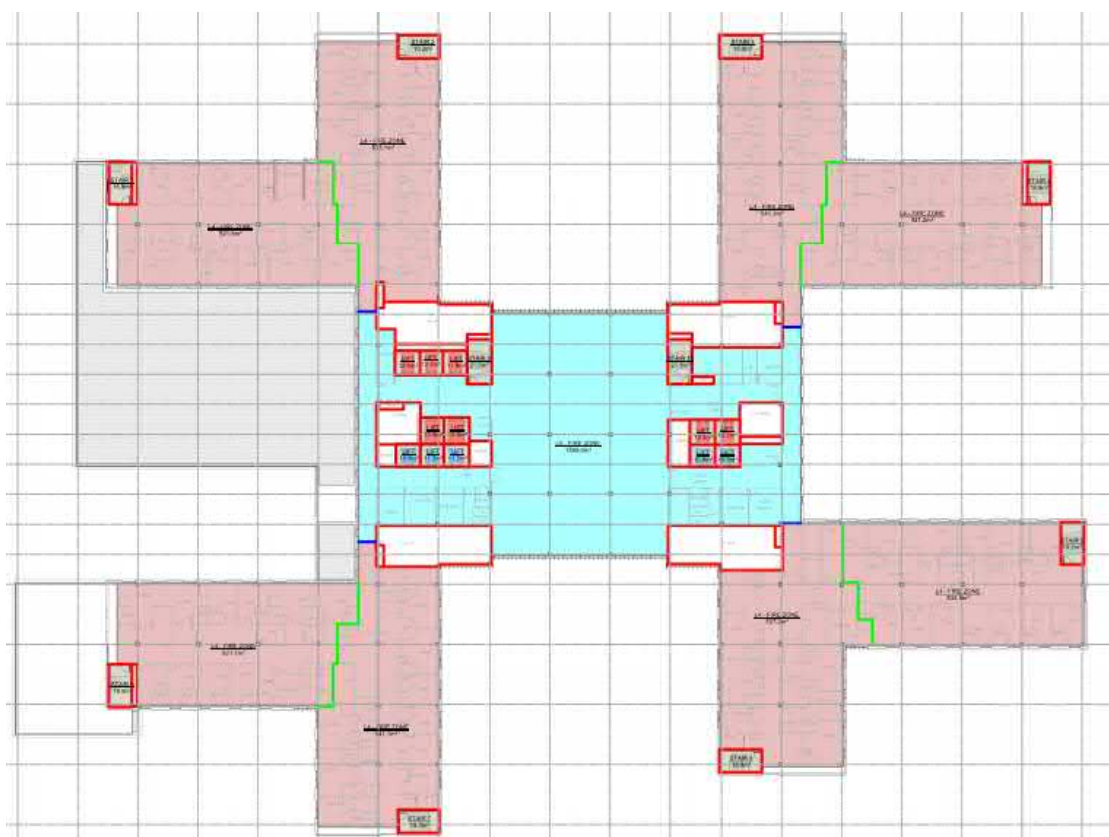
Level 1



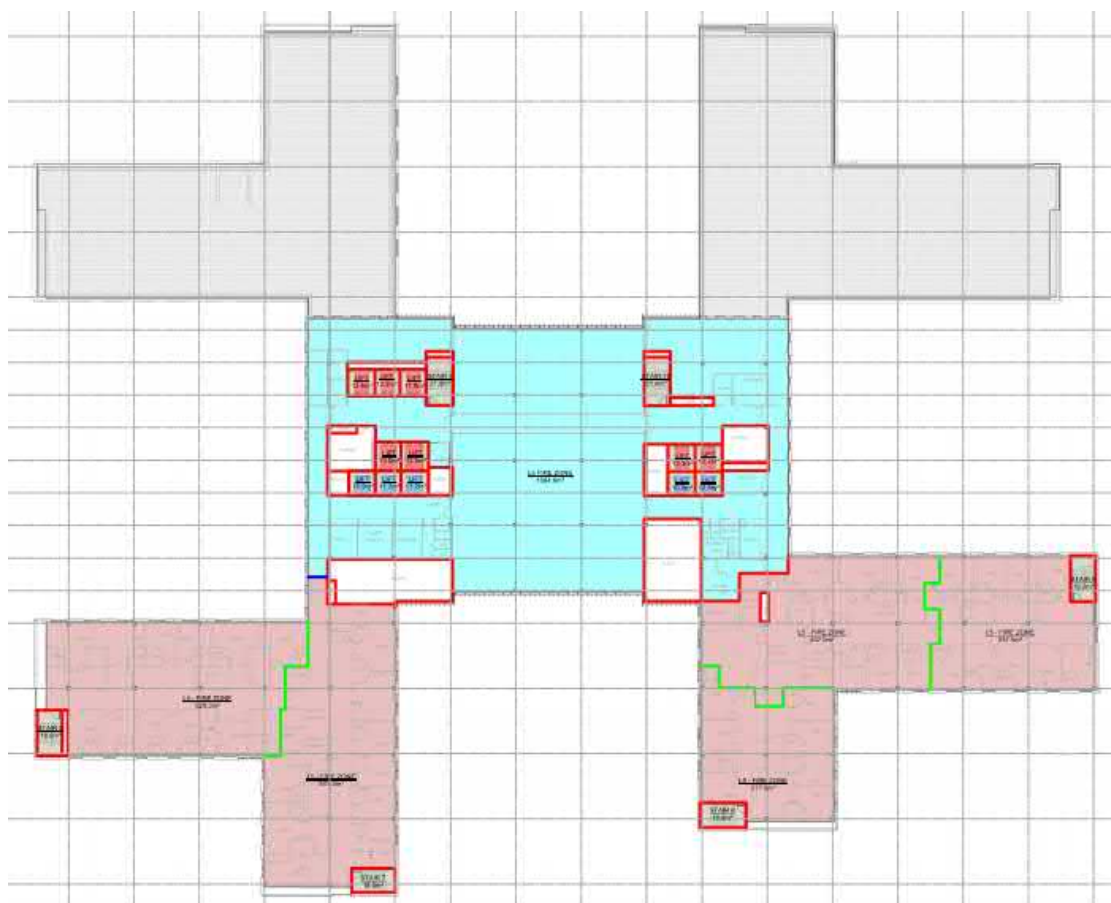
Level 2



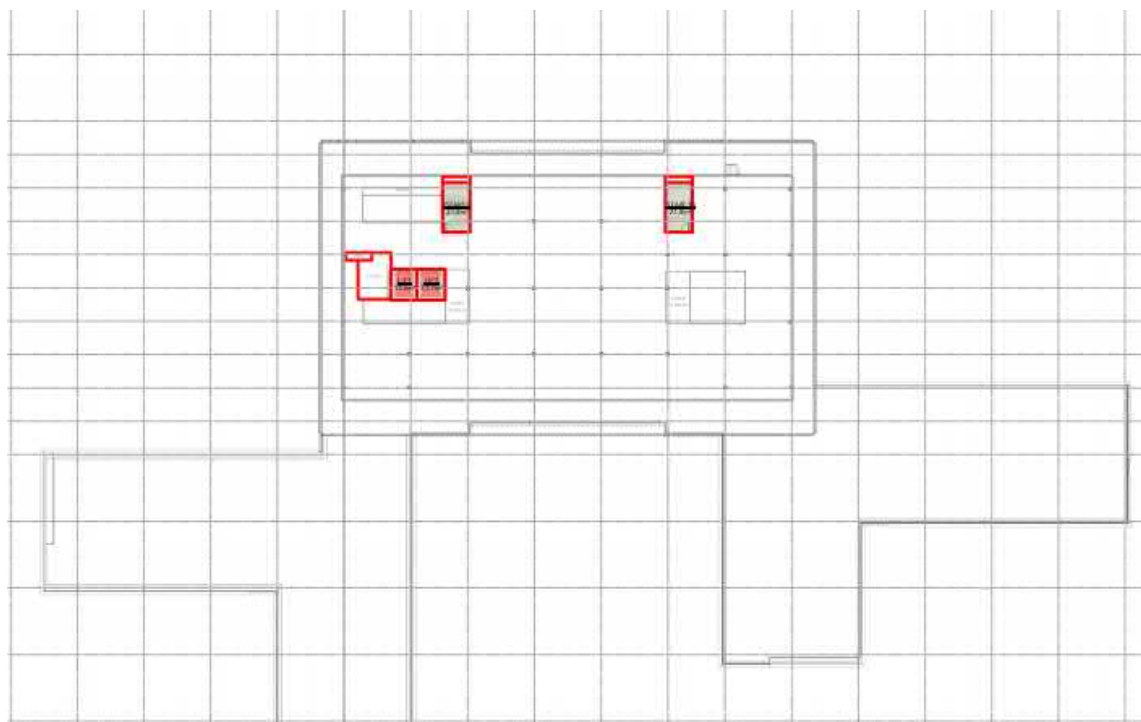
Level 3



Level 4



Level 5



Level 6



In addition to the above, all ancillary use areas located within a patient care area and containing equipment or materials that are a high potential fire hazard, must be separated from the remainder of the patient care area by walls with an FRL of not less than 60/60/60. These areas include, but are not limited to, the following:

- + A kitchen and related food preparation areas having a combined floor area of more than 30 m².
- + A room containing a hyperbaric facility (pressure chamber).
- + A room used predominantly for the storage of medical records having a floor area of more than 10 m².
- + A laundry, where items of equipment are of the type that is potential fire sources (e.g. gas fire dryers).

Walls. Walls required to have an FRL or be smoke proof are by to be of non-combustible construction (i.e. not timber frame), and must extend to the underside of:

- + the floor above; or
- + a non-combustible roof covering; or
- + a ceiling having a resistance to the incipient spread of fire to the space above itself of not less than 60 minutes.

Doors. Unless forming part of a smoke hazard management system, the fire/smoke doors are to be provided with a reservoir directly above of minimum 400mm in height. This is a design coordination issue between the ceiling heights and the door heights.

Details of the fire and smoke walls, doors and door reservoirs are required for our further review.

Fire and smoke doors in each fire and smoke wall (provided for compartmentation purposes) are to swing in the direction of egress. We note a number of doors swing against the required direction of egress for reason of functionality – these doors are to be re-documented to demonstrate pivot swing doors.

Services Penetrations. Penetration of services through fire rated walls and or smoke proof walls are to be suitably treated to maintain the integrity of the compartment. Penetration of mechanical ductwork in particular through walls that are required to be fire rated and smoke proof (combined) in various patient care areas (i.e. wards and treatment), must be combined fire and smoke dampers provided at the point of each penetration.

Alternative Solution – The following is to be rationalised through the development of a fire engineered solution;

- + Maximum Smoke zones of up to 550m² to a number of the ward areas within the building
- + Maximum Smoke zones of up to 1100m² are proposed within the treatment areas

The fire engineered solution which will be based on the provision of suitable space in adjoining compartments to accommodate additional occupants.

Important Note: Notwithstanding the above, further fire walls will need to be incorporated to address extended travel distances this will need to be refined in subsequent design stages.

7. Clause C2.7 – Separation by Fire Walls

Fire walls (*including fire rated walls*) required by Clause C2.5 above, must extend from the floor slab to the underside of the floor slab above or where no floor is provided above the roof sheeting, with no penetrations by building elements through the fire wall other than roof battens with a dimension of 75mm x 50mm or sarking. All fire walls are required to achieve the required FRL of 120/120/120 in both directions.

Note: No building elements penetrating fire walls includes steel brackets supporting electrical cable trays or any other structural elements supporting another building element.

Particular attention is drawn to where internal fire (smoke) walls intersect at the external wall. The internal fire (smoke) walls are required to extend to the face of the external wall (external wall lining with no internal void or space between adjoining compartments where fire or smoke could spread between compartments).

Detailed sections will need to be provided to demonstrate compliance accordingly.

Important Note: Early coordination with the projects architect and structural engineer is required in this regard to ensure compliance with the above is achieved. Details demonstrating compliance will be required accordingly.

8. Clause C2.10 – Separation of Lift Shafts

Lift shafts within the hospital building are required to have a fire resistance level generally of 120/120/120 (load bearing) and -/120/120 (non load bearing), inclusive of a fire rated lid over in accordance with Table 3 of Specification C1.1. Notwithstanding, where the lift shaft is located in a class 7b/8 compartment such as the BOH areas basement areas the FRL will need to be enclosed with construction achieving an FRL of 240/120/120.

Each emergency lift is to be located in a separate fire rated shaft. This can include the emergency lifts being located in separate shafts in conjunction with other non-emergency lifts (i.e. passenger only lifts)

The health hub buildings lift shaft is not required to be fire separated off from the remainder of the building by virtue of the number of storeys.



Details required for further assessment at the construction documentation stage.

9. Clause C2.12 – Separation of Equipment

Any of the following equipment must be fire rated with a fire resistance level of 120/120/120 and any doorway to have an FRL of not less than --/120/30:

- + Main switch rooms / boards; or
- + Electricity substations; or
- + Light 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;
- + A battery or batteries installed in the building that have a voltage exceeding 24 volts and a capacity exceeding 10 ampere hours.

Compartmentation plan will need to be updated wherever services noted under this clause are proposed.

Fire rating will need to be documented on the architectural documentation for each respective building accordingly. Details demonstrating compliance will need to be provided as the design develops accordingly.

10. Clause C2.13 – Electricity Supply System

Electricity substation is to be fire separated from the remainder of the building with construction achieving an FRL of 120/120/120 with any doors to be --/120/30 self-closing fire doors. It is recommended that further consultation with the relevant regulatory authority be undertaken. It should be noted that additional above and beyond BCA requirements may apply.

The main switchboard sustaining emergency equipment operating in the emergency mode must be separated from the remainder of the building with construction achieving an FRL of 120/120/120 with any doors to be --/120/30 self-closing fire doors.

The electrical conductors located within a building that supply a main switchboard as detailed within (2) above must have a classification in accordance with AS/NZS 3013 of not less than WS53W (where subject to damage by motor vehicles) or WS52W otherwise. Alternatively the conductors may be enclosed or otherwise protected with construction having an FRL of not less than 120/120/120.

Where emergency equipment is required within a building all switchboards in the electrical installation that sustain the electrical supply to the emergency equipment will be constructed so that emergency equipment switchgear is separated from non-emergency equipment switchgear by metal partitions designed to minimise the spread of fault from the non-emergency switchgear.

Details demonstrating compliance will need to be provided as the design develops accordingly.

11. Clause C3.2 & C3.4 – Protection of openings in external wall/Acceptable methods of protection

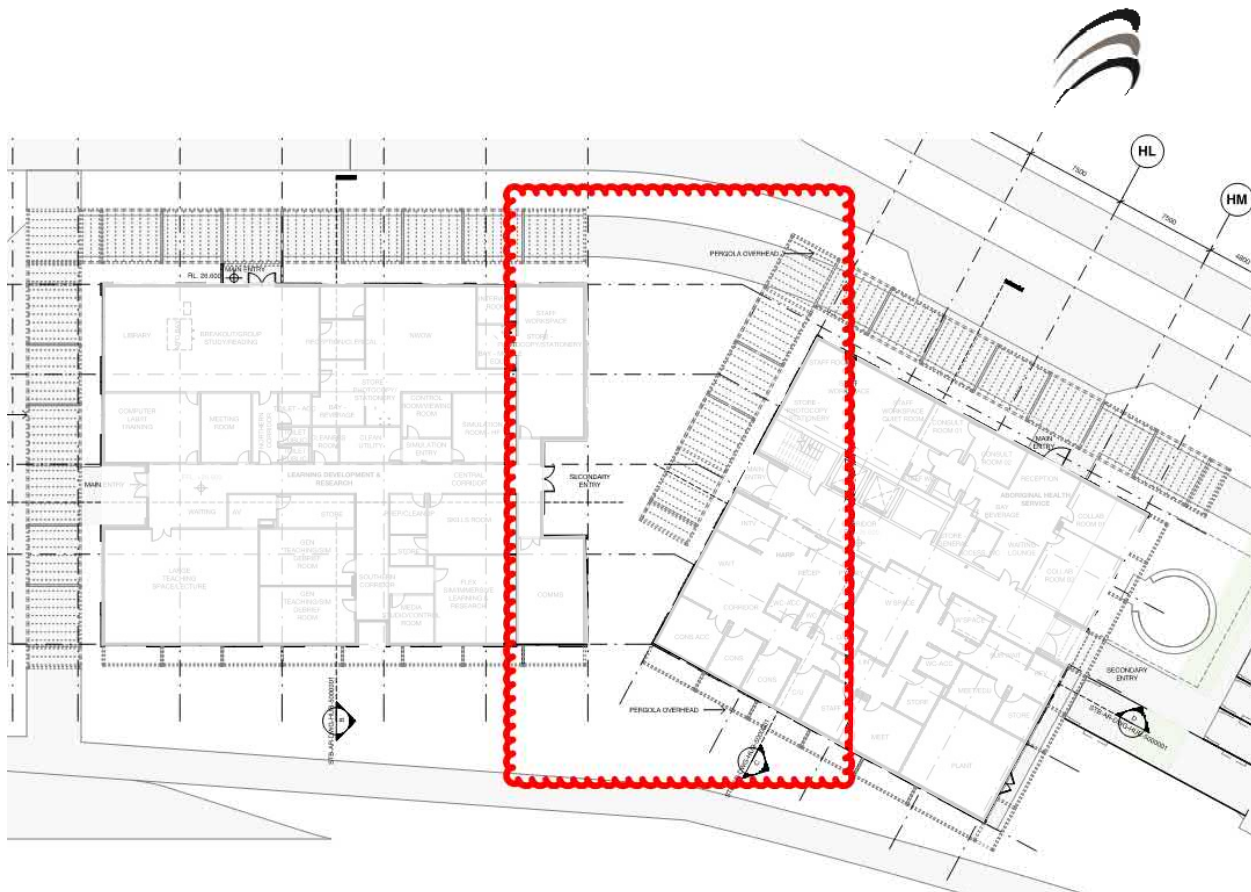
This clause governs the method of protection required to openings in an external wall required to have an FRL where it is less than –

- + 3m from a side of rear boundary.
- + 6m from the far boundary of a road, river, lake or the like.
- + 6m from another building on the allotment not being an appendant class 10 building.

Details demonstrating compliance with the requirements of this clause will need to be provided.

Alternative Solution: The direction of swing to the fire and smoke doors will need to be assessed under the fire engineered strategy.

Important Note: Where the Two storey health hub building is of TYPE B construction and where there is exposure between the single and two storey buildings occurs and openings within 6m protection of openings will be required as per C3.4 of the BCA.



12. Clause C3.3 – Separation of External Walls and Other Openings in Different Fire Compartments

With respect of the Tweed hospital building which will be broken up into multiple fire compartments, where an internal fire wall intersects at the junction of an external wall, the external walls of the different compartments and any associated openings that are exposed to one another are required to be protected in accordance with Clause C3.3.

It is noted that the health hub and multi deck car park building will form a single fire compartment.

Updated compartmentation plan will need to be provided to BM+G for review and comment.

Alternative Solution: Where exposure occurs between compartments there is opportunity to vary the method of protection under the fire engineering strategy through providing two-way protection in one of two walls in lieu of providing protection to both. This will be subject to further assessment as the design progresses. A number of the fire wall locations will be resolved in the subsequent design stages so as to achieve acceptable travel distances accordingly.

13. Clause C3.5 – Doorways in Fire Walls

Any doors located within fire walls must be fire rated to achieve the same rating as the fire wall itself i.e. 120 mins.

All fire doors are required to be self-closing or automatic closing. All automatic closing doors are required to close upon activation of the fire alarm system within the building i.e. Automatic Fire Detection & Alarm System and Automatic Fire Suppression System.

Smoke detectors must be installed not less than 300mm and within 1.5m of the automatic closing doors (on both sides of the door) where provided with a hold open device.

14. Clause C3.7 – Protection of Doorways in Horizontal Exits

Where horizontal exits are proposed they are required to have a FRL of -/120/30.

All horizontal exit doors are required to be self-closing or automatic closing. All automatic closing doors are required to close upon activation of the fire alarm system within the building i.e. Automatic Fire Detection & Alarm System, Automatic Fire Suppression System etc.

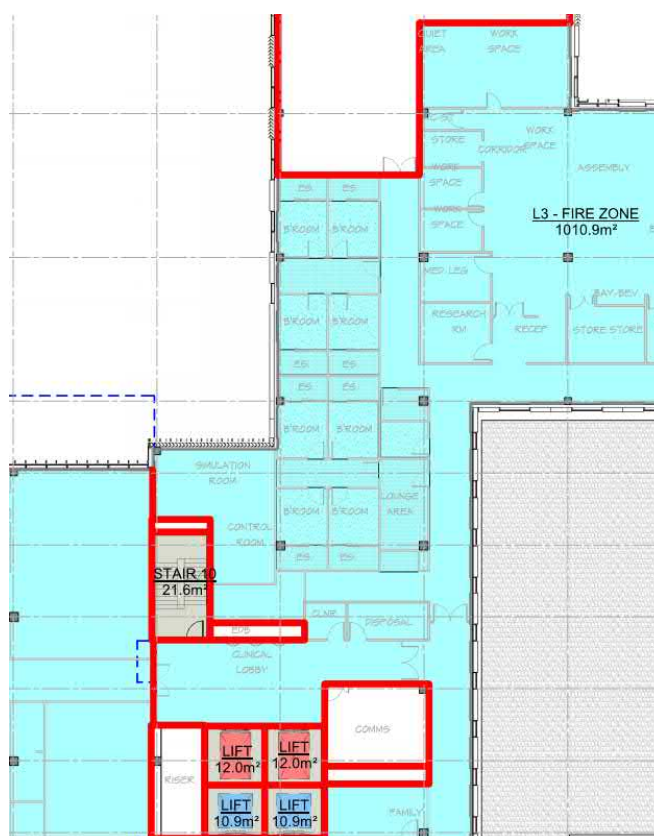
Smoke detectors must be installed between 300mm-1500mm of the automatic closing doors (on both sides of the door).

Note that location of HES still need to be refined as the design progresses however it is noted that the design relies upon a number of horizontal exits.

15. Clause C3.11 – Bounding Construction

Confirmation of any proposed staff accommodation rooms will need to be confirmed. Where staff accommodation is proposed additional fire rating will be required. To be confirmed and details provided where required.

The hospital building appears to have overnight rooms proposed to LV. 3. No fire separation is currently proposed.



Important Note: Refer also comments later in this report having regards to the provision of natural light.

Smoke proof walls within all Class 9a patient care areas (or bounding patient care area) are required to comply with the following:

- Note: -**

If any ducts that serve isolation rooms etc. are proposed not be provided with smoke dampers, then the omission of smoke dampers will be required to be addressed as part of the Fire Engineering Assessment. Services consultant will need to confirm where this is applicable and if it is to be included in FER.

It is anticipated that there will be a number of fire safety doors located in fire and smoke walls throughout the hospital building that will not swing in the direction of egress as required by Specification C3.4.



All compartment doors in the fire and smoke walls must have a minimum 400mm reservoir above the doorway unless the building is provided with a zone smoke control system in accordance with AS 1668.1. It is noted that the building is to be provided with a zone smoke control system by virtue of the effective height. As such reservoirs will not be required.

Alternative Solution: Where the fire and smoke doors do not swing in the direction of egress this will be required to be assessed as part of the Fire Engineering Assessment undertaken to be undertaken by the appointed Fire Safety Engineer.

As part of the Fire Engineering Assessment undertaken, verification will be required from the LHD that they have appropriate staffing levels and procedures to address the fact that fire safety doors swing against the direction of egress.

Furthermore, we will propose the have the respective compartment doors release only upon activation of a detector within immediate proximity of the door, hence mitigating the problems for the LHD associated with false alarms and also to assist with evacuation of occupants where the doors are designed to swing against egress travel.

SECTION D - ACCESS & EGRESS

18. Clause D1.2 – Number of Exits Required

A minimum of two (2) exits (*in addition to any horizontal exit*) must be provided from each part of the storeys within the hospital building which contains patient care areas.

The minimum number of exits has been provided from each storey of the building.

Egress strategies have not yet been fully documented on the SD documentation.

Noting that egress will consist of fire isolated stairways and internal horizontal exits (HEs), the location of stairways and fire walls will need to be documented and assessed by the end of SSDA stage.

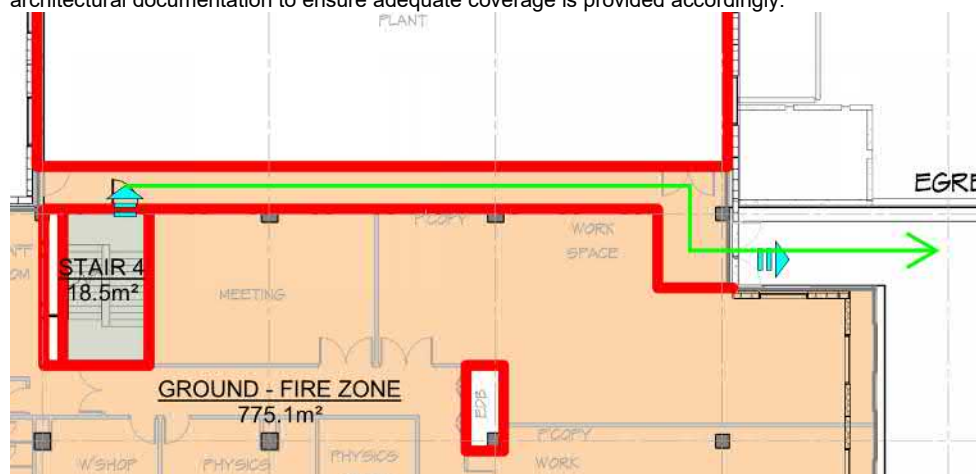
Note: The number of exits will also be derived from travel distances and aggregate egress requirements as noted below.

19. Clause D1.3 – When Fire Isolated Stairs are Required

The egress stairways serving the new clinical building are required to be constructed as fire isolated exits.

Note: Refer comments later in this report with respect of the stairway serving the helipad level which will be constructed as an external stairway in lieu of a fire isolated stairway as per the requirements of D1.8 of the BCA.

Important Note: Stair pressurisation is required to the fire isolated stairways and associated passageways. In this regard, the mechanical consultant will need to review the fire isolated passageways which are currently nominated on the architectural documentation to ensure adequate coverage is provided accordingly.



20. Clause D1.4 – Exit Travel Distances

Travel distances in patient care areas must not exceed 12m to a point of choice between two exits and 30m to a single exit. In non-patient care areas, distances must not exceed 20m to a point of choice between two exits, and 40m to a single exit.

Exit travel distances in a number of locations are excessive in a number of locations and will need to be refined and require further resolution as part of the design development. This will include the provision of horizontal exits to facilitate horizontal exits and introduction of additional stairs and the like.

Hospital building

Alternative Solution: Final egress assessment will be finalised as part of the compartmentation finalisation whilst the compartmentation limitations are generally within the limits supportable from a fire engineering perspective, a number of the proposed smoke walls will need to be documented as two hour fire walls in order to facilitate horizontal egress via way of horizontal exits.

Notwithstanding it is noted that the egress strategy will comprise a mixture of DTS and performance based arrangements

Typical distances which will be required to be considered from a fire engineering perspective are as follows



- 30m to a point of choice from non-patient care areas, including within plant spaces
- 33m to one of two exits to ward wings.
- 14.5 from NE ward area to Lv. 1 only
- 12.5m from CT room,
- 15m from operating theatres
- Egress arrangement from the ground floor bunkers will need to be confirmed appears to be up to 20m in the current layout

Multideck Carpark

- **Alternative Solution:** 50m to one of 2 alternative exits in lieu of BCA DTS maximum 40m. Detailed assessment of exit travel distances to be undertaken throughout design development, noting that there may be scope to permit extend exit travel distances by way of fire engineered Performance Solution (i.e. sprinklers / open deck carpark). Typical for BCA cl. D1.5 also.

Health Hub Building

- Egress from Level 1 of the Health Hub building does not comply with BCA clauses D1.2 and D1.4, and as such a second exit will be required to be provided. Once exit locations are confirmed, a detailed assessment of exit travel distances will be undertaken.

Important Note: The above egress strategy in terms of travel distance is still being refined through further plan amendments i.e. location of fire and smoke walls to achieve distances which can be supported. This will be refined during the Design Development stage.

21. Clause D1.5 – Distances Between Alternative Exits

Distances between alternative exits must not exceed 45m in patient care areas, and 60m in non-patient care areas.

Exit travel distances in a number of locations are excessive and require further resolution as part of the design development. This will include the provision of horizontal exits to facilitate horizontal exits and introduction of additional stairs and the like.

Clinical building

Alternative Solution: Final egress assessment will be finalised as part of the compartmentation finalisation whilst the compartmentation limitations are generally within the limits supportable from a fire engineering perspective, a number of the proposed smoke walls will need to be documented as two hour fire walls in order to facilitate horizontal egress via way of horizontal exits.

Notwithstanding it is noted that the egress strategy will comprise a mixture of DTS and performance based arrangements

Whilst egress strategy still needs refinement, typical distances which will be required to be considered from a fire engineering perspective are as follows

Typical distances which will be required to be considered from a fire engineering perspective are as follows

- 80m between alternative exits in lieu of 60m basement (non patient care)
- 56m in lieu of 45m to treatment areas to lower ground floor
- 65m between alternative exits in lieu of 45m to treatment spaces to ground
- 57m between alternative exits in lieu of 45m to treatment areas to Lv. 1
- 55m between alternative exits in lieu of 45m to the ward area Lv. 2
- 57m between alternative exits in lieu of 45m (ward area) worst case Lv. 3
- 48m between alternative exits in lieu of 45m (ward area) Lv.4-5

Multideck carpark

Alternative Solution: Extended exit travel distances in the carpark building which is currently 80m between alternative exits (measured through POC) in lieu of BCA DTS maximum permitted 60m.

Important Note: The above egress strategy in terms of travel distance is still being refined through further plan amendments i.e. location of fire and smoke walls to achieve distances which can be supported. This will be refined during the Design Development stage.

22. Clause D1.6 – Dimensions of Exits

The minimum clear height through all egress paths is required to be no less than 2m, and a minimum of 1m wide (this width dimension is measured clear of any obstructions such as handrails and joinery). In a required exit or path of travel to an exit there is concession for the unobstructed width of a doorway to be reduced to 850mm min in lieu of 1m, and the unobstructed height for an exit doorway can be reduced to 1,980mm min.

The unobstructed width of doorways in patient care areas where patients are normally transported in beds is dependent on the width of the corridor in which the doorway provides access to or from. If the corridor is less than 2.2m, the doorway must achieve >1200mm. If 2.2m wide or greater, the doorway must achieve >1070mm.

Doorways forming horizontal exits must achieve no less than 1250mm.

Corridors in a Class 9a health-care facility must achieve 1.8m in corridors normally used for the transportation of patients in beds.



The minimum unobstructed width within non-patient care areas in clinical building, throughout the multideck car park and throughout the health hub, skill centre building is to be a minimum 1m clear unobstructed width.

23. Clause D1.7 – Travel via Fire Isolated Exits

Sets out the requirements for safe discharge from various compartments and areas within a building, into a fire isolated stairway or passageway or ramp.

Note: a ramp for changes of level in a fire isolated passageway is required in a Class 9 building.

Where a path of travel from the point of discharge of a fire isolated exit necessitates passing within 6m of any part of an external wall of the same building, measured horizontally at right angles to the path of travel, that part of the wall must have –

- + an FRL of not less than 60/60/60; and
- + Any openings protected internally in accordance with BCA Clause C3.4,
- + For a distance of 3m above or below, as appropriate, the level of the path of travel, or for the height of the wall, whichever is the lesser.

All fire isolated stairways are required to comply with the requirements of this clause. Location of any proposed fire isolated stairways will need to be confirmed but as noted under D1.3 above there is the opportunity for the two stairs to be constructed as external stairs in lieu of.

Alternative Solution – The following is to be rationalised by the projects Fire Safety Engineer particularly with respect of the clinical building

- + The discharge point of the fire isolated stairway serving the helipad
- + Access to fire stairs directly from plant rooms within the clinical building
- + Path of travel from the fire isolated stairways being within 6m of the external wall of the same building. Note this will be based on alternative egress paths being provided directly once open space has been reached
- + Stair 1 discharge will need to be refined noting that additional fire separation will need to be Incorporated in the discharge area for it to be supported under a fire engineered strategy.

Discharge of the fire isolated stairways from the multideck carpark will be subject to further assessment during the DD design phase.

24. Clause D1.8 - External Stairways or Ramps in Lieu of Fire-isolated Exits

D1.8(a) An external stairway or ramp may serve as a required exit in lieu of a fire-isolated exit serving a storey below an effective height of 25m provided that it is constructed in accordance with the requirements of sub-clauses (a) to (d). The provisions also set out the requirements of protection for external required exits.

In this regard these external stairs are required to comply with the following:

- + Open at all levels of the stairway – minimum 50% free air ventilation to the naturally ventilated side – for the entire length of the wall.
- + 60/60/60 FRL separation between the stairway and the building – FRL separation required for distance not less than 6m each side of the stairway
- + No openings within 3m of the stairway – any openings within 6m are to be internally protected in accordance with C3.4 of the BCA.
- + The door leading to the egress stairways are to be --/60/30 FRL fire doors.
- + Stairs are to be non-combustible throughout.

Alternative Solution –The provision of an external stair in lieu of a fire isolated stairway to the helipad level will need to be rationalised by the project fire safety engineer

Important Note: It is noted that no other External stairs in lieu of are proposed as part of the proposed development

25. Clause D1.9 Non- fire isolated stairways

The non-fire isolated stairways must provide egress via its own flights and landings via each storey served to a level where direct egress to road or open space is achieved. As noted above, all stairs serving the clinical building are required to be fire isolated as such this clause will not apply.

The stairway serving the health hub building is required to comply with the requirements of this clause.

The distance from any point on a floor to a point of egress through a non-fire-isolated stairway must not exceed 80m and must discharge a maximum of –

- + 20m from a doorway providing egress to a road or open space or from a fire-isolated exit; or
- + 40m from one of two doorways/passageways if they are located in approximately opposite directions.

An additional stair will be required to the health hub in order to achieve an acceptable travel distance from the first floor. Potential options are as shown below. It should be noted that dependant on the final location of the additional exit extended travel distances may need to be addressed by way of a fire engineered alternative solution.



26. Clause D1.10 – Discharge from Exits

In accordance with the DTS provisions of the BCA, the discharge of exits to open space cannot incorporate any steps to connect the discharge point to the adjoining roadway.

Verification will be required as to whether there are any proposed stairways connecting the exits to the public roadways that a person is required to travel via (where there is no alternative ramp). Noting there may be stairways which are located within the path of travel to the road connected.

Where ramps are used, the gradient cannot exceed 1:8 at any part or 1:14 where the ramp is also used for access for a person with a disability.

An exit cannot be blocked at the point of discharge and where necessary suitable barriers are to be installed to prevent vehicles blocking the exit. Particular attention will need to be paid to the multideck carpark and the clinical building such as loading docks and the like.

Alternative Solution – The architect will need to confirm that there are no steps within the path of travel between the building and public road connected. The plans appear to show steps in a case where a ramp is required noting the building is of 9a classification.

Important Note: The landscaping plans and architectural documentation requires further coordination in order to confirm compliance as the current documentation does not provide sufficient details for assessment. As such this will need to be further assessed as part of the Detailed Design phase.

27. Clause D1.11 – Horizontal Exits

A technical non-compliance occurs in terms of travel via horizontal exits from within multiple fire compartments within building. In accordance with the BCA, a horizontal exit may be counted as a required exit if the path of travel from a fire compartment leads by one or more horizontal exits directly into another fire compartment which has at least one required exit which is not a horizontal exit.

Having regard to the proposed design, there are numerous instances whereby occupants will egress from one compartment into an adjoining compartment which will not be provided with direct access to an external stair, fire isolated stairway or exit discharging directly to open space.

Detailed egress strategies and compartmentation has not yet been documented on the SSDA documentation. The overall egress strategy for the building in this regard will be finalised and documented in the early Scheme design stage.

Noting that egress will consist of fire isolated stairways and internal horizontal exits (HEs), the location of stairways and fire walls will need to be documented and assessed in the early stages of scheme design.

Alternative Solution - The proposed egress design via horizontal exits which discharge into a compartment not provided with an exit other than a horizontal exit need to be rationalised by the projects Fire Safety Engineer. The discharge via horizontal exits which discharge via compartments not provided with an exit applies to both the existing and the refurbished areas.

28. Clause D1.12 – Non-required Stairways, Ramps or Escalators



This clause sets out the requirements for the application of non-required exits and the circumstances under which they may be utilised. Clause D1.12 only applies to escalators, moving walkways and travelators, non-required non-fire-isolated stairways and non-required non fire-isolated ramps.

A non-required stairway cannot be used to connect patient care areas in a Class 9a building.

Alternative Solution – The central stair (atrium) is to be opened up between multiple floors within the building and will need to be rationalised as part of the fire engineering strategy.

29. Clause D2.7 – Installations in Exits & Paths of Travel

No access is permitted to service shafts within the fire isolated stairs.

Any electrical meters, distribution boards or ducts, central communications distribution boards or equipment or electrical motors located within the corridors are to be smoke sealed and enclosed within non-combustible construction with any penetrations smoke sealed.

Gas and other fuel services must not be located within a required exit.

Note that an opening to any chute that or duct that is to convey hot products or combustion from a boiler incinerator, fireplace or the like must not be located in any part of a required exit or any corridor, hallway, lobby or the like leading to a required exit.

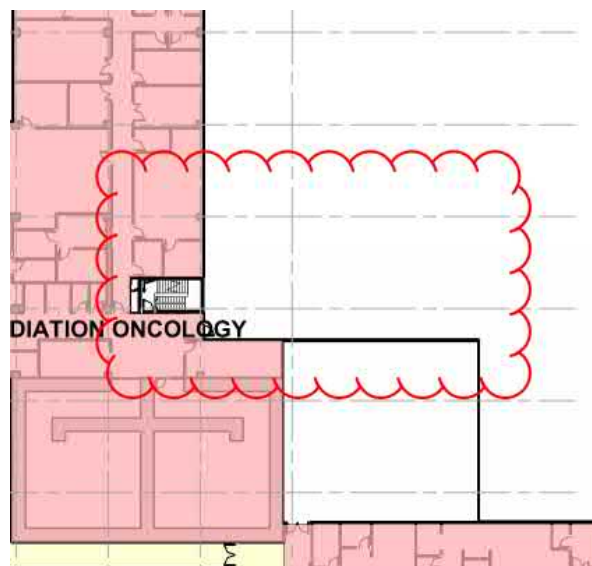
Alternative Solution – It is understood the EDB and Comms enclosures within the clinical building will be separated by 120/120/120 FRL to enable omission of sprinklers from within these enclosures fire rating will need to be documented on the compartmentation plans accordingly

30. Clause D2.12 – Roof as open space

If an exit discharges to a roof of a building, the roof must –

- + Have an FRL of not less than 120min and
- + No, roof lights or other openings within 3m of the path of travel of persons using the exit to reach a road or open space.

It is noted that the discharge from Fire Isolated stair 4 relies upon roof as open space as such the proposed discharge area is not to contain any openings as noted above. In addition, the construction of the roof will need to achieve a minimum FRL of 120min. Details demonstrating compliance will need to be provided during the detailed design stage.



31. Clause D2.13 – Goings & Risers

In relation to the construction of all stairways we note the following:

- + 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.
- + Goings and risers are to be in accordance with the following dimensions.

Riser and Going Dimensions (mm)			
	Riser (R)	Going (G)	Quantity



			(2R + G)
Maximum	190	355	700
Minimum	115	250	550

- + The stair treads are required to be provided with the following:
- + Have a surface with a slip resistance classification not less than that listed in Table D2.14 when tested in accordance with AS 4586; or
- + Be provided with a nosing strip with a slip resistance classification not less than that detailed in Table D2.14 when tested in accordance with AS 4586.
- + Each stairway is to be provided with a contrast strip to the nosing in accordance with AS1428.1-2009.

Details demonstrating compliance with the above will need to be provided for assessment during the detailed design stage.

32. Clause D2.14 – Landings

Within the Class 9a areas of the building, the stair landings to the external stairways must be designed in accordance with the following:

- + The area of any landing must be sufficient to move a stretcher, 2m long and 600mm wide, at a gradient not more than the gradient of the stairs, with at least one end of the stretcher on the landing while changing direction between flights; or
- + The stair must have a 180 degree landing, with a clear width of 1600 mm and clear length of 2700 mm.

Important Note: Details demonstrating compliance with the landing circulation requirements will need to be provide to BM+G for review and comment as part of the Detailed design phase there is insufficient information contained within current documentation.

Table D2.14 Slip Resistance Classification

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

33. Clause D2.15 – Thresholds

No steps can be located within the internal or external door thresholds. Where there are any steps within external door thresholds, a threshold or step ramp is required to be installed in accordance with Clause 10 of AS 1428.1.

General door threshold requirements.

Patient care area 9a – not more than 25mm

Other areas class 5, 7a and 9b not located on an accessible path of travel– 190mm

Alternative Solution – Steps from plant rooms into the fire isolated stairways within the clinical building (TBC)

34. Clause D2.16 – Balustrades or Other Barriers

All balustrades (stairways and walkways) will need to be compliant in terms of a minimum of 1000 mm in height above any fall more than 1m with no gaps greater than 125-mm.

In addition where the fall exceeds 4-metres the balustrades must not have any climbable elements between 150-mm and 760-mm above the floor.

Important Note: Where the fire isolated stairways are proposed to be relied upon for general circulation purposes also the balustrade must be designed as per the above points. Confirmation is required from LHD in this regard. Details demonstrating compliance will need to be provided along with the Detailed Design phase.



Within the fire isolated stairways, where the fall exceeds 1m, the balustrading must be a minimum of 865-mm above the nosing of the tread with a rail no more than 150-mm above the nosing of the tread and no gaps greater than 460-mm.

At the landing of stairs where the landing exceeds 500-mm in length the balustrade must be increased to 1m in height, with a rail no more than 150-mm above the landing and no gaps greater than 460-mm.

For openable windows where the window sill height is less than 865-mm and the fall exceeds 1-metre the window must be fixed so as to open no more than 125-mm or a rail/s will need to be installed to restrict the gap to 125-mm where less than 865-mm above the floor.

35. Clause D2.17 – Handrails

Within the clinical building handrails are to be provided along at least one side of all corridors in the patient care areas, which are fixed not less than 50-mm from the wall and continuous where practical.

Handrails will need to be provided to any egress ramps having a grade greater 1:20 including any vehicle ramps within the multi deck car park. Architect to note and provide further details for assessment during the detailed design stage. It is noted that handrails are not currently shown to the vehicle ramps and as such it is assumed that the grade is less than 1:20.

Note also the requirements within Part D3 and AS 1428/1-2009 with respect of disabled access and additional requirements which will apply to all general circulation areas and proposed egress stairways used for general circulation purposes.

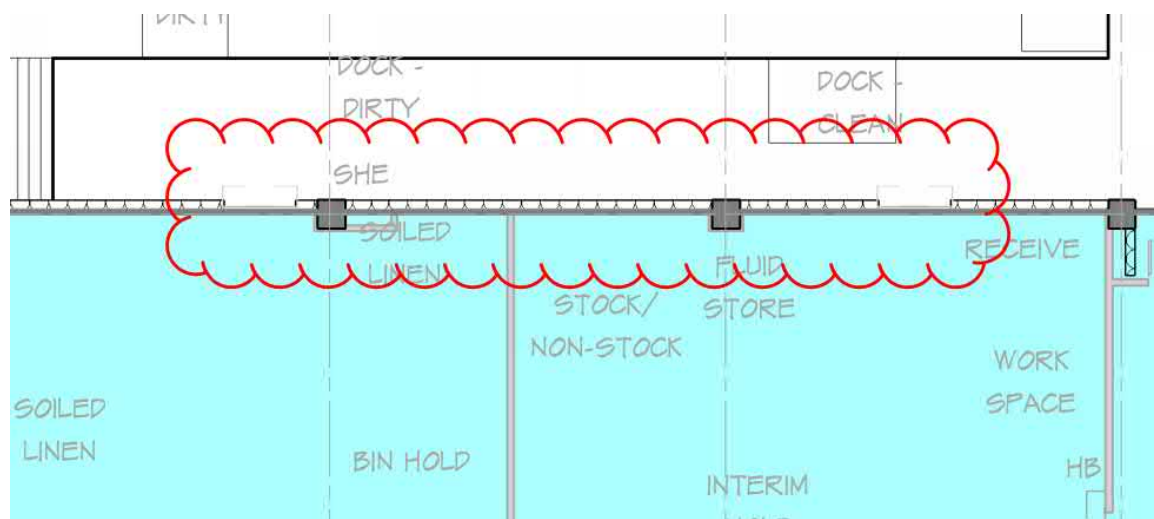
36. Clause D2.19 & D2.20 – Doorways & Doors/Swinging Doors

Doorways within the clinical building which are located in a patient care area must not incorporate a sliding door unless that door leads directly to open space and is able to be manually opened under a force of not more than 110 N and open automatically upon fire trip or power failure. Any proposed sliding doors located within patient care areas will need to be rationalised by the projects fire safety engineer. In this regard a number of sliding doors are noted and will need to be addressed in the fire engineering strategy accordingly.

Location and direction of swing of the egress doors within the building need to be confirmed. It should be noted that all exits are required to swing in the direction of egress. Further plan amendments are required in this regard a number of the required exits swing against the direction of egress in a case where not permitted.

In addition to the above, all smoke doors and horizontal exit fire doors are to be documented to swing in the direction of egress, and or rationalised as part of the fire engineered strategy.

A number of roller shutters are noted within the lower ground floor area of the clinical building contrary to the requirements of this clause. The provision of swinging doors in lieu of roller shutters will need to be further workshoped in the Detailed Design Phase.



Alternative Solution – Where horizontal exits/smoke doors swing against the direction of egress they will require consideration as part of the proposed fire engineering strategy. This will be clarified as part of the finalisation of the compartmentation plan.

The proposed sliding doors in patient care areas will need to be rationalised in the Fire Engineering Strategy.

37. Clause D2.21 – Operation of Latch

All exit doors and doors in a path of travel are required to be provided with door hardware that is openable by a single handed downward action without recourse to a key or locking device and meet the following criteria:



- + The door hardware is to be of a design that the hand of a person who cannot grip will not slip from the handle during the operation of the latch: and
- + Have a clearance between the handle and the back plate or door face at the centre grip section of the handle of not less than 35mm and not more than 45mm more

The door hardware is to be positioned between 900 – 1100mm from the ground.

The requirement for push bar type hardware will be reviewed during refinement of building classifications during the Detailed Design phase.

38. Clause D2.22 – Re-entry from fire isolated exits

Doors must not be locked from the inside in a class 9a health care building. In summary the following applies to the fire isolated stairways

- + The doors are to have no lock & provision for re-entry on at least each 4th level to enable occupants within the stair to re-enter the building without assistance, or
- + The doors can all be locked within the stairway and an intercom device (or similar) be provided at every level to enable occupants within the stairway to alert occupants within the storey of their presence and their need to re-enter.

Electrical consultant is to document re-entry as per the above.

39. Clause D2.23 – Signs on Doors

Signage is required to specific doorways throughout the building as follows:

All **self-closing** fire and/or smoke doors forming part of a Horizontal Exit or smoke compartment or doors providing access to the egress stairs are to be provided with signage as follows:



All **automatic closing** fire and/or smoke doors which are held open on hold open devices forming part of a Horizontal Exit or smoke compartment or doors providing access to the egress stairs are to be provided with signage as follows:



The doors discharging from the egress stairways are to be provided with signage as follows (on both sides of the doorways):



In addition to above, BCA DTS clause D3.6 requires Braille signage for egress systems from the building. In this instance the following is required to be provided:-

- + Identify each door required by E4.5 (door to be provided with exit signs) to be provided with an exit sign and state –
 - a. “Exit”; and
 - b. “Level” followed by the floor number

Signs identifying a door required by E4.5 to be provided with an exit sign must be located:

- c. On the side that faces a person seeking egress; and
- d. On the wall on the latch side of the door with the leading edge of the sign located between 50mm and 300mm from the architrave; and
- e. Where (ii) is not possible, the sign may be placed on the door itself.

The provision of Braille and tactile exit signage with the message, *for example*. “**Exit - Level 1**” assists people with vision impairment to orientate themselves in case of an emergency situation and to find an exit and evacuate the area in a safe and equitable manner.

Signage Specification:-

The signage is to be:-



- + Located between 1200-1600mm above FFL
- + Signs with single lines of characters are to have the line of the tactile characters between 1250mm-1350mm above FFL
- + Signage tactile characters must be raised or embossed to a height between 1mm-1.5mm
- + Upper case letter to be between 20mm-55mm

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:-

- + Provides direct egress into a fire isolated stairway
- + Provides direct discharge from the storey into a passageway or lobby (airlock) associated with the fire isolated stairway
- + Provide direct discharge from a fire isolated stairway to open space (discharge door)
- + Forms part of a horizontal exit (---/120/30 fire doors in the fire compartment walls)

The below signage is an example of what will be required:-



40. Part D3 – ACCESSIBILITY - Access Requirements for People with Disabilities

The new TVH will comply with BCA Part D3 and the Access to Premises Standards 2010 in terms of access and facilities for people with disabilities.

This will in essence ensure the design satisfies the requirements of the DDA.

Access for persons with disabilities must be provided, at a minimum, to and within **all areas normally used by the occupants**. This includes to and within **all beds**, throughout **all patient care areas**, **staff areas** and **communal areas**.

Access need not be provided to:

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

Access for a person with a disability will be required to be provided to and within all areas of the hospital in accordance with the Access to Premises Standard and the DTS provisions of the BCA.

Noting that **appendix 1** of this report includes a detailed desk-top assessment of the SSDA documentation in relation to accessibility, the following informative advice is provided for the design team to assist in preparing the SSDA stage documentation. The access report is in the process of being revised to reflect the current documentation.

Refer to **Appendix 1** for the detailed Accessibility report

BCA Part D3.2 – Access to Buildings & D3.3 – Parts of Buildings to be Accessible

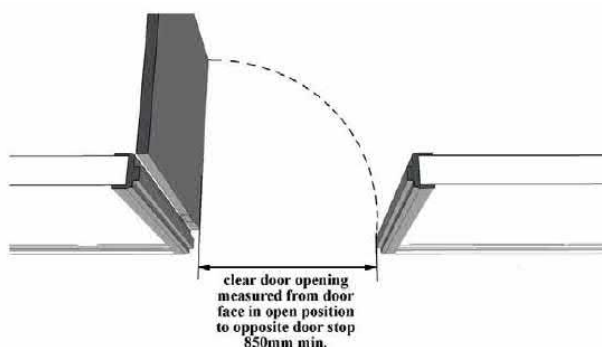
An accessway must be provided to a building required to be accessible from:

- + The main points of a pedestrian entry at the allotment boundary.
- + Another accessible building connected by a pedestrian link.
- + Any required accessible car parking space on the allotment.
- + An accessway must be provided through the principal pedestrian entrance and through not less than 50% of all pedestrian entrances



- + 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.

Note: Please refer to Clause D1.6 above having regard to the clear width of doorways where patient transportation in beds is required.



Clear Unobstructed Width of Doorway

Important Note: No detail has been provided to demonstrate that there is compliant access between the various buildings on the allotment including the multideck carpark health hub and the Clinical building. Further information demonstrating compliance will need to be provided during the Detailed Design phase accordingly.

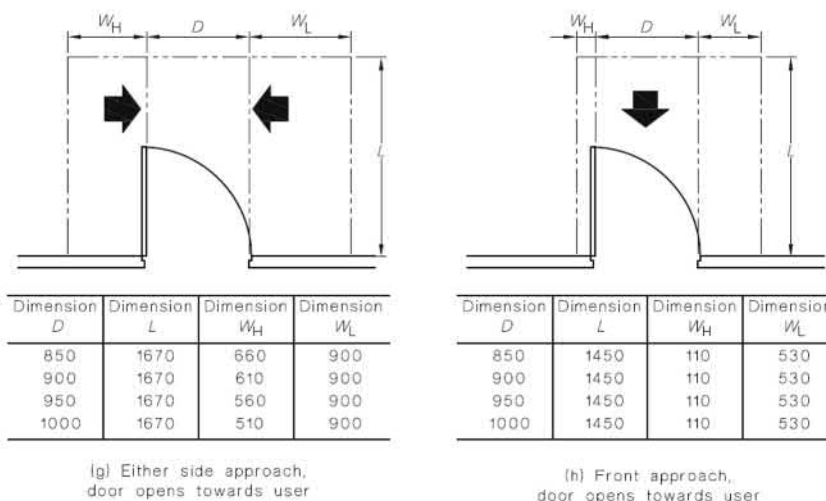
Access to the health hub and the multideck carpark from the allotment boundary will need to be reviewed in conjunction with the clinical building having regards to access from the allotment boundary. This will be subject to further review during the detailed design phase.

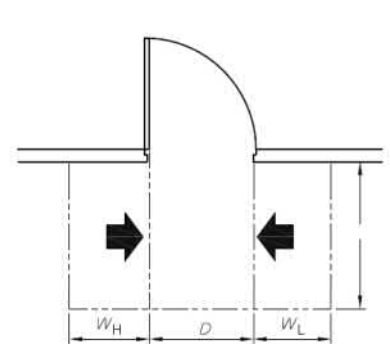
- + All doorways shall have a minimum luminance contrast of 30% provided between—

- 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.

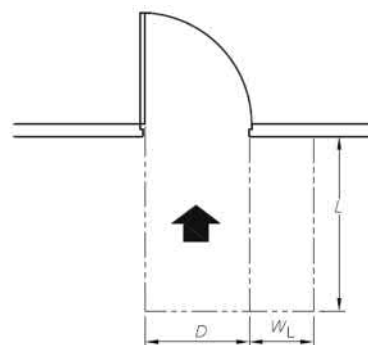
- + Circulation space is required to all doorways throughout the building that are required to be accessible in accordance with Section 13 of AS 1428.1 – 2009 (see diagrams below).





Dimension D	Dimension L	Dimension W_H	Dimension W_L
850	1240	560	660
900	1210	510	660
950	1175	460	660
1000	1155	410	660

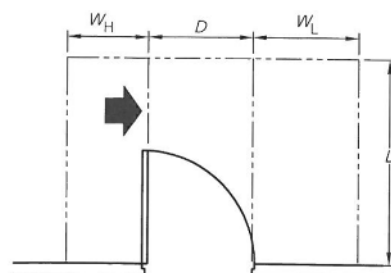
(c) Either side approach,
door opens away from user



Dimension D	Dimension L	Dimension W_H	Dimension W_L
850	1450	0	510
900	1450	0	510
950	1450	0	510
1000	1450	0	510

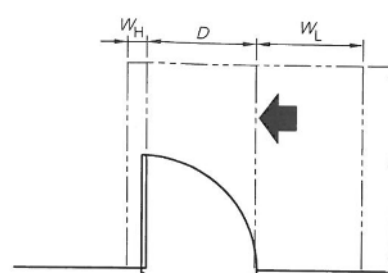
(d) Front approach,
door opens away from user

Circulation Space at Swing Doors



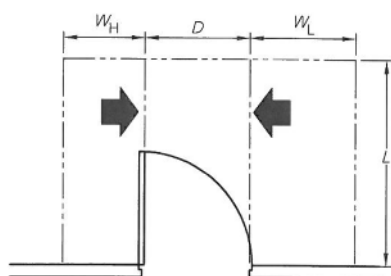
Dimension D	Dimension L	Dimension W_H	Dimension W_L
850	1670	660	900
900	1670	610	900
950	1670	560	900
1000	1670	510	900

(e) Hinge-side approach,
door opens towards user



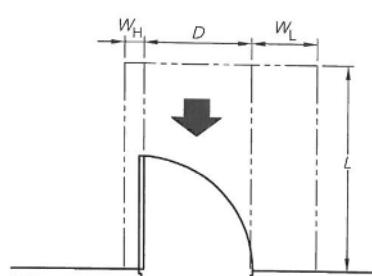
Dimension D	Dimension L	Dimension W_H	Dimension W_L
850	1670	110	900
900	1670	110	900
950	1670	110	900
1000	1670	110	900

(f) Latch-side approach,
door opens towards user



Dimension D	Dimension L	Dimension W_H	Dimension W_L
850	1670	660	900
900	1670	610	900
950	1670	560	900
1000	1670	510	900

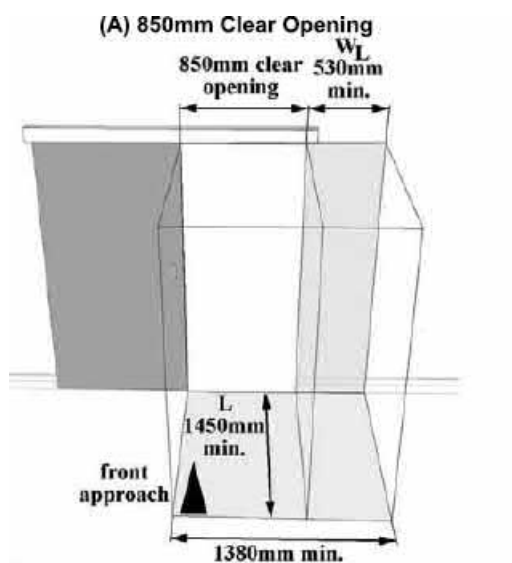
(g) Either side approach,
door opens towards user



Dimension D	Dimension L	Dimension W_H	Dimension W_L
850	1450	110	530
900	1450	110	530
950	1450	110	530
1000	1450	110	530

(h) Front approach,
door opens towards user

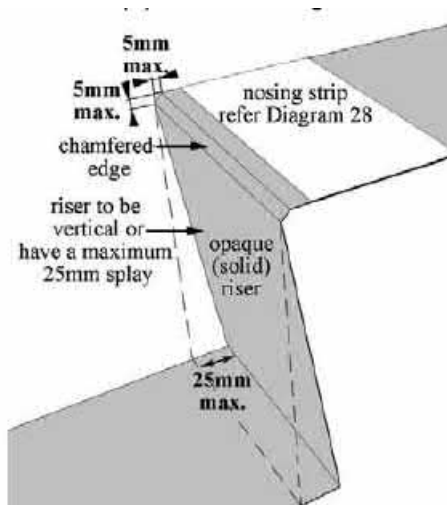
Circulation Space at Swing Doors



Circulation Space at Sliding Doors

Note: Fixed furniture cannot impede on circulation space around doorways.

- + Stair nosing to stairways shall comply with the following diagram, which achieves a colour contrast luminance of 30% to the background (tread):

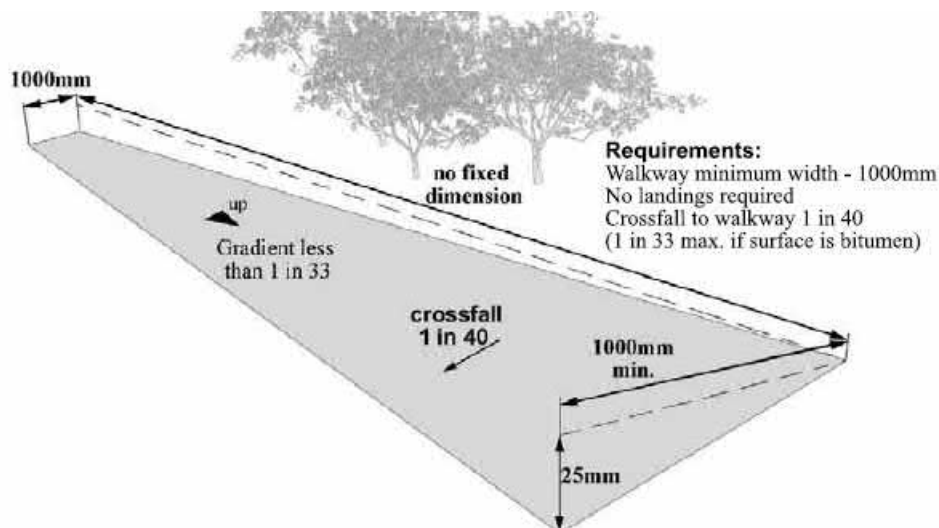


Nosing Profile

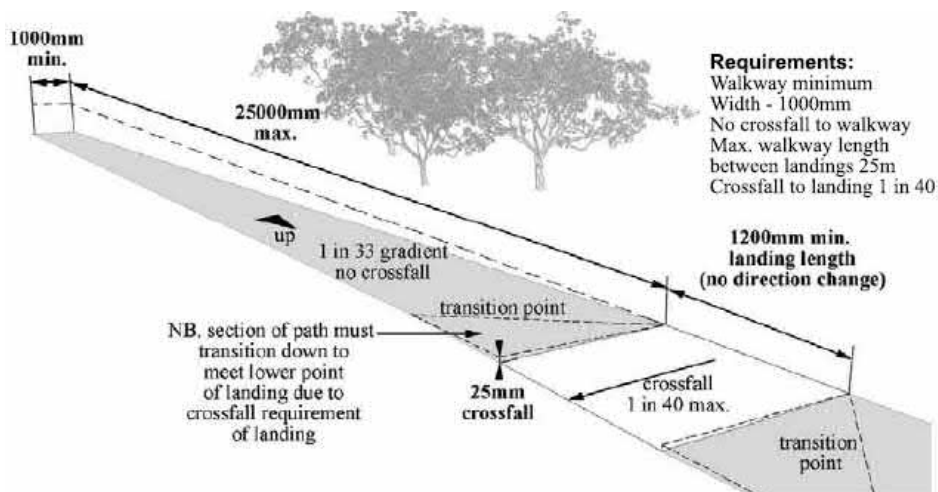
Accessible Walkways (AS1428.1 – 2009 Section 10.2):

The requirements for walkways are as follows:

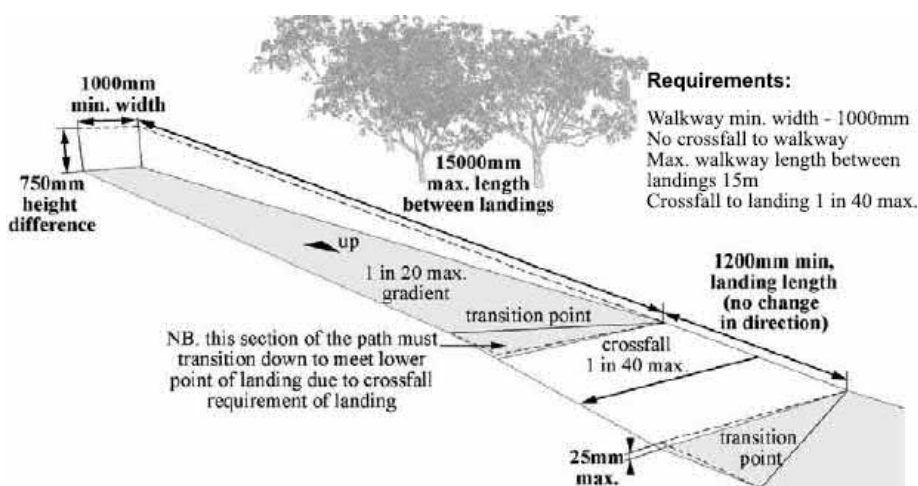
- + Walkways can have a gradient up to 1:20. Anything steeper is a ramp and requires kerbs or kerb rails plus handrails to both sides.
- + A walkway with a gradient less than 1 in 33 does not require landings but does require a crossfall of maximum 1 in 40 (maximum cross fall of 1 in 33 if the surface 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



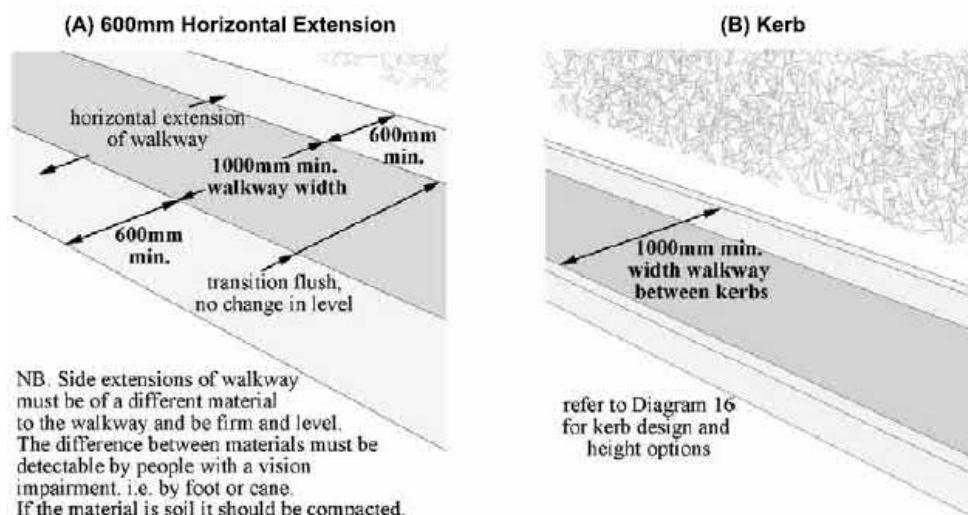
Requirements for a Walkway with a Gradient Less Than 1 in 33



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

Detailed plans demonstrating compliance will need to be provided as part of the Detailed Design phase, the architectural documentation does not show any walkways and/or ramps surrounding the subject buildings.

Accessible Ramps (AS1428.1-2009 Section 10.3):

Accessible ramps are required to be designed and constructed in accordance with the following:

- + The maximum gradient is to be 1:14.
- + Landings are to be provided at the top and bottom of the ramp and at intervals not exceeding 9m. The landings to the ramps are required to have a minimum width of 1200mm.
- + Handrails are to be provided to both sides of the ramp. The handrails are required to be extended 300mm at both the top and bottom of the ramp.
- + The ramps are to be provided with kerb rails that comply with the following:
 - + The minimum height above the finished floor shall be 65mm
 - + The height of the top of the kerb or kerb rail shall not be within the range of 75mm to 150mm above the finished floor.
 - + There cannot be a longitudinal gap or slot greater than 20mm in the kerb or kerb rail within the range 75mm to 150mm above the finished floor.
- + Where ramps are constructed with a change in direction, the angle of approach shall create a 90° angle to the line of transition between the ramp surface and the landing surface

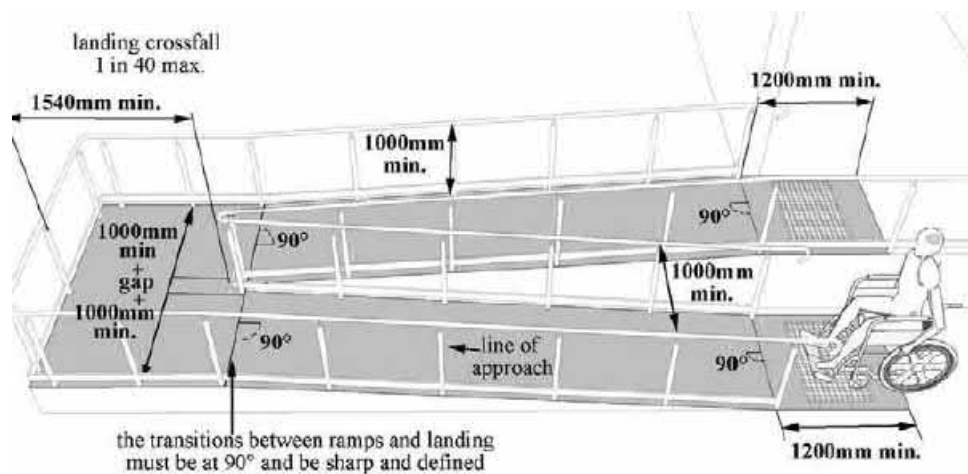
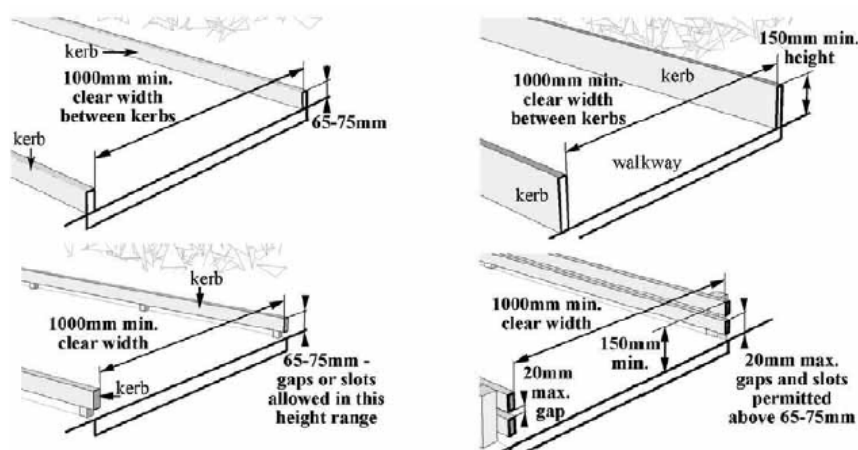
[illegible]

Diagram illustrating the design of a ramp with handrails, showing dimensions and components:

- 600mm min. vertical clearance zone above rail**: Minimum vertical clearance above the handrail.
- 300mm extension refer to Diagram 15 for terminations**: Extension of the handrail at terminations.
- Ramp**: The inclined surface.
- continuous handrail both sides of ramp**: Handrails on both sides of the ramp.
- 865-1000mm**: Height of the handrail from the ramp surface.
- kerb rail refer to Diagrams 16 and 17 and refer to 29 for handrail design**: Kerb rail design reference.
- 1000mm min. clear width**: Minimum clear width of the ramp.
- landing**: The flat area at the end of the ramp.

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Kerb and Kerb Rail Design Options

Detailed plans demonstrating compliance will need to be provided as part of the Detailed Design phase, the architectural documentation does not show any walkways and/or ramps surrounding the subject buildings.

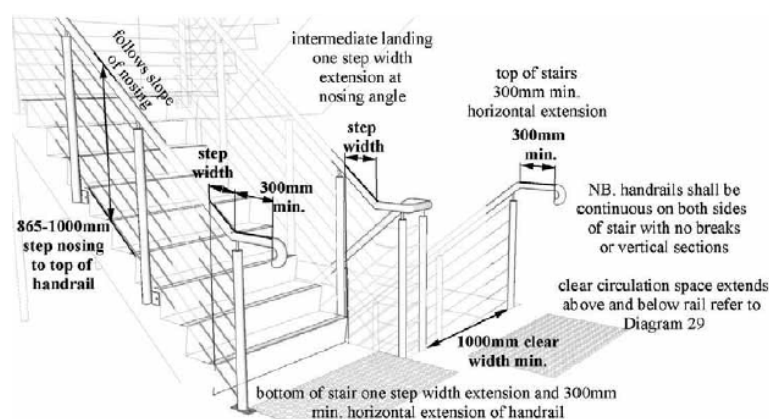
Accessible Stairways:

All stairways excluding the fire isolated stairways are required to be designed in accordance with AS 1428.1. In this instance, the following is required:

Note: Fire isolated stairways that are used as circulation stairways are required to be designed and constructed in accordance with the following:

- + A handrail to each side of stairway.
- + Handrails are required to be extended at the top and bottom of the stairway. At the bottom of the stairway, the handrails are required to extend one tread width plus 300mm from the last riser. At the top of the stairway, the handrails are required to extend 300mm from the last riser.
- + Solid opaque risers.
- + Contrast nosings to the stair treads.
- + The handrails are to have a maximum dimension of 50mm and be spaced a minimum distance of 50mm from the wall.

Note: Handrails within fire isolated stairways are only required to comply with Clause 12 of AS 1428.1 which regulates the size of the handrails, cross section and distance from adjacent walls surfaces etc. In this instance the extensions at the top and bottom of the handrails are not required within the fire isolated stairway.



Handrails to Stairways

- + Tactile ground surface indicators are technically not required to be installed within a Class 9a building; however consideration should be given to the installation of tactiles to all external stairways and ramps, main entry stairs and main circulation stairways within the building.

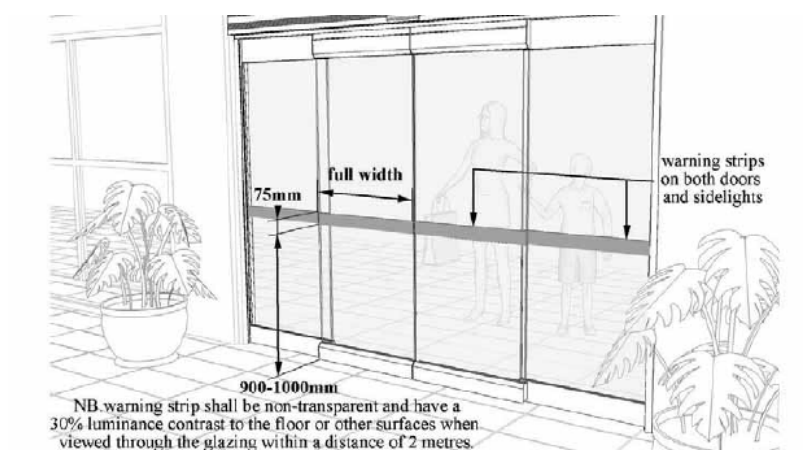
General circulation stairways will need to comply with the requirements above, it is noted that the architectural plans do not currently demonstrate compliance. Further details to be provided for assessment accordingly



Accessible Fixtures & Fittings:

All fixtures, fittings and door hardware are to comply with Section 13.5 & Section 14 of AS1428.1-2009.

- + In this instance, toggle style light switches and GPO outlets etc should be provided within all patient care areas.
- + Braille tactile signage will be required to be installed throughout the building identifying accessible sanitary facilities and exits in accordance with the DTS Provisions of the BCA and AS 1428.1.
- + Signage to identify any ambulant or accessible sanitary facility is required to be located on the wall on the latch side of door or on the door itself leading to the sanitary facility.
- + Where a pedestrian entrance is not accessible, then directional signage incorporating the international symbol of access or deafness must be provided to direct a person to the location of the nearest accessible pedestrian entrance.
- + On an accessway where there is no rail, handrail or transom provided to glazed walls and doors which may be mistaken as an opening must be clearly line marked in accordance with the following:
 - Must be clearly marked for the full width of the glazed element,
 - Must be a solid and non-transparent contrasting line,
 - The contrasting line must have a minimum of 30% luminance contrast when viewed against the floor surface or surfaces within 2m of the glazing of the opposite side.
 - Must be not less than 75mm in width,
 - The lower edge of the contrasting line must be located between 900mm and 1000mm above the finished floor level



Warning Strips to Full Height Glazing

The above will be subject to further assessment as the design progresses. This will necessitate the submission of room layout sheets and the like for review and comment.

Accessible Parking: Accessible car parking spaces must comply with the requirements of AS 2890.6 – 2009. The provision of spaces is to be in accordance with the following table:

The total number of accessible spots site wide will need to be confirmed. It is likely that this will be subject to a site wide assessment during the Detailed Design phase.

Notwithstanding the above, it is clear that the current accessible spaces with the multideck carpark do not comply particularly with respect of the columns within the adjacent shared zones. Typical example below. Access from the accessible car spots to the lifts will need to be connected via a compliant access way the plans show little detail and therefore it is not clear whether compliance is achieved.

Class of building to which the carpark or car parking area is associated:		Number of accessible car parking spaces required:
Class 9a	Hospital (non-outpatient area) –	1 space for every 100 car parking spaces or part thereof.
	Hospital (outpatient area) –	
	(a) Up to 1000 car parking spaces and	1 space for every 50 car parking spaces or part thereof.



- | | | |
|--|---|----------|
| | (b) For each additional 100 car parking spaces or part thereof in excess of 1000 car parking spaces | 1 space. |
|--|---|----------|

Signage: Braille and tactile signage must be provided to identify each door required to be provided with an exit sign as well as identifying accessible sanitary facilities.

Hearing Augmentation: A hearing augmentation system must be provided where an inbuilt amplification system, other than one used only for emergency warning is installed in a meeting room, or a reception area where the public is screened from the service provider

Glazing on an accessway: On an accessway, where there is no chair rail, handrail or transom, all frameless or fully glazed doors, sidelights and any glazing capable of being mistaken for a doorway or opening, must be clearly marked in accordance with AS 1428.1 - 2009.

Any glazing on an accessible path of travel which is capable of being mistaken for a doorway or opening must be provided with a full-width solid and non-transparent contrasting line. The contrasting line must be not less than 75mm wide and shall extend across the full width of the glazing panel. The lower edge of the contrasting line shall be located between 900mm and 1000mm above the plane of the finished floor level



SECTION E – SERVICES AND EQUIPMENT

Clinical Building

Statutory Fire Safety Measure	Design / Installation Standard
Access Panels, Doors & Hoppers	BCA Clause C3.13 & AS 1530.4 – 2014 and Manufacturer's specifications
Alarm Signalling Equipment	AS 1670.3 – 2018
Automatic Fail-Safe Devices	BCA Clause D2.21
Automatic Fire Detection & Alarm System	BCA Spec. E2.2a & AS 1670.1 – 2018
Automatic Fire Suppression Systems (Sprinklers)	BCA Spec. E1.5 & AS 2118.1 – 2017 or AS 2118.6 – 2012
Building Occupant Warning System activated by the Sprinkler System	BCA Spec. E1.5, Clause 8 and / or Clause 3.22 of AS 1670.1 – 2018
Emergency Lifts	BCA Clause E3.4 & AS 1735.2 – 2001
Emergency Lighting	BCA Clause E4.4 & AS 2293.1 – 2018
Emergency Evacuation Plan	AS 3745-2010
Exit Signs	BCA Clauses E4.5, E4.6 & E4.8; and AS 2293.1 – 2018
Fire Control Centre	BCA Spec E1.8
Fire Blankets	AS 3504 – 1995 & AS2444 – 2001
Fire Dampers	BCA Clause C3.15, AS 1668.1 – 2015 & AS 1682.1 & 2 – 1990 and manufacturer's specification
Fire Doors	BCA Clause C2.12, C2.13, C3.2, C3.4, C3.5, C3.6, C3.7, C3.8 & C3.11; and AS 1905.1 – 2015 and manufacturer's specification
Fire Hose Reels	BCA Clause E1.4 & AS 2441 – 2005
Fire Hydrant Systems	Clause E1.3 & AS 2419.1 – 2005
Fire Seals	BCA Clause C3.15, AS 1530.4-2014 & AS 4072.1 – 2005 and manufacturer's specification
Fire Windows	BCA Spec C3.4
Lightweight Construction	BCA Clause C1.8 & AS 1530.4 – 2014 and manufacturer's specification
Mechanical Air Handling Systems (automatic shutdown)	BCA Clause E2.2, 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
Pressurising Systems	BCA Clause E2.2 & AS/NZS 1668.1 – 2015
Required Exit Doors (power operated)	BCA Clause D2.19(b)
Smoke Hazard Management Systems (zone smoke control)	BCA Part E2 & AS/NZS 1668.1 – 2015
Smoke Dampers	AS/NZS 1668.1 – 2015
Smoke Doors	BCA Spec C3.4 & C2.5
Sound System & Intercom Systems for Emergency Purposes (SSISEP)	BCA E4.9, Clause 5 of BCA Spec G3.8 and AS1670.4-2004
Stand-by Power Systems	BCA Clause E1.3, E3.4, E4.2 & E4.5; and AS 3000 – 1991
Wall-Wetting Sprinklers	BCA Clause C3.4 & AS 2118.2 – 1995
Warning & Operational Signs	Section 183 of the EP&A Regulation 2000, AS 1905.1 – 2005, BCA Clause C3.6, D2.23, D3.6, E3.3

Note 1: - The measures included and the standards of performances nominated above may vary as a result of the proposed Fire Engineering Assessment and any design modifications which may alter the building characteristics.

Note2: - The above list is a schedule of fire safety measures required under Section E of the BCA only and does not take into consideration any other measures that may be required in the building as a result of other requirements of the BCA or other statutory standards together with the proposed Fire Engineering Assessment.

The location of the fire services booster assembly, associated fire water storage tanks and infrastructure will be strategically positioned to maximise FRNSW access and operation requirements. The location of the fire services equipment in this regard will be developed in conjunction with FRNSW, noting the preferred location will be in the service yard circled below.

The design will however need to demonstrate that the service yard can accommodate all the required fire services equipment (booster, tanks etc) whilst facilitating brigade access without compromise by other vehicles and other activities that may be likely to occur in this yard at any point in time.



The fire services consultant has noted the following spatial requirements for the various fire systems:-

Item No.	Plant / Spatial Item	Location	Dimensions (minimum)
1	Fire sprinkler and fire hydrant pump room	Services yard compound (with direct access to road or open space and located adjacent to fire tanks)	5m W x 6m L x 2.5m H (2 x diesel combined fire booster pumps)
2	Fire water storage tanks Based on 10L/sec automatic inflow from the Authority main.	Services yard compound (with direct access to road or open space and located adjacent to fire pump room)	17 m W x 12.5 m L x 4 m H (fire service volume of 300 m³)
3	Combined Sprinkler / Hydrant Fire brigade booster assembly	Services yard compound with direct access by fire brigade appliance Alternate solution, subject to PCA, Fire engineer and Fire and Rescue NSW approval	3.5 m L x 1.5 m D x 2 m H
4	Fire Control Room (Not mandatory for building of this height, but preferred for health facility campus)	Services yard compound with direct egress to road and open space Alternate solution, subject to PCA, Fire engineer and Fire and Rescue NSW approval	6.0m W x 3.0 m D x 2.4m Full height
7	Fire hose reel and fire hydrant cabinet / recess	Within 4 m of required fire exits	0.4 m D x 0.9 m W x full height

Multi Deck Carpark

Statutory Fire Safety Measure	Design / Installation Standard
Access Panels, Doors & Hoppers	BCA Clause C3.13 & AS 1530.4 – 2014 and Manufacturer's specifications
Alarm Signalling Equipment	AS 1670.3 – 2018
Automatic Fail-Safe Devices	BCA Clause D2.21
Automatic Fire Detection & Alarm System – (Pending FER)	BCA Spec. E2.2a & AS 1670.1 – 2018
Emergency Lighting	BCA Clause E4.4 & AS 2293.1 – 2018
Emergency Evacuation Plan	AS 3745-2010
Exit Signs	BCA Clauses E4.5, E4.6 & E4.8; and AS 2293.1 – 2018
Fire Blankets	AS 3504 – 1995 & AS2444 – 2001
Fire Dampers	BCA Clause C3.15, AS 1668.1 – 2015 & AS 1682.1 & 2 – 1990 and manufacturer's specification
Fire Doors	BCA Clause C2.12, C2.13, C3.2, C3.4, C3.5, C3.6, C3.7, C3.8 & C3.11; and AS 1905.1 – 2015 and manufacturer's specification
Fire Hose Reels	BCA Clause E1.4 & AS 2441 – 2005
Fire Hydrant Systems	Clause E1.3 & AS 2419.1 – 2005
Fire Seals	BCA Clause C3.15, AS 1530.4-2014 & AS 4072.1 – 2005 and manufacturer's specification
Mechanical Air Handling Systems (automatic shutdown) – TBC (Jet Fans)	BCA Clause E2.2, 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
Required Exit Doors (power operated)	BCA Clause D2.19(b)
Sound System & Intercom Systems for Emergency Purposes (SSISEP) and/or Building Occupant Warning System – (Pending FER)	BCA E4.9, Clause 5 of BCA Spec G3.8 and AS1670.4-2004
Warning & Operational Signs	Section 183 of the EP&A Regulation 2000, AS 1905.1 – 2005, BCA Clause C3.6, D2.23, D3.6, E3.3

Note 1: - The measures included and the standards of performances nominated above may vary as a result of the proposed Fire Engineering Assessment and any design modifications which may alter the building characteristics. It is noted that the above will need to be revised once detailed sections have been reviewed in order to verify the effective height.

Note 2: - The above list is a schedule of fire safety measures required under Section E of the BCA only and does not take into consideration any other measures that may be required in the building as a result of other requirements of the BCA or other statutory standards together with the proposed Fire Engineering Assessment.

Note 3: - The building currently has an effective height of less than 25m. Any changes to the levels noted in B2 of this report will require re-assessment accordingly.



Health Hub

Statutory Fire Safety Measure	Design / Installation Standard
Automatic Fail-Safe Devices	BCA Clause D2.21
Automatic Fire Detection & Alarm System– (Pending FER)	BCA Spec. E2.2a & AS 1670.1 – 2018
Building Occupant Warning System activated by the Sprinkler System – (Pending FER)	BCA Spec. E1.5, Clause 8 and / or Clause 3.22 of AS 1670.1 – 2018
Emergency Lighting	BCA Clause E4.4 & AS 2293.1 – 2018
Emergency Evacuation Plan	AS 3745-2010
Exit Signs	BCA Clauses E4.5, E4.6 & E4.8; and AS 2293.1 – 2018
Fire Blankets	AS 3504 – 1995 & AS2444 – 2001
Fire Doors	BCA Clause C2.12, C2.13, C3.2, C3.4, C3.5, C3.6, C3.7, C3.8 & C3.11; and AS 1905.1 – 2015 and manufacturer's specification
Fire Hose Reels	BCA Clause E1.4 & AS 2441 – 2005
Fire Hydrant Systems	Clause E1.3 & AS 2419.1 – 2005
Fire Seals	BCA Clause C3.15, AS 1530.4-2014 & AS 4072.1 – 2005 and manufacturer's specification
Lightweight Construction –(Pending confirmation of building classification)	BCA Clause C1.8 & AS 1530.4 – 2014 and manufacturer's specification
Mechanical Air Handling Systems (automatic shutdown)	BCA Clause E2.2, 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
Required Exit Doors (power operated)	BCA Clause D2.19(b)
Wall-Wetting Sprinklers	BCA Clause C3.4 & AS 2118.2 – 1995
Warning & Operational Signs	Section 183 of the EP&A Regulation 2000, AS 1905.1 – 2005, BCA Clause D3.6, E3.3

Note 1: - The measures included and the standards of performances nominated above may vary as a result of the proposed Fire Engineering Assessment and any design modifications which may alter the building characteristics.

Note 2: - The above list is a schedule of fire safety measures required under Section E of the BCA only and does not take into consideration any other measures that may be required in the building as a result of other requirements of the BCA or other statutory standards together with the proposed Fire Engineering Assessment.

41. Clause E1.3 – Fire Hydrants

A fire hydrant system is required to be installed to provide coverage to all parts of the building in accordance with BCA Clause E1.3 & AS 2419.1 – 2005. Consideration is to be given to any future proofing provisions i.e. where it is proposed to provide provision for additional storeys.

System Performance

Based on the fact that the Fire Compartments exceed 500m², the maximum number of fire hydrants that are required to flow simultaneously is 2 in accordance with Table 2.1 of AS 2419.1 – 2005. Hydraulic consultant is to review and ensure compliance.

Having regard to the above, the hydraulic consultant is to provide confirmation that the flow rate of the hydrant system has been designed for the required number of hydrants simultaneously flowing at the appropriate flow rate i.e. 2 hydrants flowing simultaneously at 10 l/s which equates to a minimum flow rate of 20 l/s. The hydraulic consultant is to review and confirm the above based on the size of the proposed building, also having regards to proposed future proofing works.

Fire Hydrant Booster

Verification is required as to the proposed location of the Fire Hydrant Booster.

The Hydrant booster is required to be located adjacent to the main vehicular entrance and within the sight of the main entrance of the building and be positioned within 8m of a hardstand area.

Coverage mark-ups are to be provided to BM+G for review and comment for all areas including areas subject to refurbishment works. Coverage to the external ambulance bays and the like will need to be verified by the projects hydraulic consultant.

A fire hydrant system is required to be installed to provide coverage to all parts of the building in accordance with AS 2419.1 – 2005.

Internal Hydrants are to be located within 4m of the required exits.

A minimum of one fire hydrant is required to serve each fire compartment unless covered by a fire hydrant within a fire isolated stairway.



Typically fire hydrants shall be located within the fire isolated stairs and offer protection to a single floor level. Where coverage cannot be achieved from the fire stair hydrant, hydrants will be located throughout the floors. They are typically collocated with the fire hose reels.

Fire Hydrants located in the stairways must not encroach on the required 1000 mm clear exit width.

A combined fire hydrant/sprinkler system compliant with AS2118.1 2017 or AS2118.6 2012 and AS2419.1 2005 will be provided throughout all proposed build areas. The water supply for the combined system will extend from the domestic water supply ring main infrastructure and will comprise of brigade booster assembly, pressure pumps and water storage tanks.

New pipework within the building will be constructed using Galvanised Mild Steel (GMS) and where practicable will be confined to fire isolated exits.

Hydrant coverage is based on the following:

- + External hydrants = 60m hose and 10m stream
- + Internal hydrants = 30m hose and 10m stream

The total flow demand for the Fire hydrants is 20 L/sec.

42. Clause E1.4 – Hose Reels

Fire hose reels are required to be installed throughout the building in accordance with AS 2441 – 2005.

Fire hose reels are required to be located within 4m of an exit or adjacent to an internal fire hydrant (other than hydrants within a fire isolated stairway).

The fire hose reels for the proposed building will be placed in positions compliant with the requirements of BCA / NCC and AS2441-2005. Fire hose reels are to be placed generally within 4m of required exits to provide full coverage to the proposed building and such that fire hose reels do not extend through fire and smoke doors.

Fire hose reels may be connected to the potable supply or combined fire hydrant and automatic fire protection system. Both systems will be considered during the concept and schematic design phases.

Fire hose reel coverage is based on the following:

- + Internal / External hose reels = 36m hose and 4m stream

43. Clause E1.5 – Sprinklers

The TVH Building will be required to be provided with an Automatic Fire Suppression System.

The sprinkler system needs to be designed to comply with BCA clause E1.5 and AS2118.1-2017.

The proposed location of the sprinkler valve room is to be confirmed. It should be noted that the sprinkler control valve is to be accessible directly from a road or open space.

The sprinkler system will be required to all external canopies, covered walkways, balconies etc in accordance with AS 2118.1.

The sprinkler system is required to be installed to all lift shafts and riser shafts throughout the building in accordance with AS 2118.1. It is understood the FER will investigate the option of removing wet sprinkler pipe system from within the lift shaft and lift machine compartment

The sprinkler system is required to be installed to all Comms Rooms, EDB Enclosures, Comms cupboards etc. throughout the building. If sprinklers proposed to be omitted from these enclosures, they will be required to be completely fire separated from the remainder of the building by construction achieving an FRL of 120/120/120 and be required to be addressed as part of the Fire Engineering Assessment to be undertaken by the appointed Fire Safety Engineer.

Hydraulic consultant to confirm any other departures associated with the sprinkler system that need to be considered under the fire engineering strategy including any RTI non-compliances associated with recessed sprinkler heads.

In accordance with AS 2118.1, sprinklers are required to be installed in any roof void unless the following criteria achieved:

- + The roof void is to be constructed entirely of non-combustible materials and contains only Fire resistant cables to AS/NZS 3000;
- + Non-bundled electrical wiring and lighting installed in accordance with AS/NZS 3000;
- + Piping; and
- + Metal ducting with flexible connections and insulation complying with AS 4254.
- + The roof void cannot have readily permanent access or be capable of being used either intermittently or permanently as a storage area.



Where an automatic foam suppression system is currently proposed for the helipad, consultation with FRNSW will be required, noting the need for foam suppression systems is largely governed by the Brigades. To be confirmed by NSW Health Infrastructure).

Generally a sprinkler alarm flow switch will be provided at each floor. (Limited to 9,000 m² per valve). The alarm flow switches will be located within the fire isolated stairs at each stair landing in accordance with AS2118.6 2012.

The sprinkler classification has been determined as:

- + Light Hazard – General hospital areas and patient care areas
- + Ordinary Hazard 1 - Plantrooms
- + Ordinary Hazard 2 – Public entry drop-off
- + Ordinary Hazard 3 – Retail / Storage

Any ceiling void in excess of 200 mm deep will be sprinkler protected.

The total flow demand for the sprinklers is 20 L/sec. (Subject to wall wetting drenchers if required).

Any proposed recessed sprinklers (flush mounted) in areas of infection control or where anti-ligature installations are necessary, will need to be addressed in the fire engineered alternative solution.

It is understood that the health hub building will not be sprinkler protected. This will need to be confirmed.

Important Note: Having regards to the multideck carpark the building currently has an effective height less than 25m in effective height. As such sprinkler protection is not currently required throughout the building. this effective height will be reviewed to ensure the building remains under 25m in subsequent design stages.

44. Clause E1.6 – Portable Fire Extinguishers

Portable fire extinguishers are to be installed in accordance with clause E1.6 and AS 2444. This includes the provision of type E fire extinguishers to nurse and staff stations.

45. Clause E1.8 – Fire Control Centre

Fire Control Centre: A fire control centre is to be provided based on the total building floor area comprising more than 18,000m². A fire control centre must:

- + Be located in a building so that egress from any part of its floor to a public road or open space does not involve changes in level which in aggregate exceed 300mm.
- + Provide an area from which fire-fighting operations or other emergency procedures can be controlled. Must not be used for any other purpose.

Whilst not required, the proposed fire control centre will be located in a dedicated room. The location for the fire control centre has not yet been resolved.

Details demonstrating compliance will need to be provided along with the Detailed Design Phase accordingly.

46. Clause E2.2 – Smoke Hazard Management

Mechanical Air Handling Systems

Any air-handling system which does not form part of the Zone Smoke Control System (other than non-ducted systems with a capacity not more than 1000 litres/second, systems serving critical treatment areas and miscellaneous exhaust air system installed in accordance with Sections 5 and 6 of AS/NZS 1668.1) must shut down automatically on the activation of the Automatic Fire Detection & Alarm System and Automatic Fire Suppression System.

Stair Pressurisation will be provided in the fire isolated stairways noting the 9a classification of the building. The pressurisation system shall be designed in a manner which will future proof any potential additions to the subject building.

It is understood that there are no pandemic rooms which require consideration from a fire services and mechanical perspective. This will need to be confirmed.

Important Note: Having regards to the multideck carpark the building currently has an effective height less than 25m in effective height. this effective height will be reviewed to ensure the building remains under 25m in subsequent design stages where exceeding 25m additional fire safety measures will be required.

Automatic Fire Detection & Alarm System

An Automatic Fire Detection & Alarm System is required to be installed throughout the building in accordance with AS 1670.1 - 2018. Photoelectric type smoke detectors are required to be installed in patient care areas and in paths of travel to exits from patient care areas.



Thermal detectors may only replace smoke detectors in areas **other than patient care areas and paths of travel to exits from patient care areas** where the use of the area is likely to result in smoke detectors causing spurious signals.

Manual call points are required to be installed in evacuation routes so that no point on a floor is more than 30m from a manual call point. Manual call points are to be provided in all locations as per the requirements of AS 1670.4

The Fire Indicator Panels within the building will need to have the capacity and be configured in a manner that they serve the entire hospital building and identify an alarm anywhere in the building (being the new extension and existing building) and provide audible warnings to all parts of the building of an alarm.

Alternative Solution: Where it is proposed to omit EWIS speakers from theatres and/or reduce the volume within ward areas and Safe Assessment Rooms and the like will need to be addressed in the FER.

A Dedicated fire control room is not required based on the current design of the proposed building. At a minimum the main panels for the new building can be located in a fire control centre, which can simply be the main entry for the building. The fire services contractor is to ensure the required spacing around the new panels complies with the relevant requirements of the BCA/AS.

Important Note: Having regards to the health hub, a detection and alarm system will likely be required where the current layout is not amended to achieve complaint travel distances. In this regard, this will need to be resolved during the Detailed Design phase.

47. Part E3 – Lift Installations

Lifts to comply with BCA Part E3. The building is required to have two emergency lifts serving each storey served by two or more lifts.

Where two emergency lifts must be provided to a storey, these must be contained within separate fire-resisting shafts unless located at separate banks. Details demonstrating compliance with the requirements of this clause will need to be provided as the design develops.

Important Note: Having regards to the multideck carpark the building currently has an effective height less than 25m in effective height. As such emergency lifts will not be required. This effective height will be reviewed to ensure the building remains under 25m in subsequent design stages.

48. Clause E4.2 – Emergency Lighting

Emergency Lighting is required throughout the building in accordance with AS 2293.1 -2018

49. Clause E4.5 – Exit Signs

Exit signs are to be installed throughout the building in accordance with AS 2293.1 -2005 in the following locations:

- + Doors providing direct egress from a storey to a fire isolated stairway or passageway;
- + Doors providing egress from a fire isolated stairway or passageway to open space;
- + Horizontal exit doors;
- + Fire Safety Doors (i.e. fire/smoke doors) separating compartments;
- + Doors leading directly to open space;
- + Doors leading from balcony areas, courtyards etc. back into the building; and
Above doorways in a path of travel where the location of the exit is not clear

50. Clause E4.6 – Directional Exit Signs

Directional exit signs are to be installed throughout the building where the exits are not readily apparent to occupants in accordance with AS 2293.1 -2018.

Note: -

It is the absolute responsibility of the design consultant to nominate the exact location of the required directional exit signs throughout the building in accordance with AS2293.1-2018 having regard to bulk heads, ceiling mounted signage & annunciators, etc.

We will expect not less than two directional exit signage to be visible for all occupants to the degree necessary to ensure all occupants understand the location of alternative exits throughout.

51. Clause E4.9 – Emergency Warning and Intercom System

The Class 9a parts of the building is required to be provided with an Emergency warning and intercom system installed throughout the entire building.



Note: -

Speakers are required to be provided to all external courtyards, terraces etc where occupants are required to enter back into the building in order to evacuate.

Alternative Solution: Where it is proposed to remove EWIS speakers from theatres and/or reduce the volume within ward areas and Safe Assessment Rooms and the like will need to be addressed in the FER.



SECTION F – HEALTH & AMENITY

52. Clause F1.0 – Waterproofing & Sub Sills

Waterproofing, wet area membranes and external wall flashing systems are to be documented and installed in accordance with BCA and related standards.

In particular, drainage sub sill systems are to be designed and provided in all locations to external balconies, patios, terraces and set downs in accordance with BCA. Details will be required at the CD documentation stage.

53. Performance Requirement FP1.4

A roof and external wall (including openings around windows and doors) must prevent the penetration of water that could cause:

- a) Unhealthy or dangerous conditions, or loss of amenity for occupants; and
- b) Undue dampness or deterioration of building elements.

Note 1: There are no Deemed-to-Satisfy provisions for this Performance Requirement in respect to External Walls.

Note 2: Refer to Clause F1.5 for roof coverings.

A Design statement and documentation Performance Solution is to be provided with the Construction Certificate application, either by using the Verification Methods in Clause FV1 or by way of Expert Judgement.

54. Clause F2.3 – Sanitary Facilities

Required Sanitary Facilities

Sanitary facilities are required to be provided in accordance with the requirements for a Class 9a healthcare facility. Sanitary facilities are only required to be counted for patients and staff, however facilities for visitors in the patient care areas is recommended.

Minimum number of facilities for staff and patients is outlined below.

Additional facilities will need to be provided for the ancillary areas including café, retail, community areas and the like.

Sanitary Facilities – <u>Class 9 Employees</u>						
	Closet Pans		Urinals		Washbasins	
	Required	Proposed	Required	Proposed	Required	Proposed
Male	1 – 20	1	1 – 10	0	1 – 30	1
	>20	Add 1 per 20	11 – 25	1	>30	Add 1 per 30
			26 – 50	2		
			>50	Add 1 per 50		
Female	1 – 15	1	-	-	1 – 30	1
	> 15	Add 1 per 15	-	-	>30	Add 1 per 30

Sanitary Facilities – <u>Class 9 Patients</u>						
	Closet Pans		Urinals		Washbasins	
	Required	Proposed	Required	Proposed	Required	Proposed
Male	1 – 16	2			1 – 8	1
	>16	Add 1 per 8			>8	Add 1 per 8
Female	1 – 16	2			1 – 8	1
	> 16	Add 1 per 8			>8	Add 1 per 8

The following facilities are also required to be provided:

- + A kitchen and food preparation area, or area for the reheating of food.
- + Laundry facilities, or an area for the dispatch and receiving of laundry.
- + One shower for every 8 patients or part thereof.

Important Note: Staffing/patient numbers will need to be confirmed and provided to BM+G for review and comment against the requirements above. The architect is to obtain the projected staffing levels and provide evidence that sufficient sanitary facilities have been provided.

The design should allow for the following for members of the public on each level of the building.

- + A unisex accessible sanitary compartment
- + A male ambulant sanitary compartment
- + A female sanitary compartment.



Required Sanitary Facilities – staff 9b and 5

Facilities for Staff						
User Group	Closet Pans		Urinals		Washbasins	
	Design Occupancy	Number	Design Occupancy	Number	Design Occupancy	Number
Male Employees	1-20	1	1-10	0	1-30	1
			11-25	1		
	>20	Add 1 per 20	26-50	2	>30	Add 1 per 30
			>50	Add 1 per 50		
Female Employees	1-15	1			1-30	1
	> 15	Add 1 per 15			> 30	Add 1 per 30
	> 16	Add 1 per 16			> 8	Add 1 per 8

55. Clause F2.4 – Accessible Sanitary Facilities

Unisex Accessible WCs (Accessible WC) must be provided in accordance with the following:

- + Minimum 1 on every storey containing sanitary compartments; and
- + Where a storey has more than 1 bank of sanitary compartments containing male and female sanitary compartments, at not less than 50% of those banks.
- + Within each bank of male and female sanitary facilities, an ambulant sanitary compartment must be provided for each sex for use by a person with an ambulant disability.

Where two or more Accessible WCs are provided, the number of left and right handed mirror image facilities must be provided as evenly as possible.

Important Note: Separate male and female ambulant facilities are required

56. Clause F2.8 – Waste Management

In class 9a areas at least one slop hopper or other device must be provided on any storey containing ward areas or bedrooms and must have a flushing apparatus, tap and grating.

57. Clause F3.1 – Height of Rooms

The floor to ceiling heights throughout shall comply with the following:

- + in operating theatres– 3000mm
- + in a patient care area, treatment room, clinic, waiting room, passageway, corridor or the like – 2400mm; and
- + Bathroom, shower room, sanitary compartment, airlock, tea preparation room, pantry, store room or the like must achieve a minimum height of 2.1m.
- + Egress stairways – 2.0m.

Ensure also that any requirements of the AHFGs are addressed as required.

58. Clause F4.1 – Natural Lighting

Natural lighting must be provided to all rooms used for sleeping purposes in a Class 9a building. Windows providing natural light. A window which is required for the purposes of providing natural light must be located no less than 3m from an allotment boundary, a wall of the same building, or a wall of another building on the same allotment.

It is noted the building incorporates some staff accommodation/overnight rooms. Details demonstrating compliance having regards to natural light will be required as part of the Detailed Design stage.

59. PART G3

60. Clause G3.1 – Application of Part

Based on discussions with the project team, it is noted that there are no atriums to which this clause would apply noting the proposed atriums do not exceed two storeys and or three storeys where one of the storeys is situated at a level where there is direct egress to road or open space. Furthermore, the various courtyard spaces are understood to be internal courtyards only and not enclosed at the top of the courtyard. This will need to be confirmed as it is understood the location of voids including adjacent to stair voids is under refinement.

Important Note: The atrium configuration will be subject to further review as the design is developed it is noted the design is still in the process of being finalised in this regard. Further consultation with BM+G will be required to confirm the applicability of Part G3.



61. G3.2 – Dimensions of atrium well

An atrium well must have a width throughout the well that is able to contain a cylinder having a horizontal diameter of not less than 6m.

62. G3.3 Separation of atrium by bounding walls

An atrium must be separated from the remainder of the building at each storey by bounding construction walls set back not more than 3,5m from the perimeter of the atrium well except in the case of the walls at no more than 3 consecutive storeys

63. G3.4 Construction of bounding walls

Bounding walls must-

- (a) have an FRL of not less than 60/60/60 and comply with sub-clauses G3.4(a)(i) & (ii); or.
- (b) be constructed of fixed toughened safety glass, or wired safety glass in non-combustible frames and comply with sub-clauses G3.4(b)(i) to (iii).

Note: See Figure G3.4 in the Guide to the BCA – examples of bounding walls complying with G3.4.

64. G3.5 Construction at Balconies

If a bounding wall separating an Atrium from the remainder of the building is set back from the perimeter of the atrium well, a balustrade or other barrier that is imperforate and non-combustible and not less than 1m high must be provided.

65. G3.6 Separation at Roof

In an atrium-

- + The roof must have the FRL prescribed in Table 3 of Specification C1.1; or
- + The roof structure and membrane must be protected by a sprinkler system complying with Specification E1.5.

66. G3.7 – Means of egress

All areas within an atrium must have access to at least 2 exits.

67. G3.8 Fire and Smoke control systems

Sprinkler system, smoke control, fire detection and alarm systems and sound systems and intercom system must be installed in compliance with Specification G3.8.

68. Spec G3.8 – Fire and Smoke Control Systems in buildings containing atriums

This specification sets out the requirements for the design and operation of systems of fire and smoke control in buildings containing an atrium.

SECTION J – ENERGY EFFICIENCY

69. Parts J1 – J8

Note that the proposed provisions of BCA 2019 in relation to Section J (ESD) will have a transitional period of 12 months, within which time the design can use either current (BCA 2016) or the new (BCA 2019) requirements to comply with Section J.

Based on discussions with the project team, it is understood that the tender invitation for the main works package will be provided prior to 1 May 2020 and for the purpose of Section J it is noted that the BCA 2016 will apply based on the transitional period. Where the tender invitation is later than 1 May 2020 the BCA 2019 section J provisions will apply/.

If the proposed does will not comply with the DTS provisions of the BCA, then a JV3 Assessment will be required to be undertaken.

GENERAL

70. Bushfire

Bushfire report will need to be provided by the projects bushfire consultant and recommendations will need to be included into the design accordingly. Particular attention will need to be paid to any additional fire fighting equipment that may be



required by RFS such as external hydrants and the like. In this regard, all services consultants will need to ensure compliance is achieved with details demonstrating compliance to be provided as the design develops.

71. Helipad Design

Having regards to the proposed helipad early consideration is to be given to the following as part of the design development

- + Aviation consultant will need to be consulted with having regards to the proposed design and is to provide advice with respect of relevant helipad design guidelines,
- + FRNSW is to be consulted with and design is to adopt requirements with respect of minimum fire fighting equipment,
- + The design will need to comply with HI design guidelines associated with helipads.

Egress arrangement from the proposed helipad will need to be confirmed. Where it is proposed to have a non-fire isolated stair serving the helipad this will need to be rationalised by the projects fire safety engineer.

72. Pandemic Zones

It is understood that Pandemic zones are not part of the current brief for the TVH project.

In the event however that Pandemic Zones may be provided, there is likely to be implications in relation to fire safety which may need to be considered. Examples include:

- (a) Egress arrangements may need to be reviewed to mitigate the need to pass through these areas in the event of horizontal evacuation; and
- (b) Zone smoke control and shut down systems may need to be programmed and or provided on isolated systems to mitigate risk of spread / transfer of airborne disease to other parts of the hospital or to outside atmosphere. Pressurising a pandemic zone / compartment to achieve the minimum 20Pa pressure differential at the compartment doors is a great example of how airborne disease could be mechanically forced to spread out of the seclusion zone into adjoining compartments; and
- (c) Brigade intervention strategies may need to be prepared to prevent FRNSW passing through pandemic zones – may require location of the zones away compartments that contain stairways or provide specific airlocks to the stairway entries.

As a result of such potential Pandemic Zones, they would likely trigger additional fire engineered performance solutions.



SUMMARY OF FIRE ENGINEERING ITEMS

The below is a preliminary list of potential fire engineered solution that may be proposed or are foreseeable based on the current design documentation. This list will be further developed with the design.

- | | | |
|-----|------------------------------------|--|
| 1. | C1.1 | <ul style="list-style-type: none"> + Smoke sealing of slab edge at the curtain wall construction in lieu of fire sealing. + Reduction in FRL's to class 6 part from 180 to 120min. <p>Note: Structural engineer to confirm location of any structural elements particularly steel columns and the like which will not comply with the requirements of Spec C1.1. Once confirmed opportunity for rationalization under FER TBC.</p> |
| 2. | Spec C3.4 / D2.20 | <ul style="list-style-type: none"> + To permit fire and smoke doors to only swing in one direction in certain instances where egress requires them to swing in both directions. |
| 3. | C2.5 | <ul style="list-style-type: none"> + Oversized fire and smoke compartments in treatment and ward areas. A full review will be undertaken once fire and smoke compartmentation plans are prepared. Generally exceedances of up to 10% above DtS will be considered on a case-by-case basis. |
| 4. | C3.3 | <ul style="list-style-type: none"> + Rationalise protection of openings between adjacent fire compartments. |
| 5. | C3.11 | <ul style="list-style-type: none"> + Rationalisation of bounding construction requirements to on call staff accommodation area. |
| 6. | C3.15 | <ul style="list-style-type: none"> + Medical gas penetrations within fire rated elements. |
| 7. | D1.4 / D1.5 | <ul style="list-style-type: none"> + To justify excessive distances to a point of choice. + To justify excessive distances to an exit. + To justify excessive distances between exits. <p>Note: Departures to be considered on a case-by-case basis once the design develops.</p> |
| 8. | D1.7 | <ul style="list-style-type: none"> + To <i>potentially</i> justify not protecting external walls within 6m of the path of discharge of fire-isolated exits based on the provision of alternative paths of discharge in opposite directions. + Access to fire isolated stairways being directly from plant room in lieu of corridor or the like. |
| 9. | D1.12, G3.2, G3.3 Spec G3.8 | <p>Rationalisation of the non-fire isolated connecting stairway and atrium:</p> <ul style="list-style-type: none"> + Smoke exhaust rate + The atrium space will not be provided with bounding walls set back by no more than 3.5m from the perimeter of the atrium. + The atrium well will not have a 6 m width throughout. + Balconies within the atrium will be glass, rather than non-combustible. + TBC – During design finalization. |
| 10. | D1.3/D1.8 | <ul style="list-style-type: none"> + Egress from the helipad via an external stair in a case where a fire isolated stairway |
| 11. | D1.10 | <ul style="list-style-type: none"> + Steps located within a path of travel from the discharge of the required exits and the road connected |
| 12. | D1.11 | <ul style="list-style-type: none"> + Discharge of horizontal exits into fire compartments without an exit stairway. |
| 13. | D1.12 | <ul style="list-style-type: none"> + Non-required stairway connecting a number of storeys |
| 14. | D2.15 | <ul style="list-style-type: none"> + Steps located at the door threshold into the fire isolated stairways at the plant room |
| 15. | D2.19 | <ul style="list-style-type: none"> + To allow sliding doors in patient care areas. |
| 16. | D2.21, Ep2.2 & E4.9 | <ul style="list-style-type: none"> + Rationalization of door hardware, occupant warning and detection to Safe Assessment Rooms – (TBC) |
| 17. | E1.3 | <ul style="list-style-type: none"> + Location of booster assembly |
| 18. | E1.4 | <ul style="list-style-type: none"> + To <i>potentially</i> justify fire hose reel coverage not being provided to certain rooms which are isolated by smoke/fire separating construction. |
| 19. | E1.5 | <ul style="list-style-type: none"> + Omission of sprinklers to equipment rooms which are sensitive to water in the event of discharge (TBC in consultation with LHD) + RTI of recessed sprinkler head s (TBC) + Use of an electronic fire sprinkler bell in lieu of water alarm |
| 20. | E4.9 | <ul style="list-style-type: none"> + Decrease of speak volume within ward treatment, OT and SAR areas |



D. CONCLUSION

This report contains a BCA2019 assessment of the SSDA documentation prepared by STH Bates Smart for the proposed new Tweed Valley Hospital.

The report also includes accessibility assessment against the Access to Premises Standard 2010, which encompasses DDA design obligations.

Arising from our assessment we are satisfied that the project design can readily satisfy the requirements of the BCA2019.

The proposed works will be subject to further review as the design progresses. The compliance issues that will necessitate specific focus during the design development will relate to egress strategies and fire compartmentation.



APPENDIX 1 – ACCESS / DDA ASSESSMENT REPORT



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Job No: IAC-891

Sunday, 22 September 2019

BLACKETT MAGUIRE + GOLDSMITH
PO BOX 167,
BROADWAY NSW 2007

Reference: **SSD2 ACCESS REPORT**
TWEED VALLEY HOSPITAL

Attention: Mr David Blackett

Dear Sir

Thank you for inviting iAccess Consultants to prepare this Access Report for the Tweed Valley Hospital Project for Health Infrastructure NSW.

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

This report is in response to the General Arrangement Plans set provided and therefore makes no specific commentary on interior fitouts or the like, but rather is a preliminary report detailing general accessibility requirements and information for the design team.

Detailed documentation addressing the specific details and requirements of the access legislation, codes and standards will need to be documented within the Construction Documentation phase.

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

Yours sincerely,

RICHARD SEIDMAN

M.ProgDev, BArch (Hons), Diploma in Access
ARB Reg No 4829,
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ACCESS REPORT SSD2

TWEED VALLEY HOSPITAL CUDGEN ROAD KINGSCLIFF NSW 2487



Prepared by

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Revision [C]
22 September 2019

Document Control

Project: Tweed Valley Hospital
Cudgen Rd
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Document Type: Access Report – SSD2
Report Number: IAC-891

The following report register documents the development and issue of this and each subsequent report(s) undertaken by iAccess Consultants.

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Revision History:

Rev	Remarks	Issue Date
	Preliminary Access Report prepared and issued to client	4 February 2019
A	Preliminary Access Report prepared and issued to client	13 August 2019
B	Access Report prepared and issued to client	19 August 2019
C	Access Report revised and issued to client	19 August 2019

Authorisation and Sign-off by:



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Abbreviations

The following abbreviations are employed in this Checklist:

ACAA	Association of Consultants in Access Australia
AS	Australian Standard
BCA	Building Code of Australia
NCC	National Construction Code
Dts	Deemed to satisfy
CAPT	Continuous Accessible Path of Travel
GPO	General Power Outlet
USAT	Unisex Accessible Sanitary Toilet
AFFL	Above Finished Floor Level
TGSI	Tactile Ground Surface Indicator
PPE	Principal Pedestrian Entrance
DAPB	Designated Accessible Parking Bay

Legend

The following list of differing colour toning are indicators of access compliance throughout this report:

	Compliant
	Not Compliant
	Information to be provided during Detailed Design and addressed in the Detailed Design Report.

Examples of these compliance summaries include:

Compliance:	An accessible path of travel is provided from the set-down point to the Principal Pedestrian Entry to the event.
Compliance:	Door circulation zones are not compliant. Ensure door latch-side clearance achieves a minimum of 530mm.
Compliance:	The doorways luminance contrast levels is not able to be assessed. Information is to be provided.

Lines that are written in red and highlighted in yellow (like this line of text) indicate an item that either requires action by the project team or an item that requires attention at the next design phase.

1 EXECUTIVE SUMMARY

This SSD2 Access Report has been prepared at the request of Health Infrastructure to provide commentary on the SSD2 Drawing Package Set (draft 2.1) prepared for the Tweed Valley Hospital located at Cudgen Rd, Kingscliff NSW.

The purpose of this Access Report is to highlight and review key accessible topics as they relate to design elements of the proposed development at this SSD design stage.

The key accessible areas are mainly in relation to the requirements of the NCC Section D, Access and Egress and AS1428.1:2009 Design for access and mobility.

As our consultancy at this stage is in response to a concept design, the information contained within this report is general in nature.

A detailed access assessment of the facility will need to be undertaken at each stage of the project delivery process.

The information provided in this report provides information to the design team to ensure that the accessibility legislative framework is satisfied.

Note: Specific attention is directed to the allocation of accessible WC facilities for staff and patients as well as the allocation of ambulant WC facilities at each level of the building. Presently it is not possible to ascertain if compliance has been achieved.

1.1 Project Scope

The new Tweed Valley Hospital will be a purpose-built health facility delivering health services at predominantly Role Delineation Level 5 to residents of the Tweed and Byron Local Government Areas (LGA) and the remainder of the hospital's catchment including visitors to the Tweed Valley.

The Tweed Valley Hospital will provide expanded Emergency Department services, operating theatres and surgical services, intensive care and rehabilitation services, increased capacity in medical and surgical beds, and a boost to ambulatory care services. It will also provide communities with more specialised health services, such as radiation oncology and cardiac catheterisation, closer to home, and expanded renal services to address the increasing incidence of chronic kidney disease in the Tweed Valley.

A range of innovative and efficient building solutions will be explored as the planning progresses, including the opportunity to provide workspace, education and ambulatory care spaces in different classes of building.

The new facility will be planned to accommodate over 350 beds and include culturally appropriate spaces to meet the needs of Aboriginal and Torres Strait Islander people and the needs of the resident and visiting community.

The concept design proposes the following general layout of the main hospital building:

Sub-Basement:

- Plant

Basement

- Food Services
- Management Unit
- Clinical Info. Unit
- Environmental Services
- Eng. & Biomed

- Electrical Plant
- Electrical Plant
- Mortuary
- Services Yard & Dock

Lower Ground

- Ambulance Set Down
- Emergency Unit
- Satellite Imaging
- Pharmacy

- Pathology Unit
- Staff Amenities
- Mental Health Unit
- Drug & Alcohol Unit
- Plant rooms
- Public Carpark

Ground

- Imaging Unit
- Ambulatory Unit
- Front of House area & Café
- Radiation Oncology Unit
- Renal Unit
- Retail tenancy
- Terrace, courtyards

Level 01

- Perioperative Unit
- Plant
- Special Care Nursery
- Maternity IPU

Level 02

- Shared Support/ Admin
- Plant
- CSSD
- Rehab IPU
- Child & Adolescent Unit
- Older Persons/ Gem IPU

Level 03

- Shared Support/ Admin
- ICU/COU
- Plant
- CCU / Cardiac IPU
- IPU Med

Level 04-05

- Shared Support/ Admin

- IPU Surgery
- IPU Med.

Level 06

- Plant

Level 07

- Helipad

A multi-level carpark is proposed to the south-west of the main hospital building providing 1402 parking spaces inclusive of 34 accessible parking spaces.

The site also proposes a two-level health hub building located South-East of the main hospital. The facilities include:

- Meeting and staff rooms
- Library
- Workspaces
- Teaching & Skills Rooms
- Interview Rooms
- Consult Rooms
- Store, Mech & Plant Rooms
- Amenities

The proposed works also includes a proposed Prototype Skills Centre (PSC) on the Ground Floor, located East of the main hospital building. The PSC includes:

- Staff & Meeting Rooms
- Lecture Rooms
- Patient Rooms with Ensuite
- Shared Amenities

1.2 Access Declaration

This report confirms that the provisions for compliance with the accessible requirements nominated in the Disability (Access to Premises – Building) Standard 2010 are capable of being achieved. Compliance with the access provisions will need to be demonstrated through each stage of the development process.

1.3 Building Classification

The NCC classification for this Development is: *Class 9a - A health-care building*

1.4 Performance Solutions

The proposed presently design does not presently rely upon any performance solutions.

1.5 Equitable Egress Strategy - NCC Clauses DP4 & DP6

An NCC Deemed to Satisfy solution addressing egress from a building will need to be assessed at a later design stage.

1.6 NCC Clause D3.4 Concession

The NCC Clause D3.4 notes a concession for accessibility to particular areas/rooms:

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

The building has several rooms of which the NCC D3.4 concession applies:

- Plant rooms
- Storerooms
- Clean and dirty utility rooms
- Equipment stores
- Cleaners areas
- Rooms where access is only permitted by specialist technicians.

1.7 Architecture Documentation

This Access Report references the following architectural documentation:

Dwg No	Title	Revision
AR-STH-DWG-SSD-000	BLOCK & STACK PLAN SITE	7
AR-STH-AR-DWG-SSD-001	BLOCK & STACK PLANS BASEMENT	5
AR-STH-AR-DWG-SSD-002	BLOCK & STACK PLANS LOWER GR	5
AR-STH-AR-DWG-SSD-003	BLOCK & STACK PLANS GROUND	5
AR-STH-AR-DWG-SSD-004	BLOCK AND STACK PLANS LEVEL 01	5
AR-STH-AR-DWG-SSD-005	BLOCK AND STACK PLANS LEVEL 02	5
AR-STH-AR-DWG-SSD-006	BLOCK AND STACK PLANS LEVEL 03	5
AR-STH-AR-DWG-SSD-007	BLOCK AND STACK PLANS LEVEL 04	3
AR-STH-AR-DWG-SSD-008	BLOCK AND STACK PLANS LEVEL 05	3
AR-STH-AR-DWG-SSD-009	BLOCK AND STACK PLANS LEVEL 06	4
AR-STH-AR-DWG-SSD-010	BLOCK AND STACK PLANS LEVEL 07	4

The following documents issued on 15/08/19 were also reviewed for this Access Report revision:

Dwg No	Title	Revision
STB-AR-SKE-PRW-0000001	Drawing Register	2
STB-AR-SKE-PRW-1000015	Site Proposed Plan	2
STB-AR-SKE-PRW-8100001	Eastern Carpark	2
STB-AR-SKE-HUB-2000001	Health Hub Ground Level	1
STB-AR-SKE-HUB-2001001	Health Hub Level 01	1
STB-AR-SKE-MCP-20B3001	Multi-Deck Carpark Basement 3	1
STB-AR-SKE-MCP-20B2001	Multi-Deck Carpark Basement 2	1
STB-AR-SKE-MCP-20B1001	Multi-Deck Carpark Basement 1	1
STB-AR-SKE-MCP-2000001	Multi-Deck Carpark Ground Level	1
STB-AR-SKE-MCP-2001001	Multi-Deck Carpark Level 01	1
STB-AR-SKE-MCP-2002001	Multi-Deck Carpark Level 02	1
STB-AR-SKE-MCP-2003001	Multi-Deck Carpark Level 03	1
STB-AR-SKE-MCP-2004001	Multi-Deck Carpark Level 04	1
STB-AR-SKE-MCP-2005001	Multi-Deck Carpark Level 05	1
STB-AR-SKE-MCP-2006001	Multi-Deck Carpark Level 06	1
STB-AR-SKE-MCP-2007001	Multi-Deck Carpark Level 07	1
STB-AR-DWG-PSC-2200001	PROTOTYPE SKILLS CENTRE GF Plan	1

1.8 Documents to be relied upon

At the completion of the delivery of this project the Access Design Statement required for the issue of the Occupation Certificate will be reliant on the following documents:

- Lift certification provided by relevant lift company indicating compliance with the provisions of AS1735.12
- Slip resistance certification issued by the respective floor finishes manufacturers indicating compliance with NCC Table D2.14 and Australian Standard HB198.
- Documentation provided by the sign supplier indicating Braille Tactile signage is compliant with the provisions of NCC Specification D3.6
- Confirmation of compliant lighting levels
- Confirmation of the provision TMV in sanitary facilities
- Evidence of wall strengthening for the installation of grab rails associated with the accessible WC and shower facilities.

2 Statutory framework

The legislation addressing accessibility is documented in the following Act, Code and Standards:



2.1 Disability Discrimination Act 1992

Section 23 of the Disability Discrimination Act 1992 states:

It is unlawful for a person to discriminate against another person on the ground of the other person's disability:

- by refusing to allow the other person access to, or the use of, any premises that the public or a section of the public is entitled or allowed to enter or use (whether for payment or not); or*
- in the terms or conditions on which the first-mentioned person is prepared to allow the other person access to, or the use of, any such premises; or*
- in relation to the provision of means of access to such premises; or*
- by refusing to allow the other person the use of any facilities in such premises that the public or a section of the public is entitled or allowed to use (whether for payment or not); or*
- in the terms or conditions on which the first-mentioned person is prepared to allow the other person the use of any such facilities; or*
- by requiring the other person to leave such premises or cease to use such facilities.*

The Disability Discrimination Act 1992 is complaints-based legislation and the Commissioner once having heard and assessed the level of discrimination may issue orders to rectify.

2.2 Legislative Framework

- Disability Discrimination Act 1992
- Disability (Access to Premises - Buildings) Standards 2010 (DDA 1992)
- National Construction Code (BCA 2019)
- AS1428.1:2009 Design for access and mobility - General requirements for access - New building work
- AS1428.2:1992 Design for access and mobility - Enhanced and additional requirements - Buildings and facilities
- AS1428.4.1:2009 Design for access and mobility - Means to assist the orientation of people with vision impairment - Tactile ground surface indicators
- AS1428.5:2010 Design for access and mobility - Communication for people who are deaf or hearing impaired
- AS1680.2.1:2008 Interior and workplace lighting - Specific applications - Circulation spaces and other general areas
- AS1735.12:1999 Lifts, escalators and moving walks - Facilities for persons with disabilities
- AS2890.6:2009 Parking facilities - Off-street parking for people with disabilities
- HB198:2014 Guide to the specification and testing of slip resistance of pedestrian surfaces

3 ACCESS REPORT

3.1 Access Report Preamble

The Access Report following has adopted the headings of the Disability (Access to Premises) Standard 2010. The Standard provides a framework for analysis and when coupled with the technical provisions of the Building Code of Australia and the provisions of Australian Standards AS1428. Australian Standards provide certainty and direction to address accessibility compliance.

3.2 Continuous Accessible Paths of Travel

NCC Reference:	D3.2 Access to buildings D3.3 Parts of buildings to be accessible
Australian Standard Reference:	Clause 6 (Continuous Accessible Paths of Travel) of AS1428.1 2009 AS 1428.4.1 2009 Design for access and mobility - Means to assist the orientation of people with vision impairment

3.2.1 Preamble

This section discusses Continuous Accessible Paths of Travel (CAPT) throughout the internal and external areas of the development.

Drawing STB-AR-SKE-PRW-1000015 indicates the site plan for this project.

Drawing STB-AR-SKE-HUB-2000001 shows the ground floor, however we have not been provided with detailed information to assess compliance with the provision of an accessible path of travel from the across the boundary and to the front doors of this Hospital.

It has been assumed that the project team has assessed this requirement and that compliance is capable of being achieved.

3.2.2 CAPT – External areas

The external areas include a series of pathway systems that lead to the hospital entrances as well as the set-down entry to the Emergency Department.

Surrounding footpaths which connect the carparking and site boundaries to the building will also be assessed as part of the external areas.

Compliance: All proposed external pathways are to be outlined within the next design phase of the delivery process.

3.2.3 Kerbs

Any kerbs ramps present along any external paths of travel will need to comply with the requirements for kerb ramps. The requirements to be satisfied are noted with the Walkways, Ramps and Landings section of this report.

3.2.4 CAPT – Requirements to be satisfied

The requirements for Continuous Accessible Paths of Travel is noted in the National Construction Code at Clauses DP1 and D3.2:

A continuous accessible path of travel to accessible facilities will need to be provided to enable people to *'approach the building from the road boundary'* so that they can *'access work and public spaces, accommodation and facilities for personal hygiene'* in accordance with the requirements of **DP1** of the National Construction Code 2019tweed.

The NCC Clause **D3.2(a)** identifies that

An accessway must be provided to a building required to be accessible—

- i. from the main points of a pedestrian entry at the allotment boundary; and
- ii. from another accessible building connected by a pedestrian link; and
- iii. from any required accessible carparking space on the allotment.

3.2.5 Site

Tweed Valley Hospital is located on Cudgen Rd, Kingscliff NSW 2487.



Figure 1 –Google Maps Extract

3.2.6 Set-down Areas - General

A setdown set-down area is proposed at the Emergency Department entry on the Lower Ground Floor;

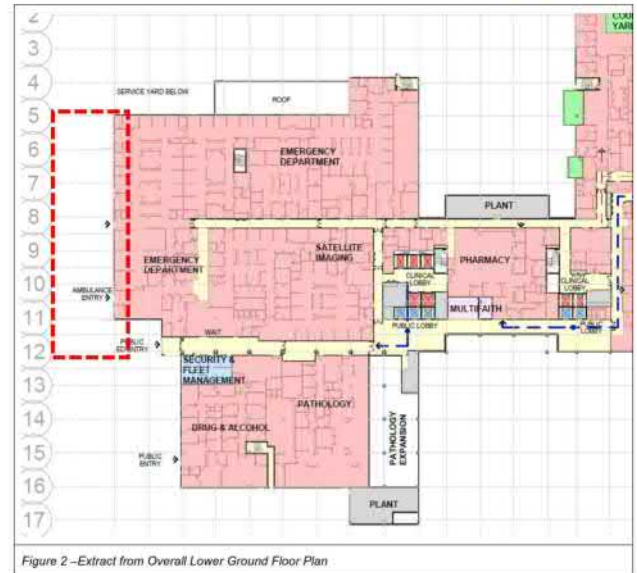


Figure 2 –Extract from Overall Lower Ground Floor Plan

3.2.7 Set-down Areas – Kerb and Gutter arrangement

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 zone will need to satisfy the provisions of AS2890.6:2009.

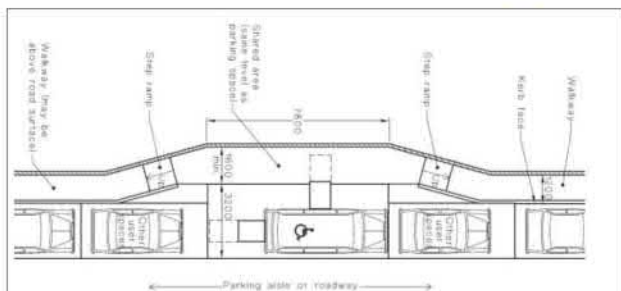


Figure 3 – Extract from AS2890.6 outlining accessible requirements for parallel parking.

3.2.8 Set-down Areas – Flush arrangement

If the set down is flush with the pavement, tactile indicators and bollards are required to be provided as per Figure 2.5B of AS1428.4.1:2009:

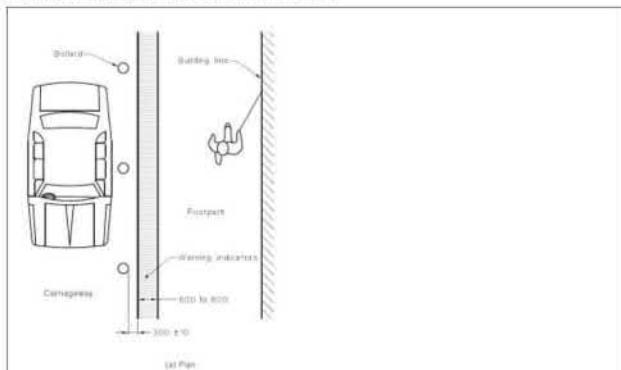


Figure 4 – Extract from AS1428.4.1:2009 – Figure 2.5B

For details on kerb ramp requirements refer to section Walkways, Ramps & Landings in this report.

Compliance: Information regarding the set-down area is to be provided at a later design phase.

3.2.9 Pavement Luminance Contrast

Where there is alignment between the pavement and driveway, as a minimum, the luminance contrast between the finishes will need to be 30%.

Compliance: Information to be provided at a later design stage.

3.2.10 Lighting Levels

The lighting level along paths of travel will need to achieve a minimum level of 150lx as noted at Clause 19 of AS1428.2:1992 or the minimum lighting levels noted at AS1680.

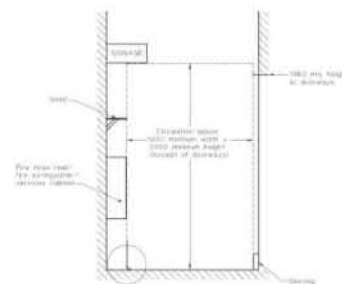
Compliance: The lighting levels are to be resolved during the CC phase.

3.2.11 Height and Width of Continuous Accessible Paths of Travel

The minimum unobstructed height of a continuous accessible path of travel shall be 2000mm or 1980mm at doorways.

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:

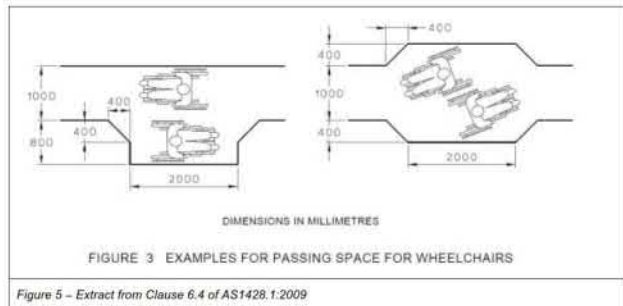
- Fixtures and fittings such as lights, awnings, windows that, when open, intrude into the circulation space, telephones, skirtings and similar objects.
- Essential fixtures and fittings such as fire hose reels, fire extinguishers and switchboards.
- Door handles less than 900 mm above the finished floor level.



Compliance: The plans provided are not provided with dimensions with which the drawings can be scaled and measured. Information to be provided at a later design stage.

3.2.12 Passing Spaces

Where the length of the Paths of Travel is longer than 20m, an 1800 x 2000mm passing bay is required to be provided in accordance with the provisions of Clause 6.4 of AS1428.1:2009.



Compliance: The plans provided are not provided with dimensions with which the drawings can be scaled and measured. Information to be provided at a later design stage.

3.2.13 Circulation Zones

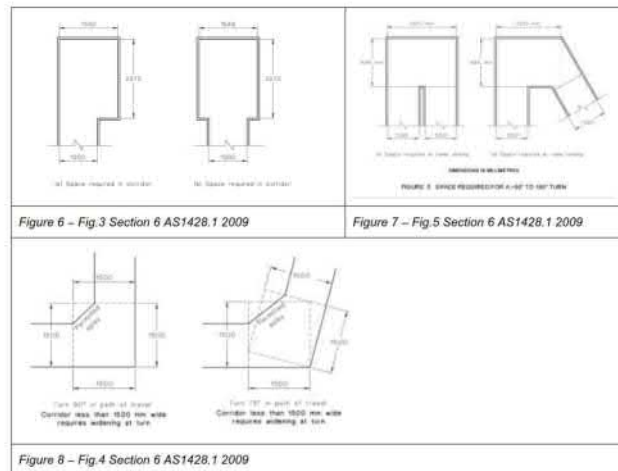
A minimum pathway of 1m width is required throughout all accessible areas.

NCC Clause D1.6(b)(ii) requires the minimum path of travel to an exit to be 1.8 m in a passageway, corridor or ramp normally used for the transportation of patients in beds within a treatment area or ward area.

Compliance: The plans provided are not provided with dimensions with which the drawings can be scaled and measured. Information to be provided at a later design stage.

3.2.14 Turn zones

The design also requires locations where a wheelchair user can make a 180deg turn (1540 x 2070mm) at corridor/pathway ends in accordance with the provisions of Fig. 5, Clause 6 of AS1428.1 2009 as well as 1500x1500 circulation zones where the path of travel changes direction.



Compliance: The plans provided are not provided with dimensions with which the drawings can be scaled and measured. Information to be provided at a later design stage.

3.3 Visual Indicators on Glazing

NCC Reference:	D3.2 Access to buildings D3.3 Parts of buildings to be accessible D3.12 Glazing to accessways.
Australian Standard Reference:	Clause 6.6 (Visual Indicators on Glazing) of AS1428.1 2009 AS 1428.4.1 2009 Design for access and mobility - Means to assist the orientation of people with vision impairment

3.3.1 Visual Indicators – Overview

The design of this hospital will likely incorporate locations where full height glazing is provided along accessible paths of travel. The locations where full height glazing may be proposed include but are not limited to:

- Entry airlocks to the main entry and ED
- Enclosures to waiting areas
- Fronts to office areas and cafes/retail tenancies
- Doorways

The detailed design may include for the application of applied films to wall and glass surfaces.

The detailing of any applied films to glazing will need to consider the requirements of Clause 6.6 of AS1428.1:2009.

Specific attention is directed to the background floor and wall colour so that the required 30% luminance contrast on both sides of the glazing can be achieved.

3.3.2 Visual Indicators – Requirements to be satisfied

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

Where there is no chair rail, handrail or transom, all frameless or fully glazed doors, sidelights, including any glazing capable of being mistaken for a doorway or opening, shall be clearly marked for their full width with a solid and non-transparent contrasting line. The contrasting line shall be not less than 75 mm wide and shall extend across the full width of the glazing panel. The lower edge of the contrasting line shall be located between 900 mm and 1000 mm above the plane of the finished floor level.

Any contrasting line on the glazing shall provide a minimum of 30% luminance contrast when viewed against the floor surface or surfaces within 2 m of the glazing on the opposite side.

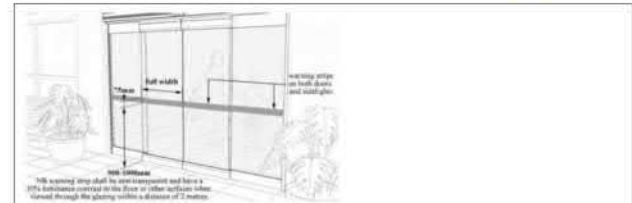
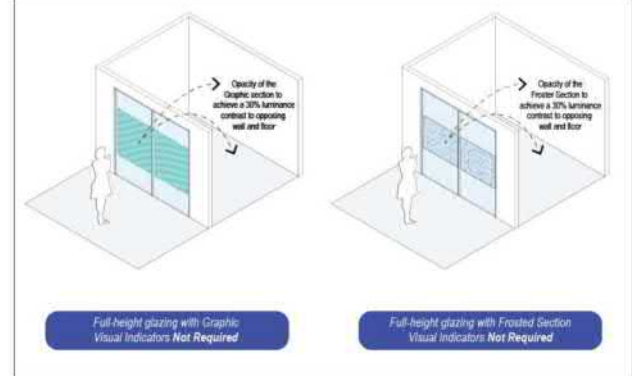
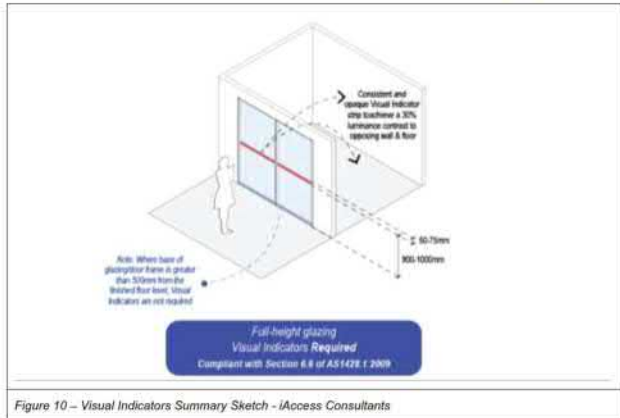


Figure 9 – Diag. 4 DE-IG02 2013





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



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

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



Compliance: Future documentation, at a later design stage, will need to be provided, detailing the application of Visual Indicators where full-height glazing is proposed to any wall or door.

3.4 Floor or Ground Surfaces

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

3.4.1 Slip Resistance

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

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

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

Location	NCC Table D2.14	HB198	Criterion Satisfied
Tread or landing surface	Dry P3/R10 – Wet P4/R11	Dry P3/R10 – Wet P4/R11	Not assessed at this design stage
Nosing	Dry P3 – Wet P4	Dry P3 – Wet P4	Not assessed at this design stage
Transition Areas, wards and corridors in hospitals.		P2/R9	Not assessed at this design stage
Wet area / sanitary facilities		P3/R10	Not assessed at this design stage

Compliance: Future documentation, at a later design stage, will need to be provided, detailing the various floor finishes and the respective slip-resistance ratings.

3.4.2 Carpet

The finishes schedule may propose carpet finishes within this development.

Note: any provision of Astro Turf falls under the finish requirements for carpet.

It will be necessary that the specification and application of the carpet satisfy the provisions of:

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

Clause 7.4.1 of AS1428.1:2009 states:

Where carpets or any soft flexible materials are used on the ground or floor surface—

- the pile height or pile thickness shall not exceed 6 mm and the carpet backing thickness shall not exceed 4 mm;*
- exposed edges of floor covering shall be fastened to the floor surface and shall have a trim along the entire length of any exposed edge; and*

- at the leading edges, carpet trims and any soft flexible materials shall have a vertical face no higher than 3 mm or a rounded bevelled edge no higher than 5 mm or above that height a gradient of 1 in 8 up to a total maximum height of 10 mm*

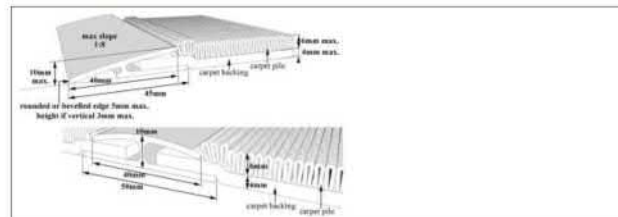


Figure 11 – Examples of carpet joints on an accessible path of travel

Compliance: Future documentation, at a later design stage, will need to be provided, detailing the specification of any carpet installation including confirmation of pile heights.

3.4.3 Floor transitions

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

Attention is drawn to any transitions onto outdoor areas throughout the hospital.

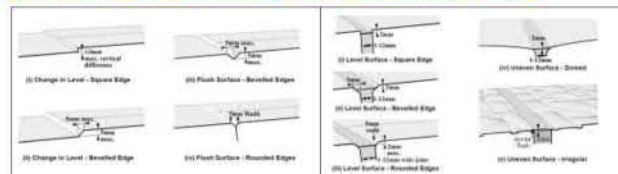


Figure 12 – diagrams indicating the acceptable tolerances between pavement finishes

Compliance: Future documentation will need to be provided, detailing the various floor finishes and their respective transitions.

3.4.4 Recessed Matting

The design may propose the installation of recessed matting.

The installation will need to satisfy the following requirements from Clause 7.4.2 of AS1428.1:2009

Matting recessed within a continuous accessible path of travel—

- (a) where of metal and bristle type construction or similar, its surface shall be no more 3 mm if vertical or 5 mm if rounded or bevelled, above or below the surrounding surface; and
- (b) where of a mat or carpet type material, shall have the fully compressed surface level with or above the surrounding surface with a level difference no greater than 3 mm if vertical or 5 mm if rounded or bevelled.

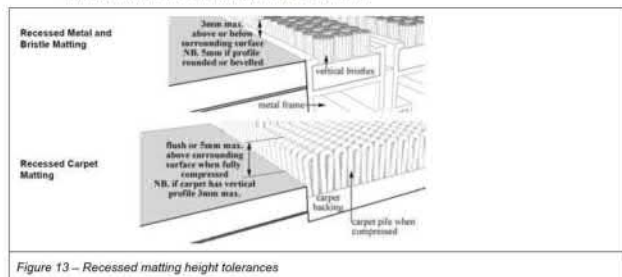


Figure 13 – Recessed matting height tolerances

Compliance: Future documentation, at a later design stage, will need to be provided, detailing the mat specifications.

3.5 Signage

The requirements are referenced in the following legislation:

NCC Reference: D3.2 Access to buildings
D3.6 Signage
Specification D3.6
D2.23 Signs on Doors

Australian Standard Reference: Clause 8 – Signage, AS1428.4.1 2009 Design for access and mobility - Means to assist the orientation of people with vision impairment
Clause 16 – Symbols, AS1428.4.2 1992 Design for access and mobility - Enhanced and additional requirements - Buildings and facilities
Clause 17 – Signs, AS1428.4.2 1992 Design for access and mobility - Enhanced and additional requirements - Buildings and facilities
DR AS1428.4.2-2017 Design for access and mobility – Wayfinding

3.5.1 Preamble

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

This section will reference the statutory signage requirements as well as general signage information.

3.5.2 Statutory Signage Requirements

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

In a building required to be accessible—

- (a) *braille and tactile signage complying with **Specification D3.6** must—*
 - (i) *incorporate the international symbol of access or deafness, as appropriate, in accordance with AS 1428.1 and identify each—*
 - (A) *sanitary facility, except a sanitary facility within a sole-occupancy unit in a Class 1b or Class 3 building; and*
 - (B) *space with a hearing augmentation system; and*
 - (ii) *identify each door required by E4.5 to be provided with an exit sign and state—*
 - (A) **"Exit"**; and
 - (B) **"Level"**; and either
 - (aa) *the floor level number; or*
 - (bb) *a floor level descriptor; or*
 - (cc) *a combination of (aa) and (bb); and*

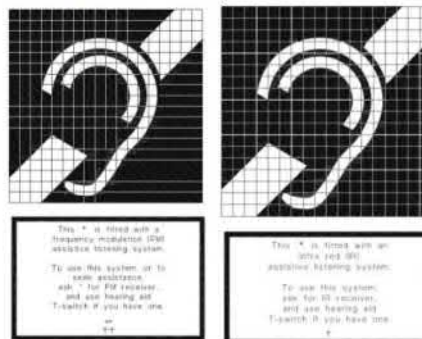
- (b) signage including the international symbol for deafness in accordance with AS 1428.1 must be provided within a room containing a hearing augmentation system identifying—
 - (i) the type of hearing augmentation; and
 - (ii) the area covered within the room; and
 - (iii) if receivers are being used and where the receivers can be obtained; and
- (c) signage in accordance with AS 1428.1 must be provided for accessible unisex sanitary facilities to identify if the facility is suitable for left or right-handed use; and
- (d) signage to identify an ambulant accessible sanitary facility in accordance with AS 1428.1 must be located on the door of the facility; and
- (e) where a pedestrian entrance is not accessible, directional signage incorporating the international symbol of access, in accordance with AS 1428.1 must be provided to direct a person to the location of the nearest accessible pedestrian entrance; and
- (f) where a bank of sanitary facilities is not provided with an accessible unisex sanitary facility, directional signage incorporating the international symbol of access in accordance with AS 1428.1 must be placed at the location of the sanitary facilities that are not accessible, to direct a person to the location of the nearest accessible unisex sanitary facility.



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

3.5.5 Hearing Augmentation Signage

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



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

3.5.6 Mounting Heights

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

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

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

3.5.3 Exit Signage

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

Examples of Braille Tactile Signage include:

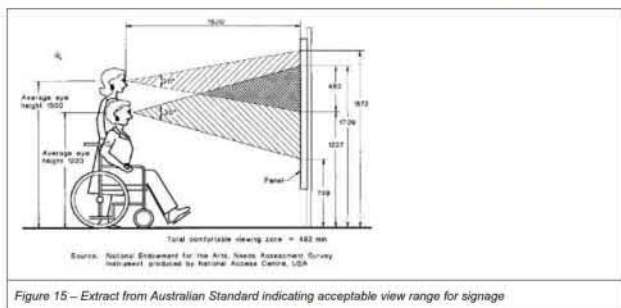
(Figure 14 – Examples of Braille Tactile Signage from www.brailletactilesigns.com.au)



3.5.4 WC Signage

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

Examples of Braille Tactile Signage include:



3.5.7 Luminance & Colour Contrast

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

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

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

Compliance: Future documentation, at a later design stage, will need to be provided indicating compliance with all signage requirements noted in the sub-sections above.

3.6 Tactile Indicators (TGSIs)

NCC Reference: D3.2 Access to buildings

D3.3 Parts of buildings to be accessible

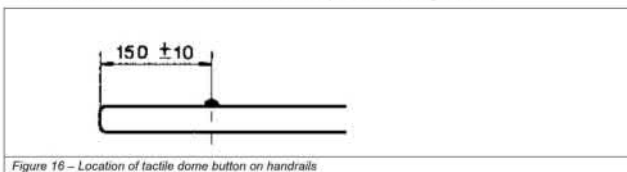
Australian Standard Reference: Clause 9 (Tactile Ground Surface Indicators (TGSIs) of AS1428.1 2009

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

3.6.1 TGSIs – NCC Clause D3.8(c) Concession

The concessional provisions of NCC Clause D3.8(c) have been applied to this project. TGSIs are not required to be provided at any internal circulation stair locations provided a tactile dome head button is installed on the circulation stair handrails.

The setout of the dome head button is to be as per the following extract.



3.6.2 TGSIs – External Stairs - Overview

TGSIs will need to be provided as part of any external circulation stair system or ramp (if the ramp requires application of TGSIs) proposed within or as part of the external design of this development.

3.6.3 TGSIs – Luminance Contrast

Clause 2.2 of AS1428.4.1:2009 requires that luminance contrast be provided between the TGSIs and the adjacent base as follows:

- Where the integrated TGSIs are of the same colour as the underlying surface—not less than 30% across its entire area.
- Where discrete TGSIs—not less than 45%.
- Where discrete TGSIs are constructed using two colours or materials, the raised surface shall have a section that has 60% luminance contrast for a diameter of 25 ± 1 mm.

		
The above integrated TGSIs format requires 30% luminous contrast to adjacent floor finish	The above discrete TGSIs format requires 45% luminous contrast to adjacent floor finish	The above two colour/material discrete TGSIs format requires 60% luminous contrast to adjacent floor finish

- (g) Where discrete warning TGSIs need to be detected by a person approaching at an angle to the continuous accessible path of travel, the TGSIs shall be arranged as shown in Figure 2.1 with a minimum of 12 discrete truncated cones in the direction of travel.

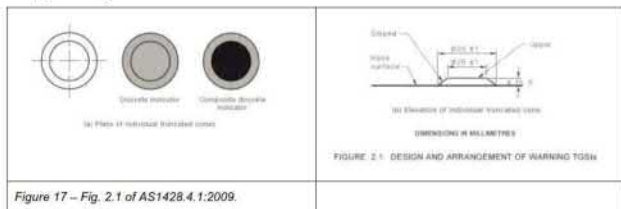
Refer to AS1428.4.1:2009 for detailed information as to the specific placement of TGSIs for varying stairway and ramp configurations.

Compliance: Future documentation, at a later design stage, will need to be provided detailing the application and specification of TGSIs.

3.6.4 TGSIs – Requirements to be satisfied

TGSIs to warn people of hazards shall comply with AS/NZS 1428.4.1.

The design and arrangement of warning tactile ground surface indicators (TGSIs) shall comply with Figure 2.1 of AS1428.4.1:2009.



3.6.5 Warning TGSIs – Requirements to be satisfied

Warning indicators shall be installed as follows:

- For the full width of the path of travel.
- Perpendicular to the direction of travel when approaching the hazard.
- Set back 300 +/- 10 mm from the edge of the hazard
- Where integrated warning TGSIs are used, they shall be arranged according to Figures 2.1(c), over the required area [see Figures 2.2(A), 2.2(B), 2.3(A), 2.3(B), 2.4, 2.5(A), 2.5(B), 2.6(A) and 2.6(B)].
- Where integrated warning TGSIs need to be detected by a person approaching at an angle to the continuous accessible path of travel, the TGSIs shall be arranged as shown in Figure 2.1, over a minimum depth of 600 mm to 800 mm from the direction of approach.
- Where discrete warning TGSIs are used over a depth of 300 mm to 400 mm, the arrangement shall be as shown in Figure 2.1 with a minimum of 6 discrete truncated cones in the direction of travel.

3.7 Walkways, Ramps and Landings

NCC Reference: NCC Clause D3.3(a)(i)
Australian Standard Reference: Clause 10 of AS 1428.1:2009

3.7.1 Preamble

At this concept design stage, it is not known whether any ramps or walkways will be incorporated, therefore the following information is provided for the design team to consider when or if designing any ramp or walkway systems.

3.7.2 Walkways

According to Clause 10.2 of AS1428.1:2009:

Walkways shall comply with the following:

- (a) The floor or ground surface abutting the sides of the walkway shall provide a firm and level surface of a different material to that of the walkway at the same level of the walkway, follow the grade of the walkway and extend horizontally for a minimum of 600 mm unless one of the following is provided:
 - (i) Kerb in accordance with Figure 18.
 - (ii) Kerb rail and handrail in accordance with Figure 19.
 - (iii) A wall not less than 450 mm in height.
- (b) Walkways shall be provided with landings, as specified in Clause 10.8, at intervals not exceeding the following:
 - (i) For walkway gradients of 1 in 33, at intervals no greater than 25 m.
 - (ii) For walkway gradients of 1 in 20, at intervals no greater than 15 m.
 - (iii) For walkway gradients between 1 in 20 to 1 in 33, at intervals that shall be obtained by linear interpolation.

For walkways shallower than 1 in 33, no landings are required.

The intervals specified above may be increased by 30% where at least one side of a walkway is bounded by—

(A) a kerb or kerb rail as specified in Clause 10.3(j) and a handrail as specified in Clause 12; or

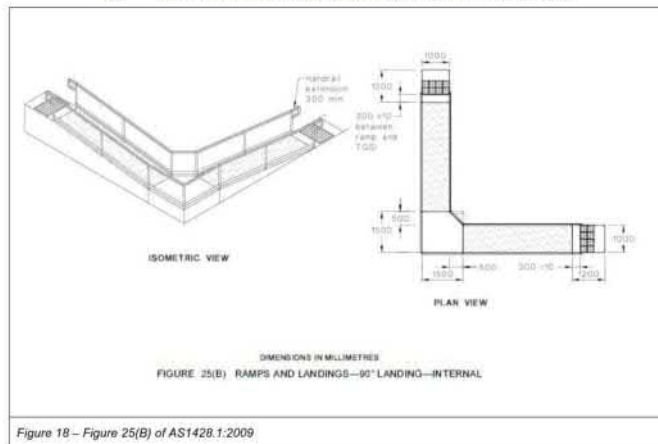
(B) a wall and a handrail as specified in Clause 12.

According to Clause 10.8 of AS1428.1:2009:

The length of landings at walkways (up to a gradient of 1 in 33) and ramps shall comply with one of the following:

- (a) Where there is no change in direction, the length shall be not less than 1200 mm, as shown in Figure 25(A).
- (b) 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).

(c) For a 180° turn, the landing shall be as shown in Figure 25(C),



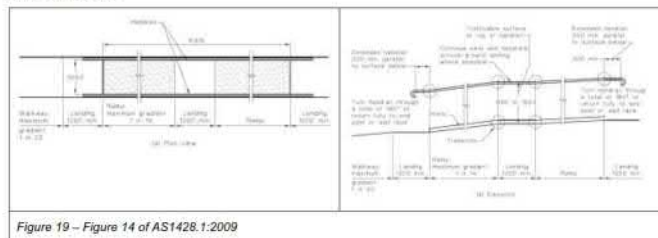
3.7.3 1:14 Ramps

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

In a building required to be accessible—

- (a) every ramp and stairway, except for ramps and stairways in areas exempted by D3.4, must comply with—
- (i) for a ramp, except a fire-isolated ramp, clause 10 of AS 1428.1

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



3.7.4 Kerb Ramps

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

The following information on Kerbs is provided for reference:

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

Kerb ramps shall have—

- (a) a maximum rise of 190 mm;
- (b) a length not greater than 1520 mm; and
- (c) a gradient not steeper than 1 in 8, located within or attached to a kerb.

The profile of ramps shall comply with the following:

- (i) The design and construction of kerb ramps shall be as shown in Figures 24(A), 24(B) and 24(C).
- (ii) The sloping sides of a kerb ramp shall be tapered or splayed as indicated in Figures 24(A) and 24(B).
- (iii) The angle at the base of the kerb ramp shall be a minimum of 166° as shown in Figures 24(A) and 24(B).

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

The following relevant extracts from the Standard are referenced below.

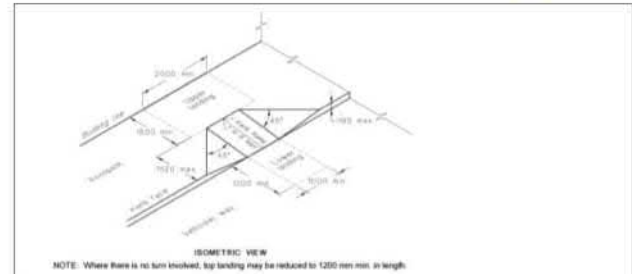
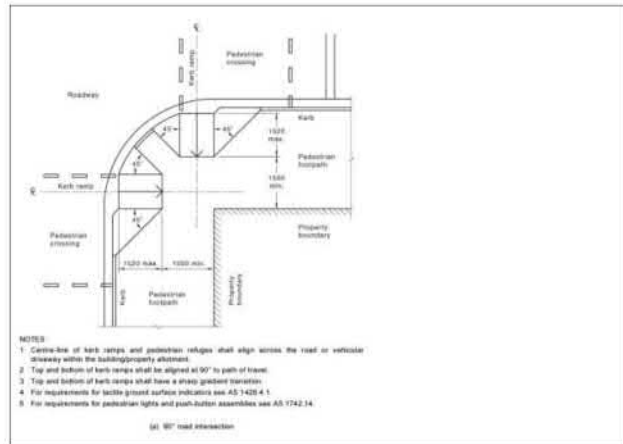


Figure 20 – Fig. 24A of AS1428.1:2009

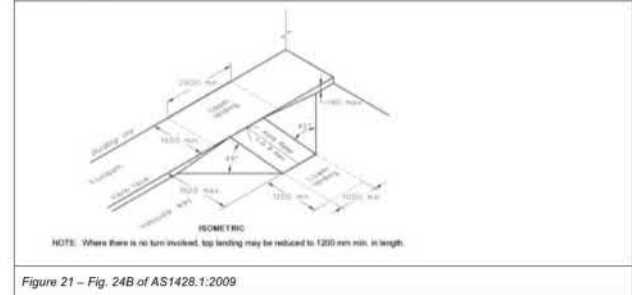


Figure 21 – Fig. 24B of AS1428.1:2009

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

Compliance: Future documentation will need to be provided indicating compliance with these requirements where any ramps or walkways are proposed.

3.8 Stairways

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

3.8.1 Stairways – Overview

The design of the project will likely incorporate both circulation and fire stairs. In some instances, the fire stairs may also function as circulation stairs.

Where fire stairs also function as circulation stairs the detailing of the fire stair will need to incorporate the features of circulation stairs and incorporate:

- Handrails to both sides of the stair flights
- Compliant handrail extensions at the top and bottom of each flight
- Compliant non-slip nosing to each going
- Provision of dome head buttons to the top of the handrails (located dome head button 150mm from the end of each handrail run)
- Compliant light levels to the goings

3.8.2 Fire Stairs

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

Specific attention is directed to the following:

- 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*

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

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

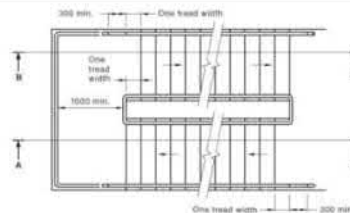


Figure 22 – Fig. 28 of AS1428.1:2009

Braille Tactile Signage is required to be installed as part of the fire stair system. Refer to the 'Signage' section of this report.

3.8.3 Circulation Stairs

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

Specific attention is directed to the following:

- Compliant handrail designs
- Compliant handrail extensions to the top and bottom of each flight
- Non-slip finish to going (Refer to NCC Table D2.14)
- Non-slip 50-75 nosing fixed to each going
- Opaque risers
- Minimum lighting level of 150 lx to be achieved

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

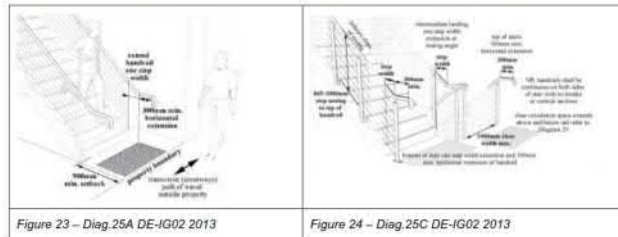
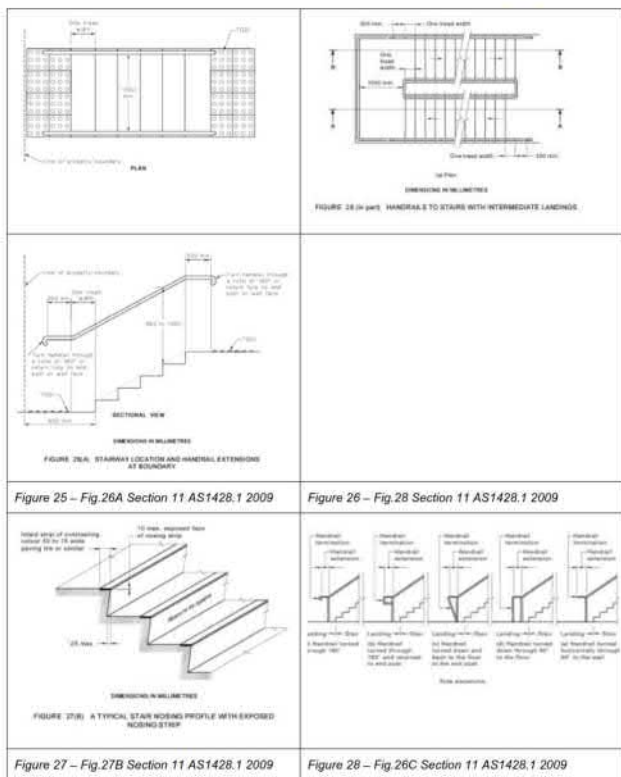


Figure 23 – Diag.25A DE-IG02 2013

Figure 24 – Diag.25C DE-IG02 2013



Compliance: At the detailed documentation design phase, stair details will need to be provided showing location and specification of handrails, TGSIs, stair nosing and dimensions of landings, goings and treads.

3.9 Handrails

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

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

- Handrails and balustrades shall not encroach into required circulation spaces.
- The cross-section of handrails shall be circular or elliptical, not less than 30 mm or greater than 50 mm in height or width for not less than 270° around the uppermost surface as shown in Figures 29(a) and 29(b). Elliptical handrails shall have the greater dimension in the horizontal axis.
- Exposed edges at ends and corners of handrails shall have a radius of not less than 5 mm.
- The top of handrails shall be not less than 865 mm nor more than 1000 mm above the nosing of stairway tread or the plane of the finished floor of the walkway, ramp or landing.
- The height of the top of the handrail, measured in accordance with Item (d), shall be consistent through the ramp (or stairs) and any landings.
- If a balustrade is required at a height greater than the handrail, both shall be provided.
- 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 50 mm. This clearance shall extend above the top of the handrail by not less than 600 mm.
- Handrails shall have no obstruction to the passage of a hand along the rail
- The inside handrail at landings shall always be continuous

Compliance: Future documentation, at a later design stage, will need to be provided indicating compliance with these requirements.

3.10 Doorways

NCC Reference: D3.2 Access to buildings

D3.3 Parts of buildings to be accessible

Australian Standard Reference: Clause 13 (Doorways, Doors and Circulation Spaces at Doorways) of AS1428.1 2009

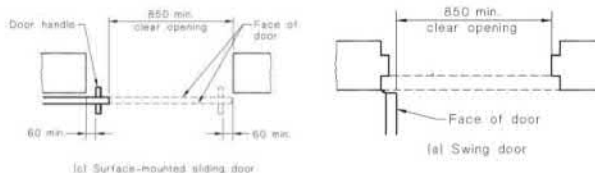
3.10.1 Clear Door Width

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

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

Compliance with this requirement may necessitate that unequal door leaves will be required to be provided to some installations.

Provide confirmation of all door clear open widths.



3.10.2 Luminance Contrast

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

All other rooms required to be accessible require compliance with doorway luminance contrast requirements noted at Clause 13.1 of AS1428.1:2009:

All doorways shall have a minimum luminance contrast of 30% provided between—

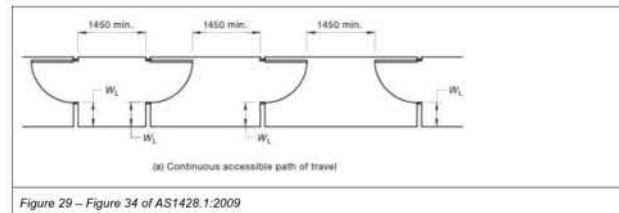
- (a) door leaf and door jamb;
- (b) door leaf and adjacent wall;
- (c) architrave and wall;
- (d) door leaf and architrave; or
- (e) door jamb and adjacent wall.

The minimum width of the area of luminance contrast shall be 50 mm

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

3.10.3 Successive Doorways

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



3.10.4 Door Controls

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

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





The above image indicates a privacy latch set provided to accessible WC facilities as viewed from within the facility



The above image indicates a privacy latch set provided to accessible WC facilities as viewed from the outside

Figure 31 – The above images are examples of compliant hardware

Compliance: Future documentation will need to be provided indicating compliance with these requirements.

3.10.5 Circulation at Doorways

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

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

Compliance: Future documentation will need to be provided indicating compliance with these requirements.

3.10.6 Sliding Doors

The design may incorporate the provision of sliding doors. Attention is directed to the detailing of the door hardware so that compliant circulation is provided. The images following provide an example of compliant sliding doors installed within a hospital.

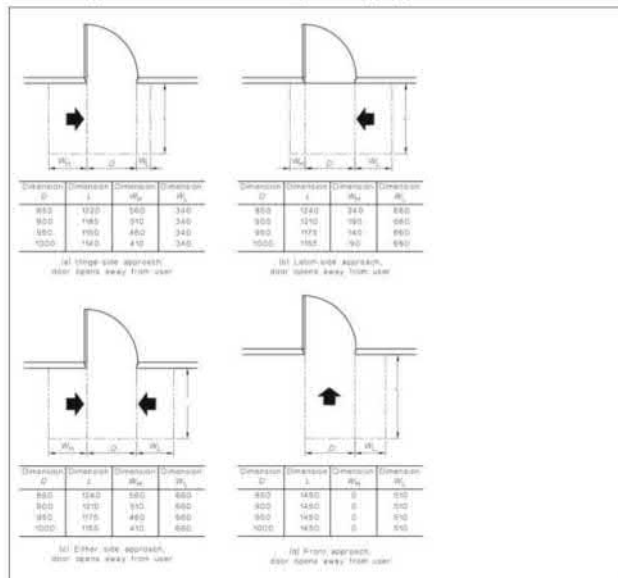
The hardware will need to be a "D" handle style fixed to both sides of the door assembly as required by Clause 13.5.2(c) of AS1428.1:2009.

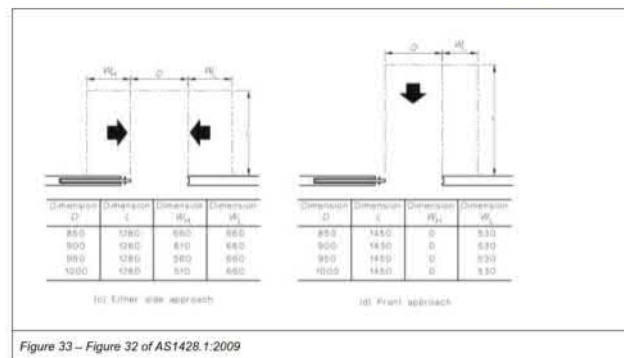
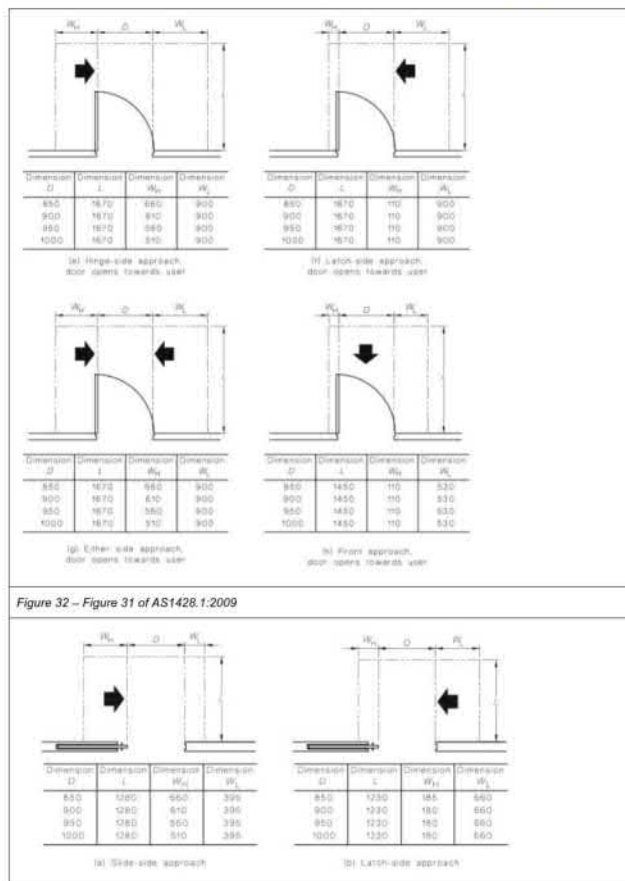
The relationship of the door handle to the fixed jambs will need to satisfy the requirements of Clause 13.2 of AS1428.1:2009.



3.10.7 Circulation at doorways – Requirements to be satisfied

The following extracts from the Standard is provided by way of information.





3.10.8 Door Closers – Requirement to be satisfied

Where door closers are fitted to doors, other than fire doors associated with the fire stairs, the maximum force required to be applied to the door to open the door is not to be greater than 20N force. (Clause 13.5.2(e) AS1428.1:2009).

The specification of the door closers will need to include details of the weight and construction of the door as well as the environmental conditions which may preclude this requirement from being satisfied.

3.10.9 Doorway Thresholds

Doors to all accessible rooms require a level threshold whereby the maximum lip shall be 3mm high for a straight edge or 5mm high for a bevelled edge. Specific attention is drawn to the doorways leading to outdoor areas.

The following photograph is an example of a level threshold transition.



Figure 34 – Photograph of door threshold

Compliance: Future documentation will need to be provided, at a later design stage, indicating compliance with all door requirements noted in the sub-sections above.

3.11 Switches

Australian Standard Reference: Clause 14 (Switches and General Purpose Outlets) of AS1428.1 2009

Requirement to be Satisfied: All switches and controls on an accessible path of travel, other than general purpose outlets, shall be located not less than 900 mm nor more than 1100 mm above the plane of the finished floor and not less than 500 mm from internal corners.

3.11.1 General

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

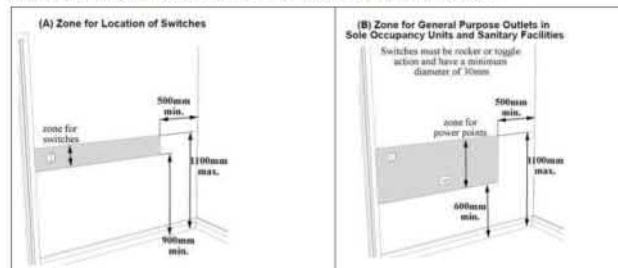
3.11.2 Video Intercoms

Any video intercom units will need to be installed in accordance with the manufacturer's instructions. The video intercom unit will need to be installed not closer than 500mm to an internal corner.

3.11.3 Access Control

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

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





3.12 Accessible Sanitary Facilities

NCC Reference: NCC Clause F2.4 Accessible Sanitary Facilities

NCC Clause D3.6

NCC Specification D3.6

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

3.12.1 WC Facilities – Overview

The design of the hospital will need to provide the for the provision for the following WC facilities:

- Male and female WCs
- Male and female ambulant WC facilities on every floor
- Accessible WC facilities on every floor
- Staff Male and female WCs
- Staff Male and female ambulant WC facilities on every floor
- Staff Accessible WC facilities on every floor
- Parents rooms
- Staff Change facilities
- Patient change areas

Where multiple accessible WC facilities are provided on a floor there will need to be an equal allocation of right-handed and left-handed facilities.

The NCC nominates the provision of WC facilities for staff and patients. There is no statutory requirement for the provision of public WC facilities in NCC Class 9a buildings.

The following table outlines the number of toilets proposed throughout the hospital and the inclusion of accessible toilets (ambulant sanitary facilities are also included in this table).

Note: Ensuite toilets associated with in patient rooms are not included in this assessment.

Note: The plans provided do not nominate all toilets as being staff, patient or public toilets therefore the following table is also based on assumptions given the context of the toilets. This will need to be clarified as the design is detailed.

Compliance: Future documentation, at a later design stage, will need to be provided indicating compliance with these requirements.

Area	No. Toilets Total	Incl. No. of Accessible	Incl. No. of Ambulant
Basement Level			
Staff Hub	4	1	0 1 is required
Engineering	1	0	0
Mortuary Court	1	1	0
Lower Level			
Drug & Alcohol	1	1	0
Drug & Alcohol	4	1	0 1 is required
Drug & Alcohol	2	1	0 1 is required
Multifaith	1	0	0
Satellite Imaging	1	1	0
Safe Assessment	1	0	0
Safe Assessment	1	0	0
Pharmacy	1	1	0
Mental Health	2	1	0 1 is required
Mental Health	4	1	0 1 is required
Mental Health	1	1	0
Ground Level			
Medical Imaging	2	1	0 1 is required
Medical Imaging	3	1	0 1 is required
Medical Imaging	1	0	0
Medical Imaging	1	0	0
Ultra Sound	1	1	0
Cancer Services	2	1	0 1 is required
Cancer Services	1	0	0
Cancer Services	1	0	0
Cancer Services	1	0	0
Cancer Services	2	0	0
Cancer Services	2	0	0
Spec Collection	1	0	0
Renal	1	0	0
Renal	1	0	0

Level 01			
Perioperative	1	0	0
Perioperative	1	0	0
Perioperative	2	0	0
Perioperative	Public toilets	Not Specified 1 is required	Not Specified 1 is required
Perioperative	1	1	0
Special Care	1	1	0
Special Care	1	1	0
Maternity Unit	1	0	0
Maternity Unit	1	0	0
Maternity Unit	2	0	00 1 is required
Level 02			
Rehab	4	1	0 1 is required
Rehab IPU 1	1	0	0
20B Gem Unit	4	1	0 1 is required
20B Gem Unit	2	0	0 1 is required
Level 03			
Cardiac Diag.	3	1	1
28B Med.	3	1	1
23B Cardiac IPU	1	0	0
23B Cardiac IPU	1	0	0
10B ICU	2	0	0 1 is required
Level 04			
28B Surgical IPU - 1	1	0	0
28B Surgical IPU - 1	3	1	0 1 is required
28B Medical IPU - 2	1	0	0
28B Medical IPU - 2	3	1	0 1 is required
28B Surgical IPU - 2	1	0	0
28B Surgical IPU - 3	1	0	0

Level 05			
28B Surgical IPU - 3	1	0	0
28B Surgical IPU - 3	3	1	0 <i>1 is required</i>
28B Medical IPU - Oncol.	1	0	0
28B Medical IPU - Oncol.	3	1	0 <i>1 is required</i>
Ground Level – Health Hub			
Adjacent to Library	3	1	0 <i>1 is required</i>
Staff workspace	1	0	0
Adjacent to Group Rooms	1	1	0
Adjacent to Consult Rooms	2	1	0
Adjacent to Group Plant	1	1	0
Level 01 – Health Hub			
Adjacent to Meeting Workspaces	1	0	0
Adjacent to Play	2	1	0
Prototype Skills Centre (Ground Floor)			
Waiting Area	4	1	0 <i>1 is required</i>

Compliance: As a minimum the following will need to be provided in the public areas of the hospital:

- 1 accessible unisex accessible WC
- 1 male ambulant cubicle
- 1 female ambulant cubicle

The drawing set provided does not clearly designate types of facilities allocated.

Once the concept design progresses to the next design phase, the provision of sanitary facilities will need to be assessed against the above noted requirements.

3.12.2 WC Facilities – Requirements to be satisfied.

The table following summarises the NCC requirements to be satisfied.

Accessible WC requirements as nominated at NCC Clause F2.4	Additional criteria to be satisfied	Criteria satisfied by the proposed design
(a) accessible unisex sanitary compartments must be provided in accessible parts of the building in accordance with Table F2.4(a); and	Accessible WC facilities are to be provided (a) 1 on every storey containing sanitary compartments; and (b) where a storey has more than 1 bank of sanitary compartments containing male and female sanitary compartments, at not less than 50% of those banks.	<i>Additional information to be provided</i>
(b) accessible unisex showers must be provided in accordance with Table F2.4(b); and	Where 1 or more showers are provided, not less than 1 for every 10 showers or part thereof.	<i>Additional information to be provided</i>
(c) at each bank of toilets where there are one or more toilets in addition to an accessible unisex sanitary compartment at that bank of toilets, a sanitary compartment suitable for a person with an ambulant disability in accordance with AS 1428.1 must be provided for use by males and females; and		<i>Additional information to be provided</i>
(d) an accessible unisex sanitary compartment must contain a closet pan, washbasin, shelf or bench top and adequate means of disposal of sanitary towels; and		<i>Additional information to be provided</i>
(e) the circulation spaces, fixtures and fittings of all accessible sanitary facilities provided in accordance with Table F2.4(a) and Table F2.4(b) must comply with the requirements of AS 1428.1; and		<i>Additional information to be provided</i>
(f) an accessible unisex sanitary facility must be located so that it can be entered without crossing an area reserved for one sex only; and		<i>Additional information to be provided</i>
(g) where two or more of each type of accessible unisex sanitary facility are provided, the number of left and right handed mirror image facilities must be provided as evenly as possible; and		<i>Additional information to be provided</i>
(h) where male sanitary facilities are provided at a separate location to female sanitary facilities, accessible unisex sanitary facilities are only required at one of those locations; and		<i>Additional information to be provided</i>

Accessible WC requirements as nominated at NCC Clause F2.4	Additional criteria to be satisfied	Criteria satisfied by the proposed design
(i) an accessible unisex sanitary compartment or an accessible unisex shower need not be provided on a storey or level that is not required by D3.3(f) to be provided with a passenger lift or ramp complying with AS 1428.1.		Additional information to be provided

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

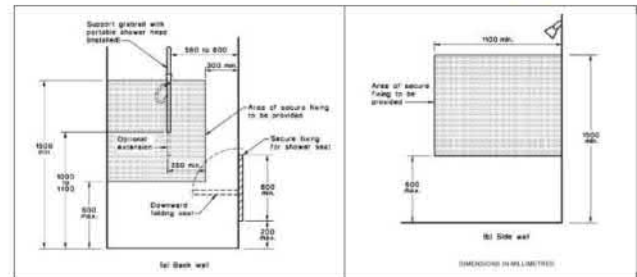
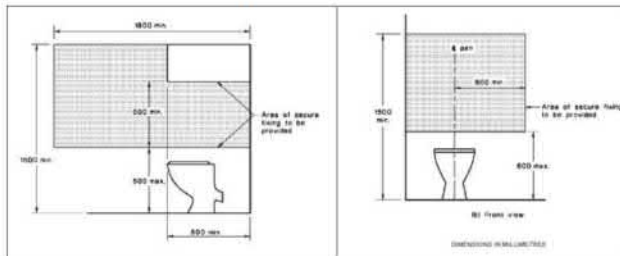
Position of TMV details are to be provided as part of the Construction Certificate documentation.

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

Compliance: Future documentation will need to be provided at a later design stage indicating compliance with these requirements.

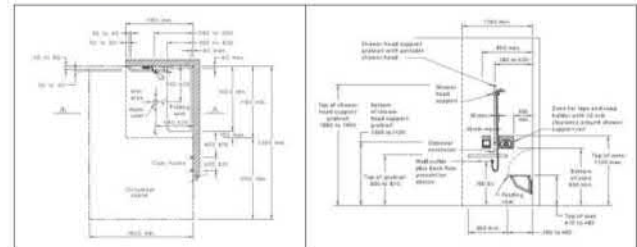
3.12.3 Wall Reinforcement

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



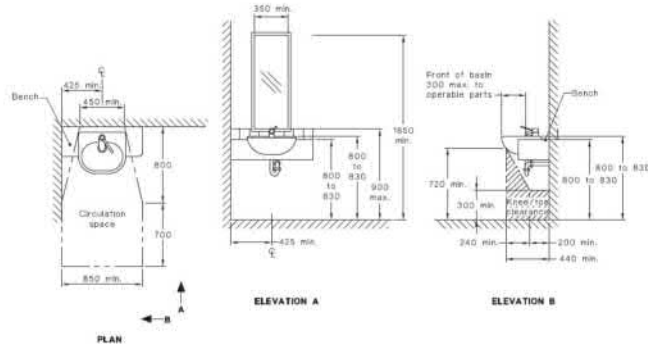
3.12.4 Shower Compartment

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



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

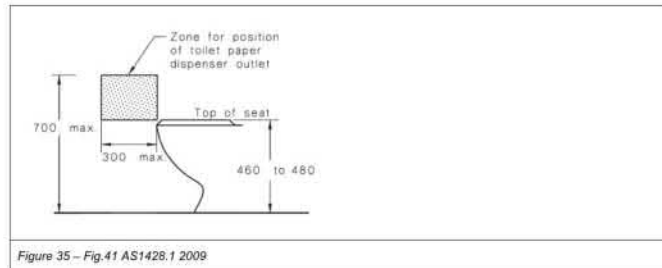
3.12.5 Hand-basins



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

3.12.6 Toilet Roll Dispensers

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



3.12.7 Grabrails to WCs

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

The clearance between a grabrail and the adjacent wall surface or other obstruction shall be not less than 50 mm and not more than 60 mm. The clearance above a horizontal grabrail shall extend above the top of the grabrail by not less than 600 mm. The clearance below a horizontal or angled rail shall be a minimum of 50 mm except at fixing points.

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

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

3.12.8 Summary

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

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

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

Compliance: Future documentation, at a later design stage, will need to be provided indicating compliance with these requirements in all locations where accessible sanitary facilities are proposed.

3.13 Ambulant Sanitary Facilities

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

3.13.1 Ambulant Sanitary Facilities – Requirements to be satisfied

NCC, F2.4 specifies:

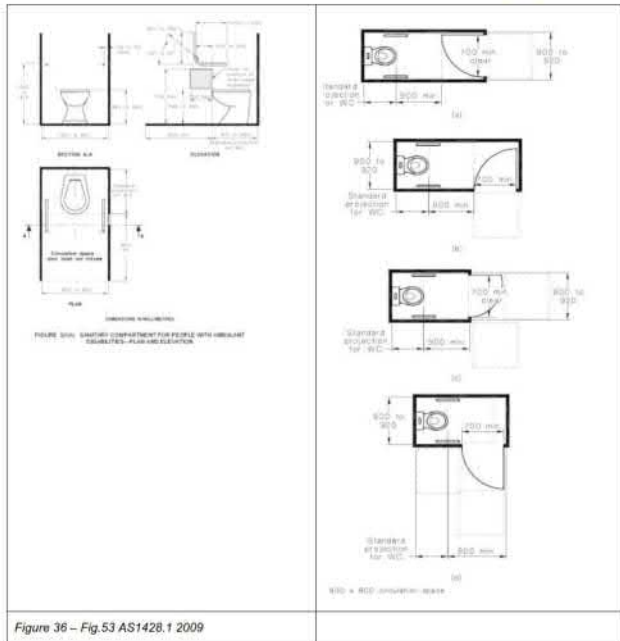
- (c) *at each bank of toilets where there are one or more toilets in addition to an accessible unisex sanitary compartment at that bank of toilets, a sanitary compartment suitable for a person with an ambulant disability in accordance with AS 1428.1 must be provided for use by males and females;*

Refer to the table summary noted in Section 3.12.1 of this report which outlines the locations of toilets throughout the hospital and where ambulant sanitary facilities are required to be nominated.

Compliance: The location and provisions of ambulant sanitary facilities are to be updated as per the table noted at Section 3.12.1 and ambulant toilets are to be added where necessary.

3.13.2 Ambulant Sanitary Facilities – Setout

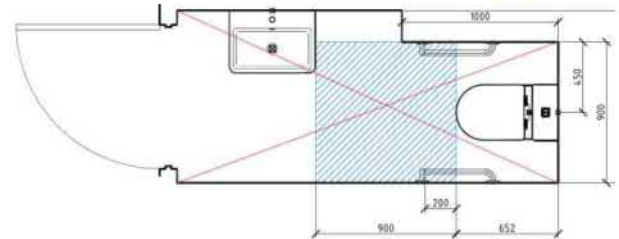
The dimensions of the ambulant sanitary facilities are required to comply with Clause 16 of AS1428.1:2009.



3.13.3 Ambulant Sanitary Facilities - Freestanding

Where freestanding ambulant cubicles incorporating a handbasin the spatial requirements associated with the WC pan will need to satisfy the requirements noted at Clause 16 of AS1428.2:1992.

The sketch following indicates the layout for a free standing ambulant WC facility noting the clearances to be achieved.



Compliance: The specifications of ambulant sanitary facilities are to be provided for review at a later design stage.

3.14 Vertical transport

NCC Reference:	D3.3 Parts of buildings to be accessible E3.6 Passenger Lifts
Australian Standard Reference:	AS1735.12 1999 Lifts, Escalators and Moving Walks

Compliance: At a later design phase, all lift locations are to be noted. Future documentation will need to be provided from the relevant lift supplier to confirm internal lift car sizing as well as button locations etc.

3.14.1 Lifts

The design incorporates several passenger lifts as well as service/BOH lifts.

The detailing of the lift cars will need to satisfy the requirements of NCC Clause E3.6, the provisions of AS1735.12 and the placement of call buttons to comply with Clause 14 of AS1428.1:2009.

The minimum clear open width of the lift door shall be 900mm.

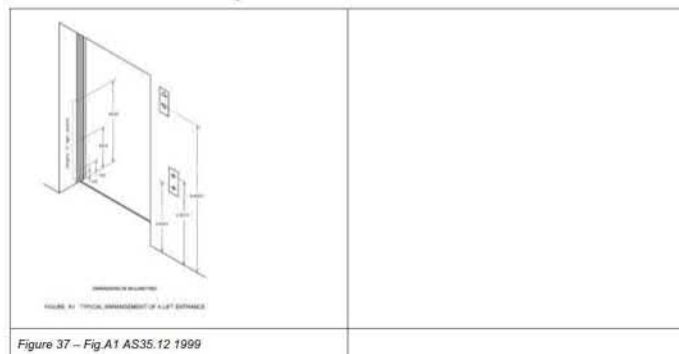
The minimum lift car dimension to satisfy the requirements of NCC Part E is as follows:

- Passenger Lifts 1400 x 1600mm (Lift travel greater than 12m)
- Passenger Lifts 1100 x 1400mm (Lift travel less than 12m)

The actual sizing of the lift cars will be determined by the Vertical Transport Engineer for this project.

Attention is directed to the placement of the lift call button at each level.

The lift call button in this case should be located next to the lift door as indicated in the extract from the Standard following:



For placement of buttons, handrails and the like, we rely upon verification of compliance with AS1735.12 from the lift manufacturer.

3.15 Carparking

NCC Reference:	DP1(a)(i) DP8(a) and (b) D3.5 Accessible Parking
Australian Standard Reference:	AS 2890.6:2009 Carparking AS 1680.2.1:2008 Carparking (undercover) AS 1158.3.1 Car parking (external parking areas)

3.15.1 Overview

The hospital will include provision of new carparking at several locations, including outdoor carparking and multi-deck carparking. Refer to Appendix K – Traffic Impact Assessment in the EIS prepared for this project.

The table following summarises the number of new parking spaces being provided as part of this project. A total of 1,402 parking spaces is proposed inclusive of 34 accessible parking spaces.

	Parking	Accessible
	1402	34
Ground	11	1
B1	144	0
B2	38	0
Gnd	144	8
L1	156	8
L2	156	8
L3	156	9
L4	157	0
L5	159	0
L6	159	0
L7	122	0

3.15.2 Requirements to be Satisfied

The minimum number of accessible parking spaces will need to be provided in accordance with the provisions of NCC Table D3.5.

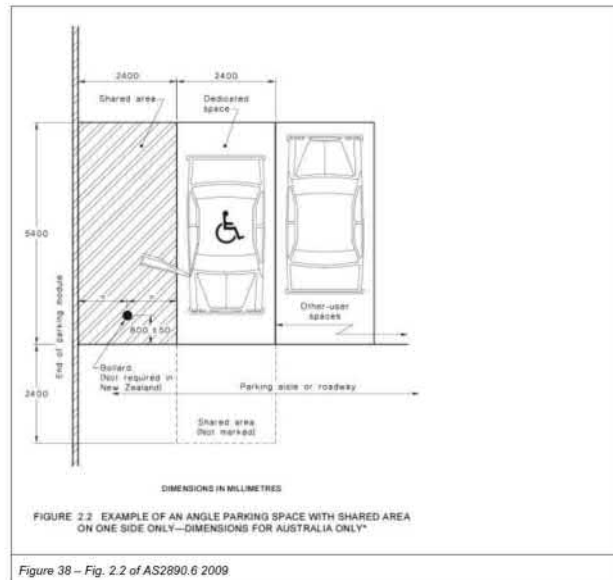
- Outpatient Hospital 1 space for every 50 parking spaces provided or part thereof
- Non- Outpatient Hospital 1 space for every 100 parking spaces provided or part thereof

The spatial requirements for an accessible parking space are as per the figure below, which details a 2.4m wide parking space with a 2.4m wide shared zone.

The following parking calculator has been prepared to calculate the number of accessible parking spaces to be provided.

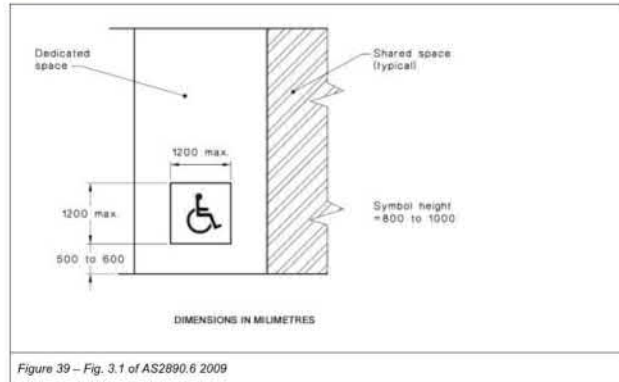
Carparking Calculator		Nos
Total number of car parking spaces provided		1,402
50/50 split between spaces dedicated to staff and patients		
Staff		701
Patients		701
Assume a 70/30 split between in-patients to out-patients		
Inpatients (30%)		211
Out Patients (70%)		491
The number of accessible car parking spaces required for staff (1:50)		15
The number of accessible car parking spaces required for inpatients (1:100)		3
The number of accessible car parking spaces required for outpatients (1:50)		10
Total number of accessible parking spaces to be provided		28

Compliance: The provision of 34 accessible parking spaces as part of this development satisfies the requirements of NCC Table D3.5.



3.15.3 Linemarking

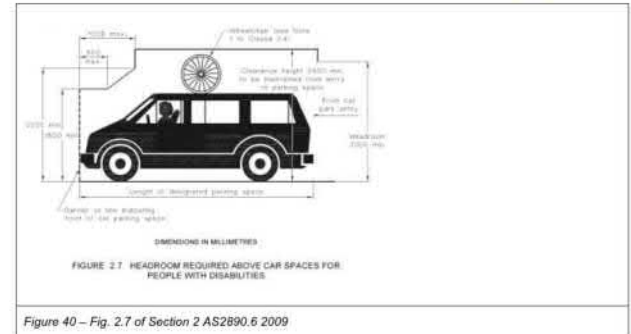
The line marking associated with the accessible parking spaces will need to satisfy the provisions of Section 3 of AS2890.6:2009. The international symbol for access shall be marked in accordance with Figure 3.1 of AS2890.6:2009. Refer to the extracts from the Standard below.



3.15.4 Height above parking spaces (undercover parking spaces)

The parking is nominated as being 'at-grade'. Should the detailed design provide any accessible parking within the building then the height clearances will need to be satisfied.

A 2200mm high clear path of travel is to be provided within the traffic aisle ways of the carpark. A clear zone of 2500mm will need to be provided above the accessible parking space.



3.16 Furniture and Fitments

NCC Reference: D3.3 Parts of buildings to be accessible
Australian Standard Reference: 24 (Furniture and Fitments) of AS1428.2 1992

3.16.1 Counters

The reception counters require a section that is accessible for a wheelchair.

3.16.2 Tables

The tables located in eating areas will need to include accessible tables at a minimum of 2%.

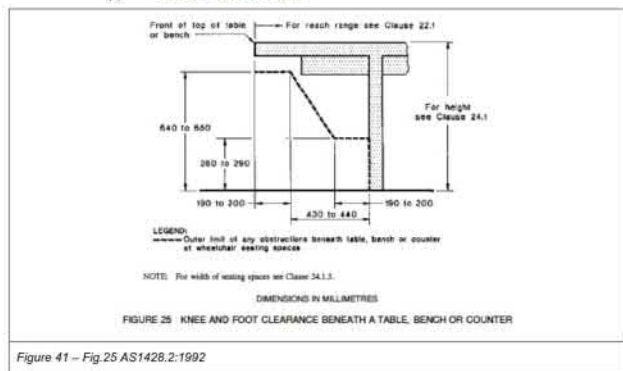
Workstation layouts will need to include accessible desks in each zone.

The preferred range of adjustability is 750-850mm AFFL.

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

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

- (a) Height from the finished floor to the top of the unit:
 - (i) 1st unit: 750 ± 20 mm.
 - (ii) 2nd unit: 850 ± 20 mm.
- (b) Height of clearance beneath unit, from the finished floor:
 - (i) 1st unit: 730 ± 20 mm.
 - (ii) 2nd unit: 820 ± 20 mm.



3.16.3 Waiting Areas

Wheelchair seating spaces are to be provided within waiting/seating areas

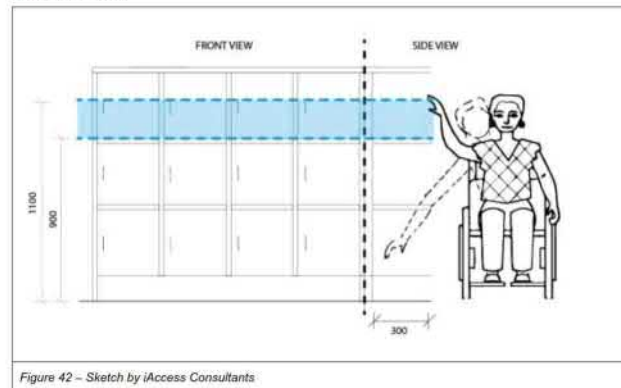
The size of the wheelchair space is to be 1300 x 800 mm to satisfy the wheelchair sizing for the 90th percentiles of wheelchairs. The minimum overall space for wheelchairs inclusive of circulation area is to be 2450 x 800 mm.

A 1m-wide (minimum) pathway should be provided throughout seating areas, with 1500 x 1500mm turning zones for 90deg turns.

3.16.4 Lockers

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

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



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

3.16.5 Beverage Bays

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

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

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

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

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



3.16.6 Work Stations

The distance between tables within work stations is to be a minimum of 1650mm.

The positioning of furniture in the staff room will need to comply with the provisions of Clause 24.1.7 of AS1428.2:1992.

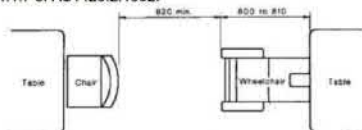


FIGURE 27 DISTANCE BETWEEN TABLES AND CHAIRS

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

A 1m-wide (minimum) pathway should be provided throughout accessible areas, with 1500 x 1500mm turning zones for 90deg turns.

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

3.16.7 Drinking Fountains

Drinking fountains will need to comply with the provisions of Clause 27.3 of AS1428.2:1992. (Extract follows)

27.3 Drinking fountains and water coolers

27.3.1 General

At each location where drinking fountains or water coolers are provided, at least one of these shall be in accordance with Figure 33.

27.3.2 Water outlet

The water outlet shall be as close as possible to the front of the unit. It shall direct the water flow to a height of 80 mm to 100 mm in a trajectory that is parallel or nearly parallel to the front of the unit (see Figure 33).

27.3.3 Controls

Controls shall either be centrally positioned at the front of the unit or if positioned at the side, be on both sides and not more than 180 mm from the front of the unit. Controls operable by one hand shall require an operating force of not more than 19.5 N.

27.3.4 Recessed drinking fountains

Where a drinking fountain is recessed, a clear width of space underneath the unit not less than 800 mm shall be provided.

27.3.5 Cup dispensers

The height of the operative components of cup dispensers shall be not more than 1100 mm above the trafficable surface.

3.16.8 Vending Machines

Whilst vending machines are proprietary items it is recommended that confirmation be sought from the supplier that the vending machine complies with the requirements of Clause 29 of AS1428.2:1992.

Specifically, the following items will need to be confirmed:

- The height of the operative components to be located between 500-1200mm AFFL
- The force required to operate any control should be less than 19.5N
- Controls should be clearly identifiable by touch and sight and should have a tactile surface
- Appropriate lighting levels

Compliance: Future documentation will need to be provided, detailing all areas noted above.

3.17 Lighting

Australian Standard Reference: Clause 19 of AS1428.2:1992
Appendix D of AS1680.2.1:2008

3.17.1 Overview

At this early design phase, lighting is not of urgent consideration, however the following information is provided for future reference.

3.17.2 Requirements to be Satisfied

It will be necessary that the Construction Certificate documentation confirm that the minimum lighting levels nominated by the Australian Standards are achieved.

In addition to the minimum lighting levels identified at Clause 19 of AS1428.2:1992 the provisions of Table D1 of AS1680.2.1:2008 which nominates interior light levels to be achieved must be considered.

The following table schedules the lighting levels nominated within the Australian Standards for accessibility:

LOCATION	CLAUSE 19 AS1428.2:1992	APPENDIX D AS1680.2.1:2008
Entrances, passages & walkways	150lx	160lx
Waiting rooms	-	160lx
Corridors Passageways	-	40lx
Ramps	150lx	40lx
Toilets and locker Rooms	200lx	
Counter tops	250lx	320lx
Accessible parking spaces	-	40lx

The electrical documentation will need to indicate compliance with these minimum lighting levels.

Compliance: Compliance to be provided by way of a certificate from the relevant electrical report.

3.18 Hearing augmentation

NCC Reference: NCC Clause D3.7
NCC Clause D3.6
NCC Specification D3.6

Australian Standard Reference: AS1428.5:2010 Design for access and mobility - Communication for people who are deaf or hearing impaired
AS1428.4.1:2009

Requirement to be Satisfied: NCC D3.7 Hearing Augmentation

A hearing augmentation system must be provided where an inbuilt amplification system, other than one used only for emergency warning, is installed—

- ii. in an auditorium, conference room, meeting room or room for judicatory purposes; or
- iii. at any ticket office, teller's booth, reception area or the like, where the public is screened from the service provider.

3.18.1 Hearing Augmentation - Overview

The hospital will incorporate meeting and other rooms where built in amplification systems will likely be provided as part of the fit-out.

3.18.2 Hearing Augmentation – Requirements to be satisfied

A hearing augmentation system is to be provided in locations where a built-in amplification system is provided and to rooms provided for judicatory purposes.

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

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

Rooms with inbuilt communication systems will need to provide a hearing augmentation system.

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

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

ALS types include—

- (a) audio frequency induction loop systems (AFILSs);
- (b) modulated radio systems (commonly referred to as FM systems); and

(c) infra-red (IR) systems.

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

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

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

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

- (i) the type of hearing augmentation; and*
- (ii) the area covered within the room; and*
- (iii) if receivers are being used and where the receivers can be obtained*

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

Compliance: Any rooms with in-built communication systems are to be noted and respective hearing augmentation systems are to be detailed for review.

4 Disability (Access to Premises - Buildings) Standards 2010 – Compliance Summary

PART / CLAUSE	DISABILITY (ACCESS TO PREMISES) STANDARD 2010 CRITERIA TO BE SATISFIED	COMPLIANCE	ACTION / COMMENT
A4.1	Classifications Class 9a — Health Care building	Note	
DP1	Performance requirement Access must be provided, to the degree necessary, to enable: a) people to: i. approach the building from the road boundary and from any <i>accessible</i> carparking spaces associated with the building; and	<i>Additional Information to be provided</i>	
	ii. approach the building from any accessible associated building; and	<i>Additional Information to be provided</i>	
	iii. access work and public spaces, accommodation and facilities for personal hygiene; and	<i>Additional Information to be provided</i>	
	b) Identification of accessways at appropriate locations which are easy to find.	<i>Satisfied</i>	
DP4	Performance requirement <i>Exits</i> must be provided from a building to allow occupants to evacuate safely, with their number, location and dimensions being appropriate to: a) the travel distance; and b) the number, mobility and other characteristics of occupants; and c) the function or use of the building; and d) the height of the building; and e) Whether the <i>exit</i> is from above or below ground level.	<i>Satisfied</i>	
DP6	Performance requirement So that occupants can safely evacuate the building, <i>accessways</i> to <i>exits</i> must have dimensions appropriate to: a) the number, mobility and other characteristics of occupants; and b) the function or use of the building.	<i>Satisfied</i>	

PART / CLAUSE	DISABILITY (ACCESS TO PREMISES) STANDARD 2010 CRITERIA TO BE SATISFIED	COMPLIANCE	ACTION / COMMENT
DP8	Performance requirement Carparking spaces for use by people with a disability must be: <ol style="list-style-type: none"> provided, to the degree necessary, to give equitable access for carparking; and designated and easy to find. 	<i>Satisfied</i>	
DP9	Performance requirement An inbuilt communication system for entry, information, entertainment, or for the provision of a service, must be suitable for occupants who are deaf or hearing impaired.	<i>Additional Information to be provided</i>	
D3.1	General Building Access Requirements Class 9a — Health Care Building		
Table D3.1	To and within all areas normally used by the occupants.	<i>Satisfied</i>	
D3.2	Access to Buildings		
	(1) An <i>accessway</i> must be provided:	<i>Satisfied</i>	
	(a) to a building <i>required</i> to be <i>accessible</i> ;		
	(b) from the main points of a pedestrian entry at the allotment boundary; and	<i>Additional Information to be provided</i>	
	I. from another <i>accessible</i> building connected by a pedestrian link; and	<i>Additional Information to be provided</i>	
	II. from any required accessible carparking space on the allotment.	<i>Additional Information to be provided</i>	
	(2) In a building <i>required</i> to be <i>accessible</i> , an <i>accessway</i> must be provided through the principal pedestrian entrance, and: <ol style="list-style-type: none"> through not less than 50% of all pedestrian entrances including the principal pedestrian entrance; and in a building with a total <i>floor area</i> more than 500sqm, a pedestrian entrance which is not <i>accessible</i> must not be located more than 50 m from an <i>accessible</i> pedestrian entrance; Except for pedestrian entrances serving only areas exempted by clause D3.4.	<i>Satisfied</i>	

PART / CLAUSE	DISABILITY (ACCESS TO PREMISES) STANDARD 2010 CRITERIA TO BE SATISFIED	COMPLIANCE	ACTION / COMMENT
D3.3	Parts of buildings to be accessible		
	In a building <i>required</i> to be accessible: a) every ramp and stairway, except for ramps and stairways in areas exempted by clause D3.4, must comply with:		
	i. for a ramp, except a fire-isolated ramp, clause 10 of AS 1428.1; and	<i>Additional Information to be provided</i>	
	ii. for a stairway, except a fire-isolated stairway, clause 11 of AS 1428.1;	<i>Additional Information to be provided</i>	
	iii. for a fire-isolated stairway, clause 11.1(f) and (g) of AS 1428.1;	<i>Additional Information to be provided</i>	
	b) every passenger lift must comply with clause E3.6;	<i>Additional Information to be provided</i>	
	c) accessways must have: i. passing spaces complying with AS 1428.1 at maximum 20 m intervals on those parts of an accessway where a direct line of sight is not available; and ii. turning spaces complying with AS 1428.1: A. within 2m of the end of accessways <i>where</i> it is not possible to continue travelling along the accessway; and B. at maximum 20 m intervals along the accessway;	<i>The plans have been marked up indicating locations where 1540 x 2070mm turn bays are required.</i>	
	d) an intersection of accessways satisfies the spatial requirements for a passing and turning space;	<i>Satisfied</i>	
	e) a passing space may serve as a turning space;	<i>Satisfied</i>	
	f) a ramp complying with AS 1428.1 or a passenger lift need not be provided to serve a storey or level other than the entrance storey in a Class 5, 6, 7b or 8 building- (i) containing not more than 3 storeys; and (ii) with a floor area for each storey, excluding the entrance storey, of not more than 200sqm.	<i>Not Applicable</i>	
D3.5	Carparking	<i>Satisfied</i>	
D3.6	Signage	<i>Additional Information to be provided</i>	

PART / CLAUSE	DISABILITY (ACCESS TO PREMISES) STANDARD 2010 CRITERIA TO BE SATISFIED	COMPLIANCE	ACTION / COMMENT
D3.7	Hearing Augmentation	<i>Additional Information to be provided</i>	
D3.8	Tactile Indicators	<i>Additional Information to be provided</i>	
D3.9	Wheelchair seating	<i>Not Applicable</i>	
D3.10	Swimming pool	<i>Not Applicable</i>	
D3.11	Ramps (Connecting Ramps)	<i>Not Applicable</i>	
D3.12	Glazing on an accessway On an accessway, where there is no chair rail, handrail or transom, all frameless or fully glazed doors, sidelights and any glazing capable of being mistaken for a doorway or opening, must be clearly marked in accordance with Clause 6.6 of AS 1428.1.	<i>Additional Information to be provided</i>	If full-height glazing is provided, visual indicators are required.
Part D4	Braille & Tactile Signs	<i>Additional Information to be provided</i>	The signage detailing will need to comply with the provisions of Clause D3.6 and Specification D3.6 of the BCA as well as Clauses 16.3 and 17 of AS1428.2 which addresses the size of the pictogram as well as the height of lettering.
Part E3	Lift Installation	<i>Additional Information to be provided</i>	
Part F2	Sanitary and other facilities	<i>Additional Information to be provided</i>	